

A carbon containing 3D printed electrode was scanned with SKYSCAN 2214 at high resolution. Phase contrast retrieval reconstruction enhances visibility of separate phases inside the 3D printed electrode.

2022

ANNUAL REPORT

Exceeding Expectations

Innovation with Integrity



Dear Fellow Bruker Shareholders,

Bruker again drove solid financial and operating performance in 2022. We're seeing increasing demand for our innovative life science, diagnostics, biopharma, applied and industrial research and QC solutions. Bruker generated revenue of over \$2.5B, delivering organic growth of over 10% compared to 2021, with new orders outpacing revenues. Non-GAAP operating margins ¹ increased to 20.0% in 2022, a new high watermark for the company, contributing to non-GAAP diluted earnings per share (EPS) of \$2.34, up over 11% from 2021. During the year we made significant investments to capture the historic market opportunities in front of us, particularly in proteomics and spatial biology, and we will continue to do so in 2023. We also made key acquisitions to expand our offerings in proteomics consumables, automation, software and expert proteomics biopharma services. Bruker's 2022 return on invested capital (ROIC), a non-GAAP measure, was over 24%, amongst the highest in our peer group.

We achieved all of this while navigating ongoing logistical, supply chain, and geopolitical challenges. While gradually improving, we don't expect these challenges to be fully resolved until at least the end of 2023 or into early 2024. However, our robust backlog provides good visibility into the year 2023. Bruker's progress and achievements in 2022 serve as further validation for our differentiated culture of disciplined entrepreneurialism, and we'll continue to '**innovate with integrity**' throughout 2023.

¹ Reconciliations of non-GAAP financial measures to the most directly comparable GAAP financial measures are included at the end of this report, and in Bruker's Fourth Quarter and Fiscal Year 2022 Financial Results Earnings Press Release which can be found on Bruker's IR website.

Project Accelerate 2.0 Update

The first pillar of our dual strategy, which we call Project Accelerate 2.0, focuses on accelerating revenue growth, while continuing to deliver sustainable long-term margin expansion. In 2022, revenues from our six *Project Accelerate 2.0* high-growth, high-margin initiatives represented more than 56% of Bruker's total revenue, up from 54% in 2021. We continue to expect our Project Accelerate 2.0 initiatives to deliver strong organic revenue growth in the years ahead, with particular strength in our Proteomics and Spatial Biology initiatives.

Let me share an update on our progress with these two key initiatives.

In proteomics, we launched the newest member of our revolutionary 4D multiomics timsTOF platform with the launch of the new timsTOF HT system. The timsTOF HT includes a novel 4th-generation TIMS XR cell and 14bit digitizer for even greater dynamic range, enhanced peptide coverage and more accurate quantitation, particularly in unbiased 4D plasma and tissue proteomics, as well as in epiproteomics (PTMs). Early in 2022, we also expanded our proteomics strategy by adding key capabilities from three companies named PreOmics, Prolab Instruments, and PepSep, which nicely complement our proteomics solutions, and in January of 2023 we closed the majority acquisition of advanced proteomics CRO Biognosys.

In spatial and single-cell biology, an area of widespread basic and translation research interest, we reached a key milestone with the commercial launch of Canopy Biosciences *CellScape* system. This is the next generation in ChipCytometry instrumentation, advancing the cutting-edge for fast, automated, highly quantitative in situ spatial phenotyping with a large field of view. Additionally, we announced key innovations for spatial multiomics of tissue and tumor microenvironments, and our MALDI HiPLEX-IHC imaging of targeted proteins, when overlaid with unbiased lipid, glycan and other small molecule MALDI Imaging on fresh frozen or FFPE tissues offers compelling multiomics innovations for spatial tissue biology and cancer research.

Expanding our High-Growth, High-Margin Initiatives with *Project Accelerate 2.0*

In addition to these developments in our two potential breakout opportunities of Proteomics and Spatial Biology, we have made good strides in other *Project Accelerate 2.0* initiatives. Some highlights include:

We continued to innovate in Ultra-High Field GHz-class NMR, with the development of a unique single-story 1.0 GHz 4K NMR magnet, called Ascend Evo 1.0 GHz. Its significantly reduced footprint, weight, and ceiling height requirements, as well as a 65% reduction in liquid helium consumption provide many more structural biology researchers access to the sensitivity and resolution of GHz NMR. We received the first three orders for these systems in the second quarter of 2022, two of which we have already successfully installed at the customer sites in the fourth quarter of 2022 - well ahead of the initial schedule.

The smaller footprint Ascend Evo has not reduced demand for our two story 1.2 GHz magnets, and we recently announced two new 1.2 GHz orders from universities in the UK. During the year 2022, we also introduced new innovative capabilities enabling novel NMR functional structural biology investigations into larger globular proteins and protein complexes using novel NMR liquids and solid-state probe technologies.

Lastly, we see the customer need for high quality software solutions to improve proteomics research workflows, and we have endeavored to increase our aftermarket offerings to meet this need. We released our TIMS DIA-NN software for high-throughput, deep and unbiased 4D proteomics workflows early in 2022. This software features a novel TIMScore algorithm which takes advantage of machine learning to predict CCS values of tryptic and phosphorylated peptides. This addresses the problem of traditional search algorithms being unable to assign a peptide spectral match due to ambiguity resulting from low signal-to-noise or chimeric interferences. Another important launch during the year was our MetaboScape 2023 software which advances fluxomics applications and ion mobility offset mass aligned events for high-throughput 4D-Metabolomics.

Sustained Focus on Operational Excellence

Combined with our strategic focus on revenue and margin growth through Project Accelerate 2.0, we continue an unrelenting focus on Operational Excellence, the second pillar of our strategy. This pillar concentrates our commercial, R&D and operations teams on productivity enhancements and operational efficiency improvements in every area of our business. Importantly, these changes also contribute to further improving the quality and robustness of our systems and to expanding our operating margins.

Environmental, Social and Governance Update

At Bruker, we support environmental sustainability initiatives across our businesses, and have begun to develop tools to help in the development of sustainable forms of energy. Recently, our Bruker Energy & Supercon Technologies (BEST) segment received multi-year contracts to supply key technology components for major fusion projects in Europe and Asia. Though still in the research phase, magnetic confinement fusion holds promise as a clean, abundant, sustainable, efficient and safe energy source.

Future fusion power plants could replace carbon dioxide-emitting fossil fuel plants, as well as nuclear fission reactors that generate long-lived radioactive waste.

At the corporate level, we continue to strengthen our corporate governance practices, including a long-standing commitment to furthering our gender diversity. As we believe strongly in investing in our employees, we were proud to recently launch a Talent Development Program in our BioSpin Group, designed to create an internal talent pipeline and strengthen our employer brand.

We have recently formalized our processes surrounding companywide reporting on ESG topics, and expect to publish a Corporate Sustainability Report mid-year in 2023.

Capital Deployment

In 2022 we continued the disciplined pursuit of M&A opportunities; late in the year, Bruker made two key acquisitions to bolster our neuroscience research portfolio. The first, Inscopix, is a neuroscience pioneer and market leader of miniaturized microscopes for freely moving animal brain imaging. These “miniscopes”, when paired with our high-resolution multiphoton microscopy capabilities, will offer a broad range of capabilities for exploring neural network function in animals enabling innovative academic and preclinical research. We also acquired Neurescence Inc., an innovative provider of ultralight fiber-bundle Multiscopes for simultaneous multi-region, optical functional neuroimaging. Neurescence creates strong synergies with Bruker’s existing Ultima multiphoton solutions, as well as with the Inscopix miniscopes.

In early 2023, Bruker announced a strategic partnership and majority-ownership investment in Biognosys AG. Biognosys mass spectrometry-based proteomics CRO services and proteomics software support biopharma customers in uncovering connections between genome, transcriptome, and phenotype to explore the static and dynamic nature of disease biology. This partnership broadens access to Biognosys’ leading proteomics CRO services and software for unbiased proteomics to benefit proteomics research, disease biomarker discovery, drug discovery and development, and future clinical trials leveraging pharmaco-proteomics.

In 2022, we made capital expenditures totaling \$129 million, designed to add production capacity, improve efficiency, and advance innovation. For 2023, we expect to further increase our investments in these areas to roughly \$130 million. In 2022, we returned almost \$293 million to shareholders through dividends and share repurchases.

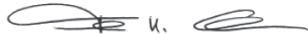
Financial Outlook for 2023

Our strong bookings growth in 2022 contributes to a robust backlog, which gives us good visibility into 2023. The outlook for 2023, which we provided in mid-February, anticipates 8-10% non-GAAP organic revenue growth for the year.² We expect our innovative portfolio to continue to deliver solid gross margin expansion and operating profit growth. Additionally, we will continue to strategically invest in our key Project Accelerate 2.0 initiatives and breakout opportunities to capture the historic growth opportunities in front of us.

The commitment from our customers, colleagues, shareholders, and collaborators is vital to our success as an organization, and I would like to thank all of you for your contributions to Bruker over the past year.

I look forward to sharing our future progress and achievements.

Sincerely,



Frank H. Laukien, Ph.D.

Chairman, President and Chief Executive Officer
April 2023

² For the Company's outlook for FY 2023 organic revenue growth, we are not able to provide without unreasonable effort the most directly comparable GAAP financial measures, or reconciliations to such GAAP financial measures on a forward-looking basis.



Forward-Looking Statements

Any statements contained in this letter which do not describe historical facts may constitute forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, including statements regarding our Project Accelerate 2.0 initiatives, business strategy, future sales, organic revenue, operating profit, gross margins, future non-GAAP operating margins, capital expenditures and shareholder returns. Any forward-looking statements contained herein are based on current expectations, but are subject to risks and uncertainties that could cause actual results to differ materially from those indicated, including, but not limited to, those risks and uncertainties identified in our filings with the SEC, including, without limitation, our Annual Report on Form 10-K for the year ended December 31, 2022, as may be updated by our quarterly reports on Form 10-Q. We expressly disclaim any intent or obligation to update these forward-looking statements other than as required by law.

SUPPORTING BREAKTHROUGH RESEARCH IN NEUROSCIENCE AND ONCOLOGY

Biognosys makes the Proteome accessible by covering the needs of a wide range of biomarker and biopharma researchers

In January 2023, Biognosys and Bruker announced a strategic partnership in which Bruker has made a majority-ownership investment in Biognosys.

Biognosys' versatile portfolio of proteomics services, software, and kits makes the proteome accessible and actionable to empower research, drug development, and clinical decision-making. Their unique technologies utilize high-resolution mass spectrometry to quantify thousands of proteins with industry-leading precision, depth, and throughput. They provide a multi-dimensional view of protein expression, function, and structure in all biological species and sample types.

Their market-leading Spectronaut® software has pioneered the analysis of complex mass-spectrometric data and is today the gold standard of proteomics data analysis. The Biognosys TrueTarget®, TrueDiscovery®, and TrueSignature® research service solutions provide deep, peptide-level proteome insights for drug and biomarker discovery and development:

- TrueTarget uniquely addresses pressing challenges in drug discovery by identifying on- and off-target effects and characterizing binding sites.
- TrueDiscovery, powered by Spectronaut, offers unbiased, multi-dimensional insights into the expression, function, and structure of 4,200 proteins in plasma, 11,000 proteins in other biofluids, and 13,800 proteins in tissue or cell lines.
- TrueSignature high-precision, customizable, multiplex panels enable simultaneous absolute quantification of proteins for pharmacodynamic readouts and clinical biomarker monitoring in support of pharmacoproteomics-enhanced clinical trials.

The collaboration is expected to create strong synergies between Bruker's pioneering timsTOF platform and Biognosys' services, software, and kits. With Bruker investments, Biognosys plans to open an advanced proteomics CRO services laboratory in the US. This new facility will operate high-throughput applications on timsTOF instruments, making Biognosys' services accessible for biomarker and biopharma research worldwide.

Fig. 1 Biognosys is a leading provider of unbiased proteomics CRO services



Accessible High-Field NMR Supports Breakthrough Research in Structural Functional Biology

Bruker continues to enable new research in fundamental cell biology and pathobiology with the extension of the GHz NMR network of laboratories across the globe. NMR systems are generating excellent scientific data for functional structural and molecular biology, as well as for phenomics clinical research, allowing scientists to dive deeper into the structural details of binding and dynamics of protein structures and complexes.

Bruker's new compact, ultra-high field Ascend Evo 1.0 GHz NMR spectrometer offers a significantly smaller footprint, height and weight than conventional NMR instruments, 65% lower liquid Helium consumption and a shorter installation time.

Ascend Evo 1.0 GHz NMR spectrometers were recently installed at a new structural biology hub in Barcelona, Spain and the RIKEN Center for Biosystems Dynamics Research in Yokohama, Japan, to advance research into fundamental cell biology and pathobiology.

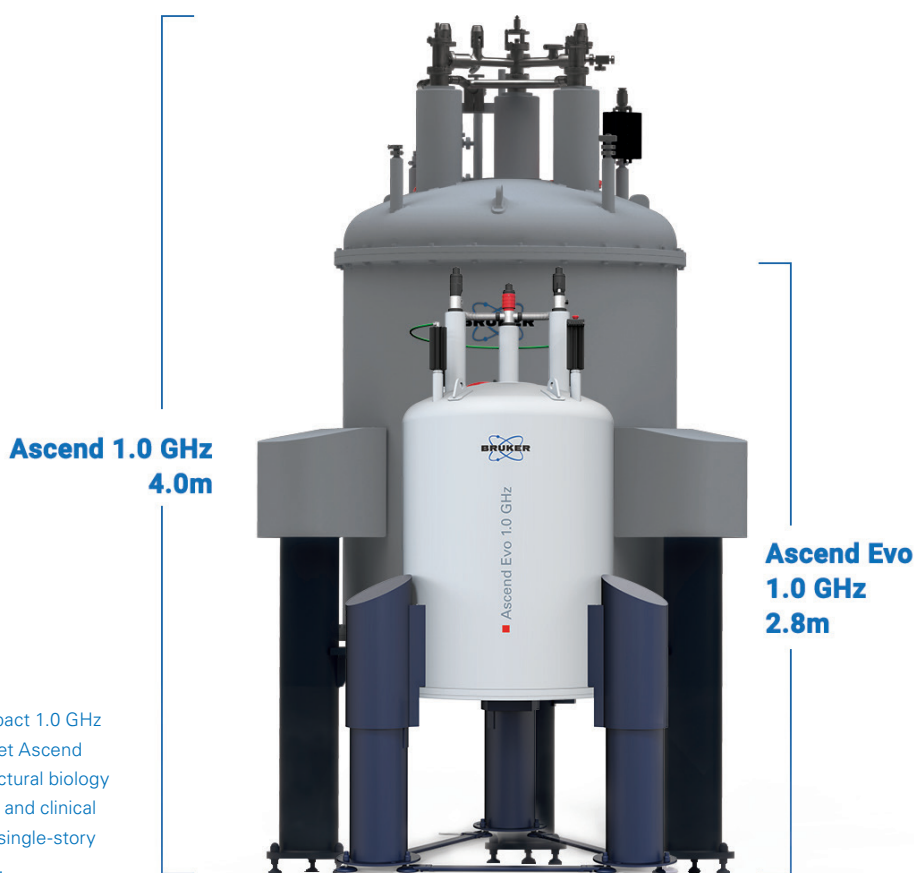


Fig. 2 Compact 1.0 GHz NMR magnet Ascend Evo for structural biology applications and clinical research in single-story laboratories.



Dr. Ichio Shimada, Team Leader at RIKEN Center for Biosystems Dynamics Research in Yokohama, Japan



Prof. Miquel Pons, Miquel Pons Valles, Group Leader of the BioNMR Group at Universitat de Barcelona

timsTOF® Mass Spec Platform Enables the 4D-Proteomics™ Revolution

Proteins are key to understanding biological processes and pathophysiology and are also of fundamental interest for both basic and clinical research. The large-scale study of proteins introduces fundamental challenges for MS-based proteomics including high sample complexity, large dynamic range in protein concentration, and big-data computational analysis. With the introduction of the Trapped Ion Mobility Spectrometry (TIMS) on the timsTOF platform an evolution in technology is achieved by adding an additional dimension. This results in the transition from 3D-Proteomics (retention time, m/z and MS/MS fingerprint) into 4D-Proteomics™ (addition of intrinsic CCS values).

The timsTOF series addresses the need for high sample throughput with unmatched robustness, dramatically reducing downtime and enabling the user to consistently achieve accurate and precise results. Together with unprecedented scan speeds, it opens up the realm of high-throughput proteomics on complex samples to address population diversity and large sample cohorts to gain the statistical power needed for high confidence conclusions.

Sample complexity and the large dynamic range in the proteome is also tackled by the unrivalled selectivity achieved by TIMS (Trapped Ion Mobility Spectrometry) separation. TIMS enables Mobility Offset Mass Aligned (MOMA) where previously undistinguishable analytes with the same or nearly the same mass can now be separated, identified, and quantified, due to differences in ion mobility. TIMS also maximizes ion utilization and signal-to-noise ratios by additionally focusing ions in the time and space dimensions during a PASEF® scan enabling the timsTOF platform to achieve the ultimate sensitivity with a large dynamic range. This also opens the door for quantity-limited specimens, such as rare cell types, primary cells, needle biopsies, immunopeptidome samples, or laser capture micro-dissected samples.

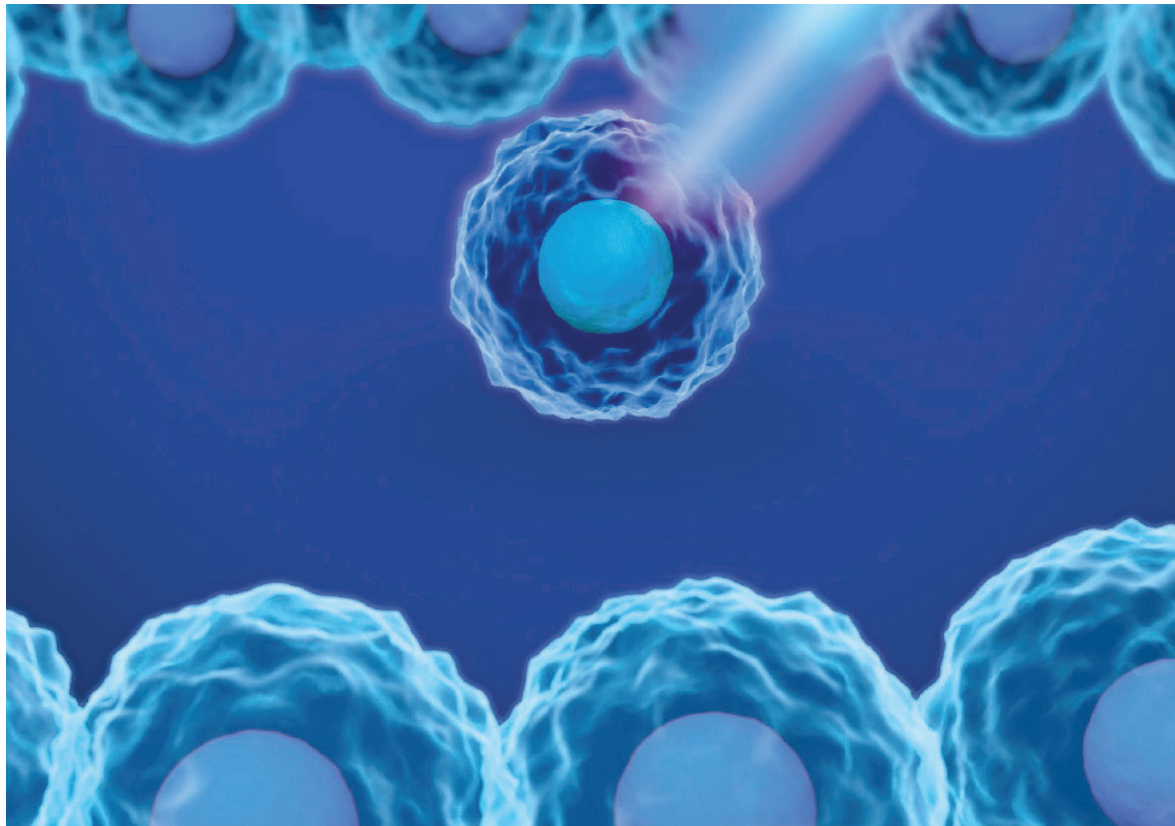
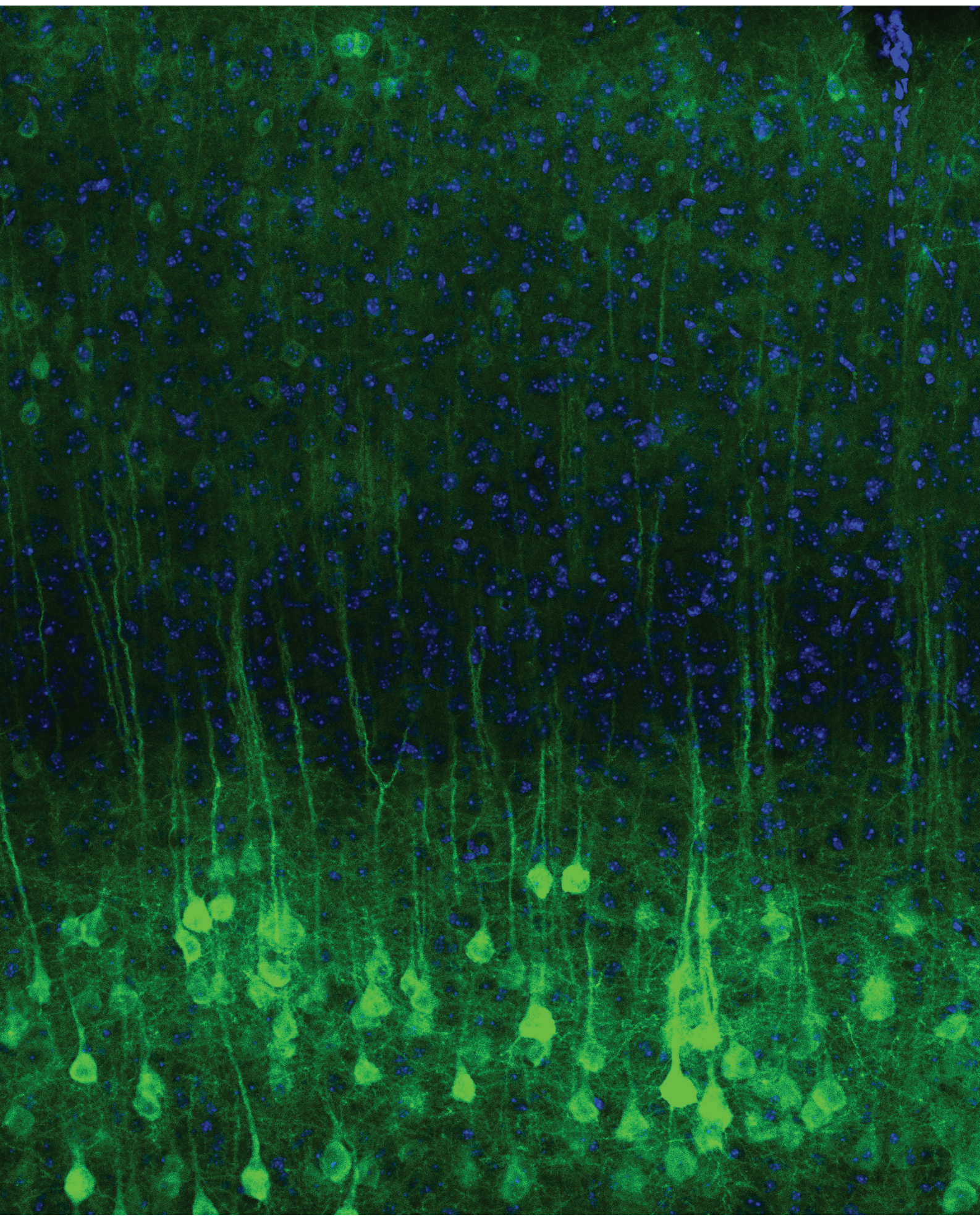


Fig. 3 Accurate relative protein quantitation with PASEF and timsTOF



Advanced Fluorescence Microscopy Unveils the Mechanisms Behind Brain Function

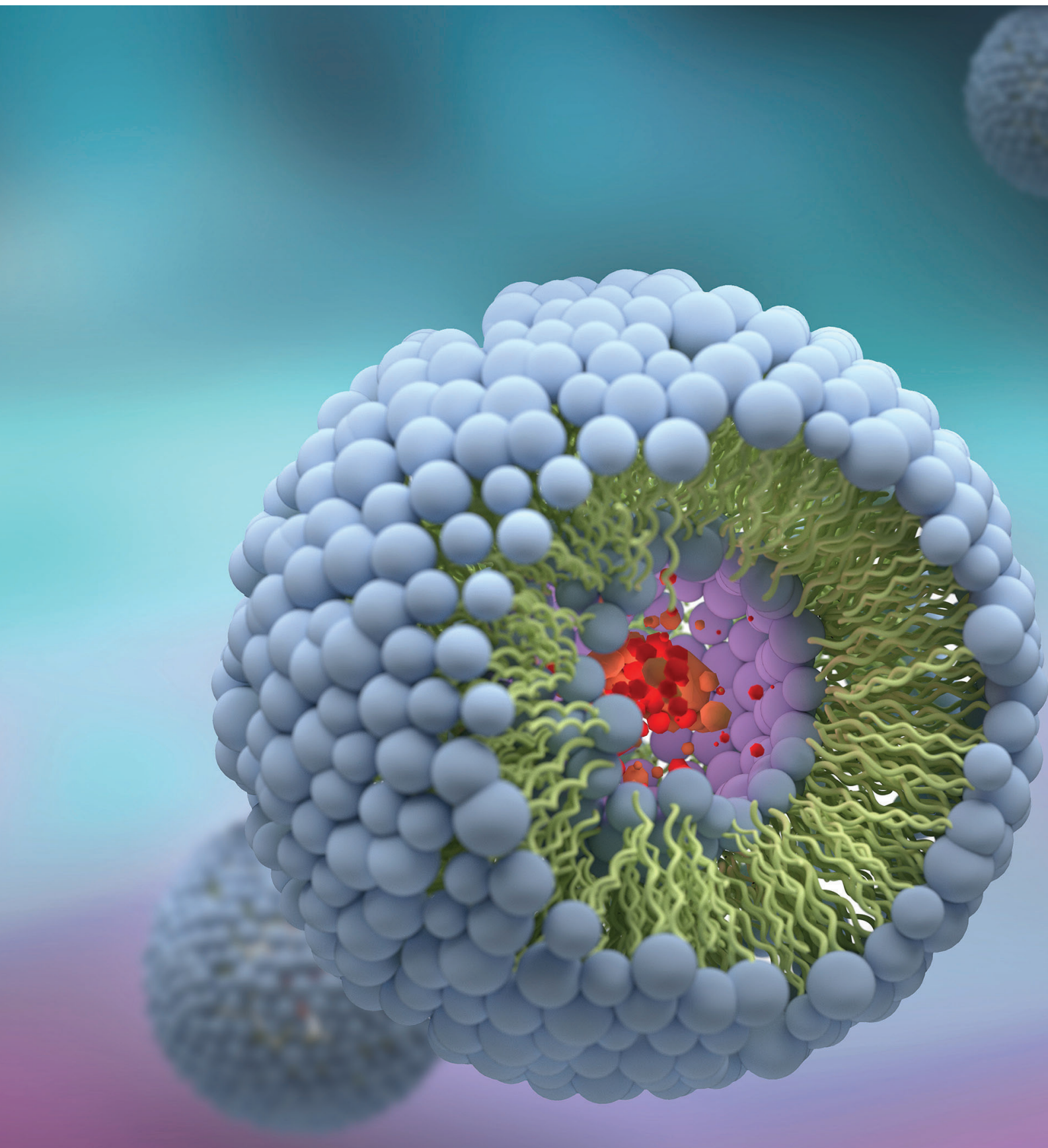
Bruker's fluorescence microscopy solutions are helping neuroscientists in their pursuit to understand brain function and develop effective neurological treatments. The Ultima Multiphoton microscopes continue to build a strong reputation of performing fast in vivo imaging with single cell resolution over larger areas deep in the brain. With the acquisition of Inscopix, Inc. and Neurescence, Inc. we are now also expanding neuroscientists' research capabilities to freely behaving and free-moving animals.

Inscopix's miniscopes deliver an end-to-end neurotechnology stack of advanced in vivo imaging, stimulation, and data analytic solutions that enable quantitative and rapid insights into brain and behavior. Our nVue™ one-photon (1P) dual-color miniscope provides cellular-resolution imaging of neural activity with the added capability of blood flow imaging, which offers critical insights into neurovascular dynamics for aging, dementia, stroke, and other debilitating brain vascular diseases.

Neurescence multi-region, multi-color 1P imaging systems enable simultaneous imaging and stimulation of multi-neuronal subtypes in up to four regions for investigation of the brain and spinal cord. Their extremely flexible and light-weight fiber-bundle design has great potential to address diversified research needs and future trends, opening the door to advanced imaging modalities.

These new advances align with our mission of enabling a better understanding of the neural circuitry underpinning brain function and behavior, to empower breakthroughs in neuroscience research.

Fig. 4 Histology image of hippocampal CA1 structure of freely-behaving subject. (Imaged with Inscopix miniscope using GCaMP and GFP/DAPI stain.)





EXPANDING HIGH-PERFORMANCE INSTRUMENTS INTO APPLIED MARKETS

Advanced NMR Technology for Pharmaceutical and Industrial Solutions

With industrial applications seeking new innovative research and quality control methods, Bruker is bringing the power of advanced nuclear magnetic resonance (NMR) technology into accessible solutions tailored to sectors such as food, forensics, pharma, and industrial analysis.

Bruker has expanded its Fourier 80 benchtop spectrometer platform, based on Fourier Transform (FT) NMR technology, to allow not only scientists in research but also spectroscopic in applied industrial markets to capitalize on the unparalleled molecular insights that NMR brings to the analysis of myriad of molecules.

In the pharmaceutical industry, biotherapeutics such as mRNA vaccines and monoclonal or bispecific antibodies have become some of the most sought after medicines on the market today. Nuclear Magnetic Resonance (NMR) is an essential tool to study a range of biological molecules like lipids, oligonucleotides, RNA and lipid nanoparticles. It has opened up new opportunities in research by allowing previously unobtainable molecular weights to be studied with innovative approaches like solid-state NMR (ssNMR) and time-domain NMR (TD-NMR). Bruker's Fourier RxnLab also brings process control to bioreactors with quantitative on-the-fly monitoring for maximum efficiency and product safety.

The Bruker Distributed Laboratory Topology (DLT) streamlines process development and efficiently runs repetitive samples remotely on the Fourier 80 benchtop spectrometer platform, while providing a full suite of cross-compatible NMR solutions for cost efficiency and maximum solution deployment. The Ascend series of superconducting magnets combines innovative technologies for unparalleled performance, while the streamlined AvanceCore systems offer sophisticated high-field NMR analysis at an economical cost. The customizable Avance floor-standing NMR product lines are tailored to answer analytical questions; whereas, the Fourier 80 benchtop spectrometer platform uses low-field technology and provide a compact, easy-to-use option for routine laboratory and manufacturing applications.

The Bruker DLT allows for higher frequency testing of incoming goods, securing high quality standards or identifying potential downstream production issues quickly. Consistent results across systems reduce time spent translating outcomes between techniques, and enable faster innovation and new product development in industrial production compared to traditional methods.

Fig. 5 Understanding the properties of pharmaceuticals in solid form is critical for drug development and efficacy. Solid-state NMR is able to provide us with a wealth of information on the physical and chemical state of pharmaceutical products at every stage of drug development.

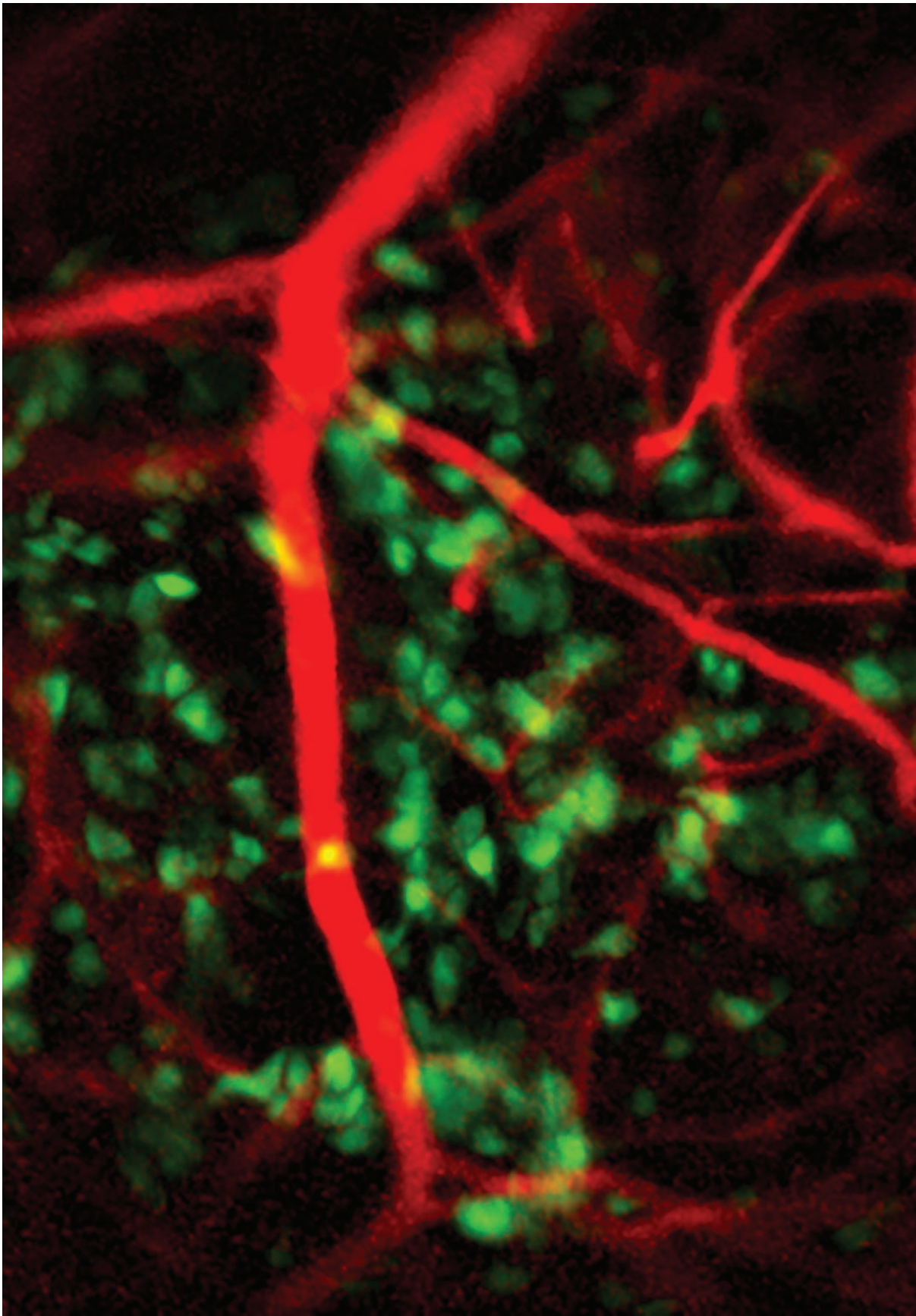


A new focus on rapid, automated MS analysis

Following a period of exceptional growth driven by trapped ion mobility spectrometry (TIMS) technology and the fast-developing Omics arena, Bruker Applied Business Unit continued the success of TIMS by strengthening its focus on the well-established markets in food, environmental, toxicology and industrial sectors. Using the added dimension of molecular size and shape to enhance the automated identification process in contaminant screening primarily for food and environmental applications.

Addressing the applied market requires effective, user-friendly solutions in which the software, rather than the instrument, is at the center. Bruker CALID is focusing on software tools such as Target-Screener, TASQ, Metaboscape and Polytools that are driving the adoption of MS in the applied markets sector, both in research and high throughput screening laboratories.

Established TIMS technology and high-resolution MS have proved powerful in untargeted applications, i.e. identifying the differences between samples when the informative compounds are unknown. The technology has found successful application in identifying new contaminants of concern (CEC), such as the per- and polyfluoroalkyl substances (PFAS) found in a range of common household products, and food pesticides. The European Pesticide Residue Workshop and Recent Advances in Food Analysis symposia, both held in September 2022, cited the benefits of TIMS technology and associated software solutions to enhance the detection of pesticides in foods, determine adulteration of foods and the authenticity of foods of designated origin.



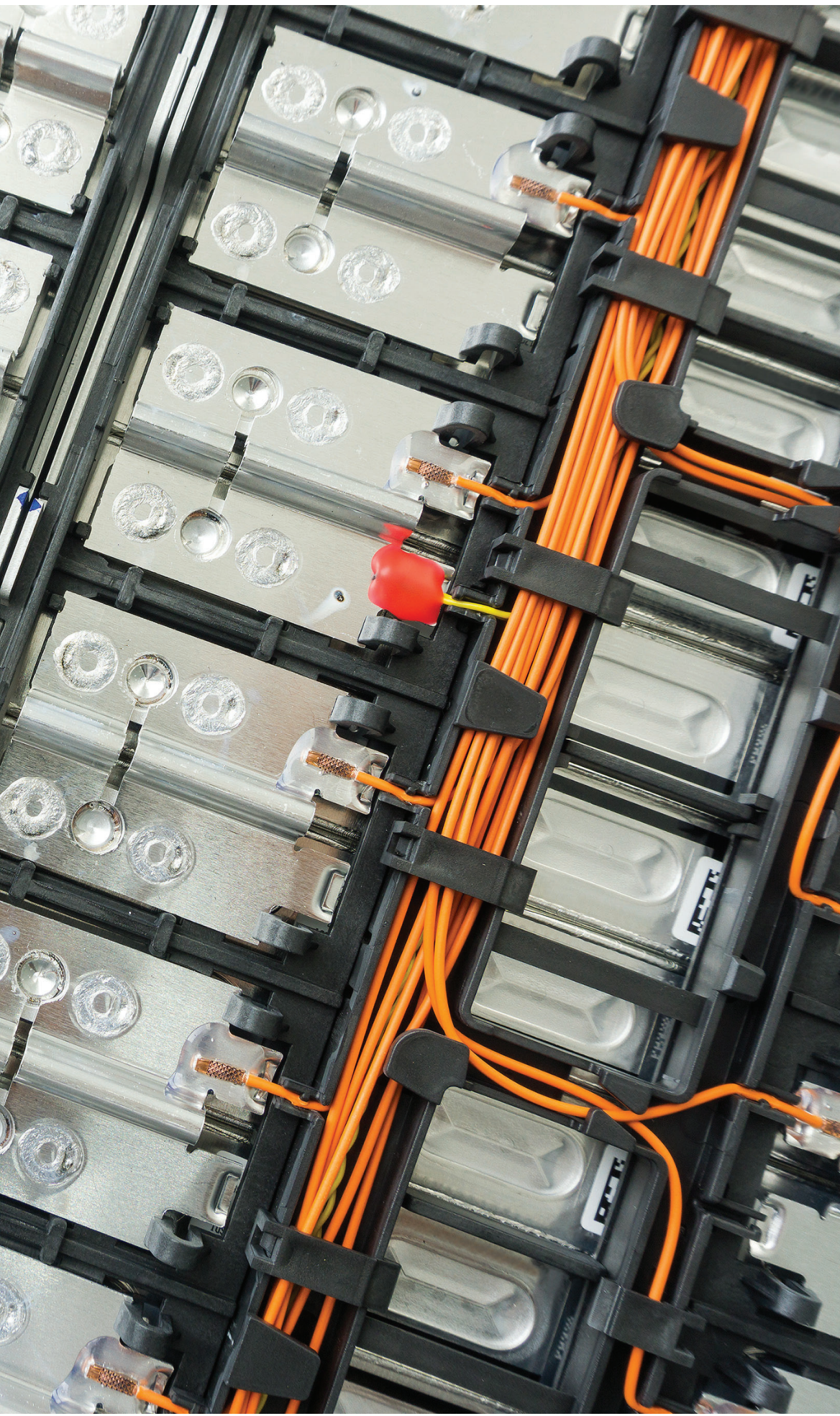


Fig. 6 Lithium-ion batteries

CLEANTECH THE SUSTAINABLE ENERGY OF THE FUTURE

Real-time NMR and EPR Imaging Enables Research for Sustainable Energy Solutions

Nuclear Magnetic Resonance (NMR) and Electron Paramagnetic Resonance (EPR) spectroscopy, as well as X-ray diffractometers, are playing a vital role in advancing research into rechargeable lithium-ion batteries (LIBs).

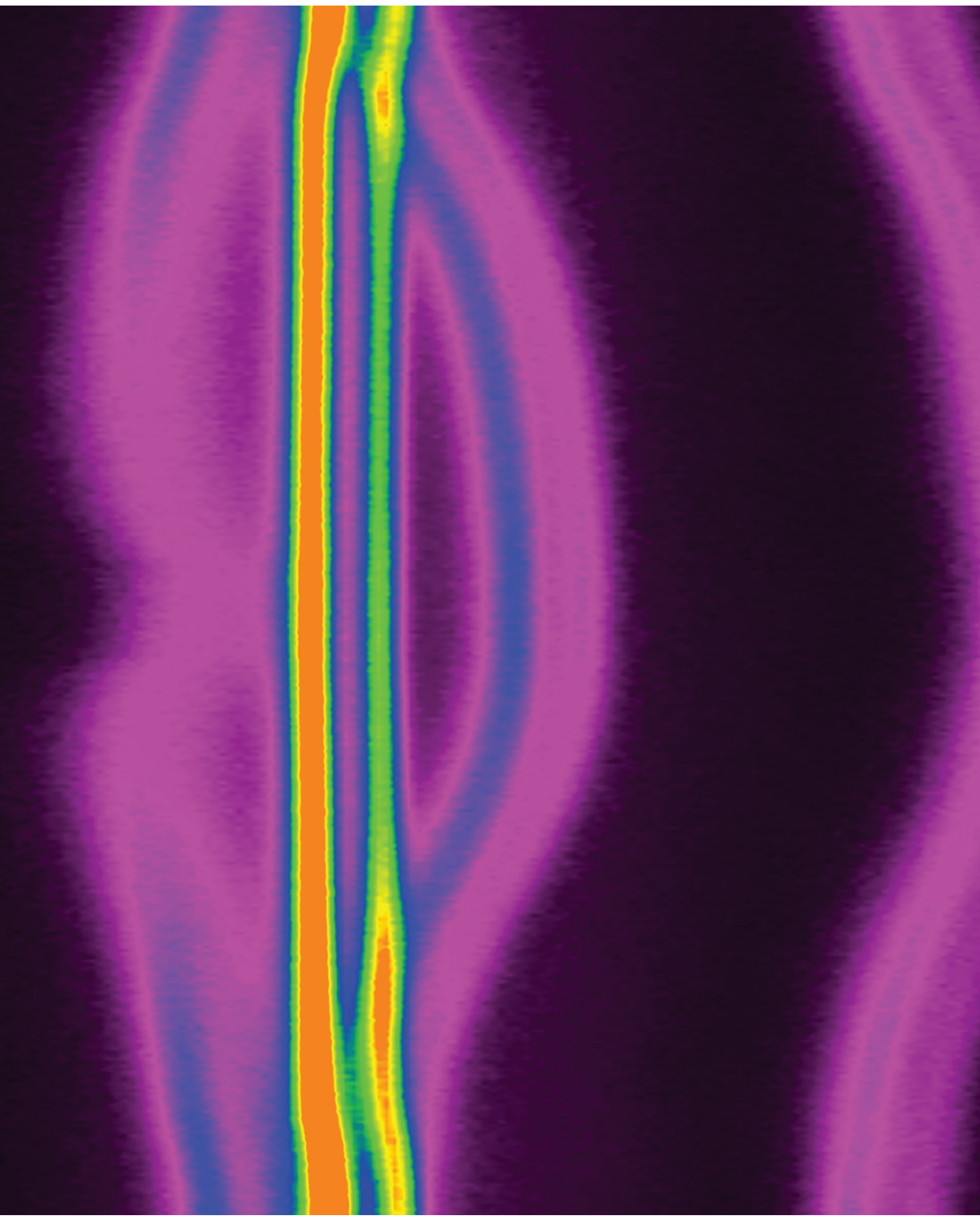
Real-time NMR can be used to investigate the contributing factors to structural change in the LIB electrodes to help prevent degradation. In situ NMR can also be used to enhance battery research to help understand the mechanisms, prevent failure and, ultimately, improve performance. Furthermore, in operando EPR provides information about lithium morphology, via in situ EPR imaging of the quantitative visualization of metallic lithium deposits, which can potentially impair battery performance.



Clare Grey, Professor of Chemistry at the University of Cambridge, UK, focusing on battery and fuel cell research

Research being conducted at the University of Cambridge, UK, is investigating the potential of cost-effective and durable electricity storage systems from renewable sources and increasing battery lifespan. Professor Dame Clare Grey and her team are using Bruker's NMR instruments to develop a game-changing new battery – the lithium air battery. By using oxygen from the air as a reagent with lithium, the battery's energy density is increased tenfold – in a sustainable, climate-friendly energy supply of the future.

Research is also progressing into alternative battery types that are showing promise for the future, including solid state batteries and Na-ion batteries. Bruker solid state NMR, dynamic nuclear polarization (DNP) NMR, flow NMR and EPR imaging are helping drive research into exciting, innovative new technologies to help secure the portable energy of the future.

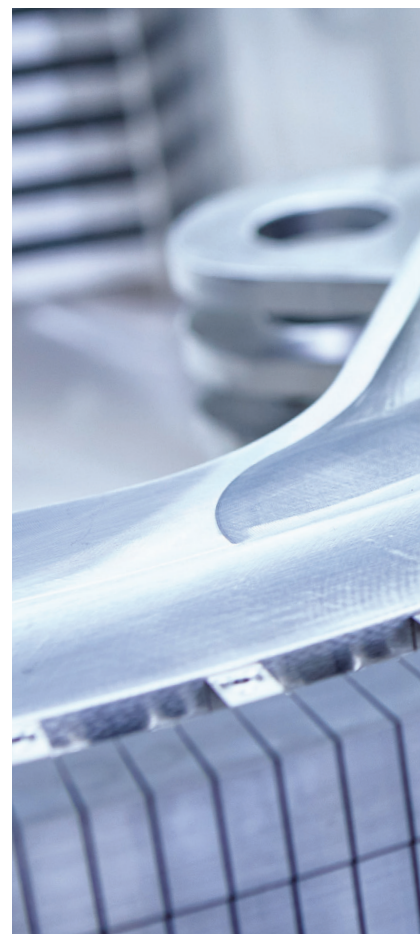


X-ray diffractometers set industry standard in determining battery lifetime

Bruker's D8 ENDEAVOR diffractometer sets the industry standard for high throughput X-ray diffraction in quality control in the production of cathode active materials and is supporting manufacturers in battery gigafactories across the globe.

This technology is paving the way towards research into new materials for the next generation of batteries. Because X-rays can pass through an electrochemical cell as a whole, the structural changes occurring in each constituent material can be analyzed simultaneously and without damage. The transport of Li-ions through the battery, and their structural intercalation during charge/discharge cycles, induces reactions and degradation that can be tracked in real time using high-energy diffraction by Bruker's D8 ADVANCE and D8 DISCOVER diffractometers. These structural changes are then correlated with battery performance and lifetime.

Fig. 7 2D representation of diffraction peaks which shows the changes happening inside the battery.



Supplying superconductors for sustainable energy

As science makes strides in fusion research, magnets are needed that can handle plasmas, novel materials and withstand the challenging conditions in the reactor vessels are needed. Magnetic confinement fusion holds promise as a clean, abundant, sustainable, efficient and safe energy source.

Large fusion projects that operate above 10 Tesla rely on Niobium-Tin (Nb_3Sn) superconductors to power such magnets. The Bruker Energy & Supercon Technologies (EST) Rod-Restack Process (RRP®) conductor portfolio is designed for fusion and high-energy physics applications that demand the highest magnetic fields. RRP® superconductors are used in high-energy physics accelerator magnets, such as the high-luminosity upgrade of the Large Hadron Collider at The European Organization for Nuclear Research (CERN), and for use in high-field NMR magnets.

Bruker EST and majority-owned RI Research Instruments GmbH have received multi-year contracts to supply key technology components for major fusion projects in Europe and Asia, including Fusion for Energy (F4E), the organization responsible for Europe's contribution to ITER – the world's most ambitious nuclear fusion project. The project brings scientists a step closer to the creation of a source of near-unlimited clean energy.

Future fusion power plants driven by magnetic confinement fusion could provide sustainable energy and replace carbon dioxide-emitting fossil fuel plants, as well as nuclear fission reactors that generate radioactive waste. Power stations fed by fusion reactors are set to meet the growing demand for energy at large production and population centers in a sustainable solution.

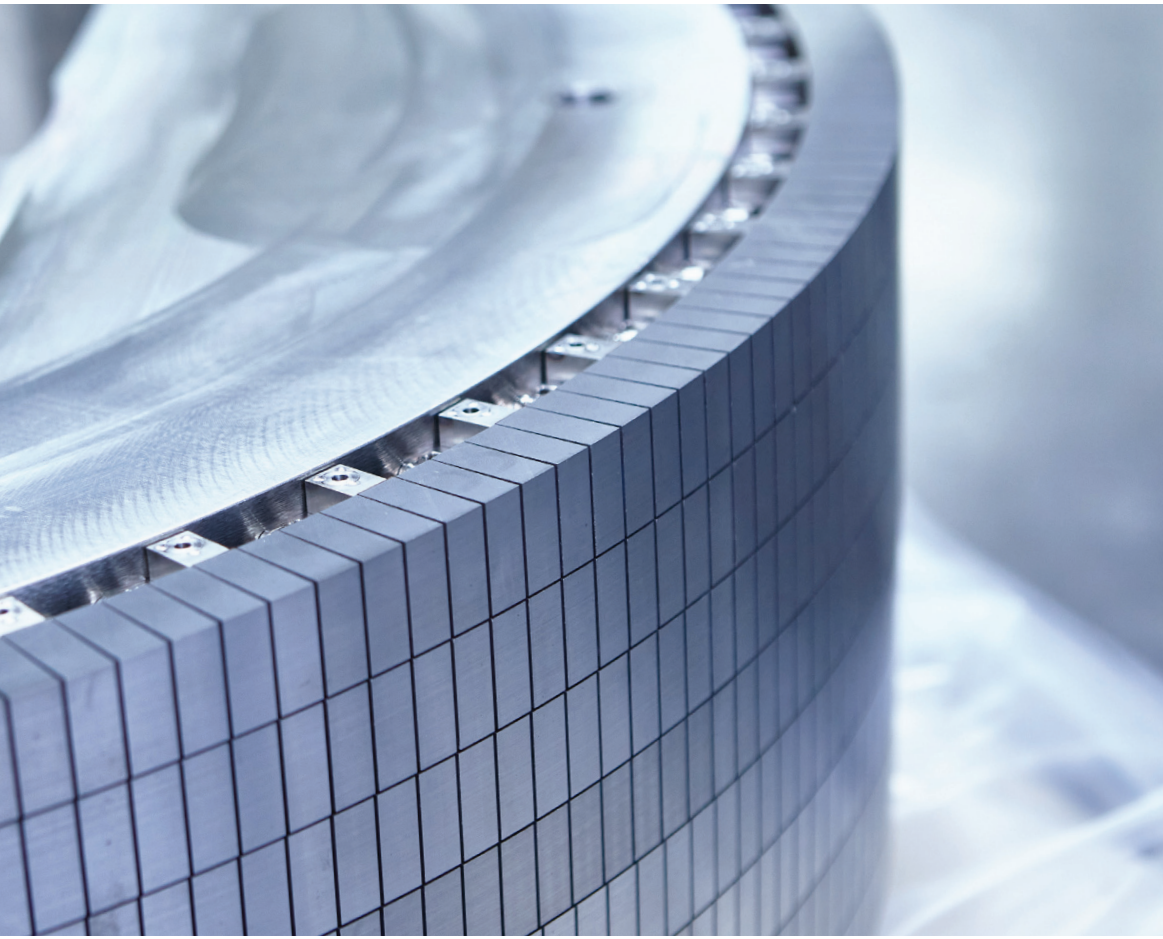


Fig. 8 Inner-Vertical Target prototype produced by Bruker's majority-owned RI Research Instruments, Germany.
©RI Instruments

BRUKER CORPORATION

ANNUAL REPORT

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

Form 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT of 1934**
For the fiscal year ended December 31, 2022

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from _____ to _____

Commission File Number 000-30833

BRUKER CORPORATION

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
Incorporation or organization)

40 Manning Road, Billerica, MA
(Address of principal executive offices)

04-3110160
(I.R.S. Employer
Identification No.)

01821
(Zip Code)

Registrant's telephone number, including area code:
(978) 663-3660

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock	BRKR	Nasdaq Global Select Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting stock held by non-affiliates of the registrant as of June 30, 2022 (the last business day of the registrant's most recently completed second fiscal quarter) was \$4,000,778,289 based on the reported last sale price on the Nasdaq Global Select Market. The number of shares of the registrant's common stock outstanding as of February 22, 2023 was 146,730,518.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the information required by Part III of this report (Items 10, 11, 12, 13 and 14) are incorporated by reference from the registrant's Definitive Proxy Statement on Schedule 14A for its 2023 Annual Meeting of Shareholders to be filed within 120 days of the close of the registrant's fiscal year.

BRUKER CORPORATION
ANNUAL REPORT ON FORM 10-K
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Any statements contained in this Annual Report on Form 10-K that are not statements of historical fact may be deemed to be forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, and Section 27A of the Securities Act of 1933, as amended. Without limiting the foregoing, the words “believe,” “anticipate,” “plan,” “expect,” “seek,” “may,” “will,” “intend,” “estimate,” “should,” and similar expressions are intended to identify forward-looking statements. Any forward-looking statements contained herein are based on current expectations but are subject to a number of risks and uncertainties. Forward-looking statements include, but are not limited to, statements regarding the impact of supply chain challenges on our business and operations, expectations regarding the global economy, inflation, the potential for recession and geopolitical tensions, our intentions regarding our intellectual property, the impact of government contracts and government regulation, our working capital requirements and sufficiency of cash, our competition, the seasonality of our business, the sufficiency of our facilities, our employee relations, the impact of legal or intellectual property proceedings, the impact of changes to tax and accounting rules and changes in law, our anticipated tax rate, our expectations regarding cash dividends, share repurchases, interest expense, interest rate swap agreements, expenses and capital expenditures, the impact of foreign currency exchange rates and changes in commodity prices, the impact of our restructuring initiatives, the impact of COVID-19, and our expectations regarding backlog and revenue. The factors that could cause actual future results to differ materially from current expectations include, but are not limited to, risks and uncertainties related to the length and severity of any recession and the impact of global economic conditions, the impact of supply chain challenges including inflationary pressures, the impact of geopolitical tensions and any sanctions, continued volatility in the capital markets, the impact of increased interest rates, the integration and assumption of liabilities of businesses we have acquired or may acquire in the future, our restructuring and cost-control initiatives, changing technologies, product development and market acceptance of our products, the cost and pricing of our products, manufacturing and outsourcing, competition, dependence on collaborative partners, key suppliers and third party distributors, capital spending and government funding policies, changes in governmental regulations, intellectual property rights, litigation, exposure to foreign currency fluctuations, our ability to service our debt obligations and fund our anticipated cash needs, the effect of a concentrated ownership of our common stock, loss of key personnel, payment of future dividends and other factors. Many of these factors are described in more detail in this Annual Report on Form 10-K under Item 1A. “Risk Factors” and from time to time in other filings we may make with the Securities and Exchange Commission (the “SEC”). While we may elect to update forward-looking statements in the future, we specifically disclaim any obligation to do so, even if our estimates change, and readers should not rely on those forward-looking statements as representing our views as of any date subsequent to the date of the filing of this report.

References to “we,” “us,” “our,” “management” or the “Company” refer to Bruker Corporation and, in some cases, its subsidiaries, as well as all predecessor entities.

Our principal executive offices are located at 40 Manning Road, Billerica, MA 01821, and our telephone number is (978) 663-3660. Information about Bruker Corporation is available at www.bruker.com. The information on our website is not incorporated by reference into and does not form a part of this report. All trademarks, trade names or copyrights referred to in this report are the property of their respective owners.

PART I

ITEM 1 *BUSINESS*

Our Business

We are a developer, manufacturer and distributor of high-performance scientific instruments and analytical and diagnostic solutions that enable our customers to explore life and materials at microscopic, molecular and cellular levels. Many of our products are used to detect, measure and visualize structural characteristics of chemical, biological and industrial material samples. Our products and solutions address the rapidly evolving needs of a diverse array of customers in life science research, pharmaceuticals, biotechnology, applied markets, cell biology, clinical research, microbiology, in-vitro diagnostics, nanotechnology and materials science research. Our technology platforms include magnetic resonance technologies, mass spectrometry technologies, gas and liquid chromatography, triple quadrupole mass spectrometry technologies, X-ray technologies, spark-optical emission spectroscopy, atomic force microscopy, stylus and optical metrology technology, fluorescence optical microscopy, and infrared and Raman molecular spectroscopy technologies. Our product portfolio also includes testing solutions used in microbiology and infectious disease diagnostics, including our MALDI Biotyper rapid pathogen identification platform and related test kits, DNA test strips and fluorescence-based polymerase chain reaction (PCR) technology for selected infectious disease applications. We develop, manufacture and distribute a range of field analytical systems for chemical, biological, radiological, nuclear and explosives, or CBRNE, detection. We also develop, manufacture and market low temperature superconducting materials and devices based primarily on metallic low temperature superconductors. Our corporate headquarters are located in Billerica, Massachusetts. We maintain major technical and manufacturing centers in Europe, North America and Southeast Asia, and have sales offices located throughout the world.

Business Segments

We have four reportable segments, Bruker Scientific Instruments (BSI) BioSpin, BSI CALID, BSI Nano and Bruker Energy & Supercon Technologies (BEST).

BSI BioSpin Segment

The BSI BioSpin Segment comprises the Bruker Magnetic Resonance, Applied Industrial and Clinical, Preclinical Imaging and Service and Lifecycle Support and Integrated Data Solution Divisions. BSI BioSpin designs, manufactures and distributes enabling life science tools based on magnetic resonance technology. Magnetic resonance is a natural phenomenon occurring when a molecule placed in a magnetic field emits a signature radio frequency. The signature radio frequency is characteristic of the particular molecule and provides a multitude of precise chemical and structural information. Depending on the intended application, we market and sell to our customers an NMR system or an EPR system (each as defined below). BSI BioSpin also manufactures and sells single and multiple modality systems using MRI, PET, SPECT, CT and MPI Technologies (each as defined below).

BSI BioSpin's products, which have particular application in structural proteomics, drug discovery, pharmaceutical and biotechnology research and production, and the food and materials science fields, provide customers with the ability to determine the structure, dynamics, and function of specific molecules, such as proteins, and thus allows them to understand fundamental biological processes including the formation and progression of diseases. Furthermore, BSI BioSpin's product enables the characterization of mixtures and also complex materials, rendering them high value-added tools for a variety of industrial applications.

BSI BioSpin also develops system agnostic software solutions. Software offerings include analytical instrumentation and data management support for life sciences and other industries to accelerate research, product development and process optimization.

The majority of BSI BioSpin's customers are academic and government research facilities. Other customers include pharmaceutical and biotechnology companies; chemical, food and beverage, clinical and polymer companies; and nonprofit laboratories.

During 2022, we continued to enable access to our high-performance GHz NMR technology. Four additional GHz NMR systems, representing the top end of our portfolio, were accepted by our customers (two 1.2 GHz and two 1.0 GHz). This was supported by the launch of a unique single-story 1.0 GHz system that significantly reduces footprint, weight, and ceiling height requirements and cuts liquid helium consumption by two-thirds. In the applied markets, we made significant progress with our new solutions that are built on the benchtop Fourier NMR platform, such as reaction monitoring in chemical and pharmaceutical research as well as GxP solutions for quality control in manufacturing. In our clinical segment, we launched an NMR assay for Research Use Only for molecular phenomics research on blood samples from 'Long COVID' patients. In addition, the introduction of the new MRI portfolio for preclinical imaging markets eliminates the need for liquid helium or nitrogen refills while providing high field sensitivity and resolution for advanced MRI and PET/MR research.

BSI BioSpin Segment's instruments are based on the following technology platforms:

- **NMR**—Nuclear magnetic resonance;
- **EPR**—Electron paramagnetic resonance;
- **MRI**—Magnetic resonance imaging;
- **MPI**—Magnetic particle imaging;
- **PET**—Positron emission tomography;
- **SPECT**—Single photon emission tomography; and
- **CT**—Computed tomography.

NMR is a qualitative and quantitative analytical technique that is used to determine the molecular structure and purity of a sample. Molecules are placed in a magnetic field and give off a radio frequency signature that is recorded by a sensitive detector. Analysis software helps to determine the molecular structure of the sample. The NMR technique is used in academia, by pharmaceutical, biotechnology, food and beverage and clinical companies, and by other industrial users in life science and material science research.

EPR is a process of absorption of microwave radiation by paramagnetic ions or molecules with at least one unpaired electron that spins in the presence of a static magnetic field. EPR detects unpaired electrons unambiguously, whereas other techniques can only provide indirect evidence of their presence. In addition, EPR can identify the paramagnetic species that are detected, which present information on the molecular structure near the unpaired electron and give insight into dynamic processes such as molecular motions or fluidity. Our EPR instruments are used for a wide range of applications, including advanced materials research, materials analysis and quality control.

MRI is a process of creating an image from the manipulation of hydrogen atoms in a magnetic field. In the presence of an external magnetic field, atoms will align with or against the external magnetic field. Application of a radio frequency causes the atoms to jump between high and low energy states. MRI and magnetic resonance spectroscopy, or MRS, include many methods including diffusion-weighted, perfusion-weighted, molecular imaging and contrast-enhance. MRI offers high resolution morphologic information, as well as functional, metabolic or molecular information. Customers use our MRI systems in pharmaceutical research, including metabolomics, to study a number of diseases, including diabetes, neurology, oncology and cardiovascular disorders.

MPI is a process of creating an image from magnetic particles administered to the body of an animal. The magnetic particles are manipulated in a combination of oscillating magnetic fields exhibiting a field free zone. The response of the particles allows a real time 3D data set acquisition of the whole body of an animal, showing the contrast agent distributing in and flowing through the body. This imaging modality is used to detect cardiovascular disorders.

PET is a process of creating an image from positrons after administration of a positron emitting radionuclide to the body of an animal. Annihilation of the positron produces two photons which show an angle of 180° between them, distinguishing these photons from photons originating from other sources. The PET tracer enriches in certain regions of interest within the body and gains molecular information from the animal *in vivo*. This has widespread applications, most importantly for oncology, inflammation, neurology and cardiovascular disorders, as well as metabolic disease, drug discovery and bone disease.

SPECT uses a contrast agent containing radionuclides which directly emit single photons. The contrast agent enriches in certain parts of the body of an animal and generates images of the radionuclide distribution in the body. SPECT has widespread application in animal investigations *in vivo*, most importantly in oncology, neurology and cardiovascular disorders.

CT is a technology based on X-rays which are used to generate a complete 3D data set. The most important applications are tissue sample analysis or non-invasive *in vivo* animal imaging. CT offers the highest spatial resolution of all preclinical imaging modalities and is especially useful to generate morphological information about the object or animal under investigation. CT is being used in a wide range of preclinical investigations in the fields of bone-orthopedics, cardiology, pulmonology, oncology and metabolism among others.

The BSI BioSpin Segment also offers a range of services, product lifecycle support, scientific software and workflow solutions to customers who use BSI BioSpin products.

BSI CALID Segment

The BSI CALID Segment comprises the Bruker Life Sciences Mass Spectrometry, Bruker Microbiology and Diagnostics and Bruker Optics Divisions.

The Bruker Life Sciences Mass Spectrometry primarily designs, manufactures and distributes life science mass spectrometry, or MS, instruments that can be integrated and used along with sample preparation or chromatography instruments to design an analytical workflow and mass spectrometry-based solutions including informatics software. Bruker Life Science Mass Spectrometry products are used in research, pharmaceutical and biotechnology development.

Mass spectrometers are sophisticated devices that measure the mass or weight of a molecule and can provide accurate information on the identity, quantity and primary structure of the molecule. Mass spectrometry-based solutions often combine advanced mass spectrometry instrumentation, automated sampling and sample preparation robots, reagent kits and other disposable products used in conducting tests, or assays, and bioinformatics software. We offer mass spectrometry systems and integrated solutions for applications in multiple existing and emerging life science markets and chemical and applied markets, including expression proteomics, clinical proteomics research, metabolic and peptide, lipid or glycan biomarker profiling, drug discovery and development, molecular diagnostics research and molecular and systems biology, as well as basic molecular medicine research.

The Bruker Microbiology and Diagnostics Division develops, manufactures and distributes innovative solutions for microbial identification, antibiotic resistance and susceptibility testing, polymerase chain reaction (PCR) based molecular diagnostic solutions for culture-free infectious disease diagnostics, as well as monoclonal antibodies and recombinant proteins as raw materials for diagnostic assays. Bruker Microbiology and Diagnostics solutions are used primarily in the human and veterinary clinical diagnostic, food microbiology and pharma microbiology settings.

Our MALDI Biotyper mass spectrometry solution and test kits, DNA test strips and fluorescence-based PCR technologies are designed for in-vitro diagnostic (IVD) use in clinical microbiology markets in certain configurations and certain countries, where regulatory approvals have been achieved. In addition to culture-based microbial identification with the MALDI Biotyper platform, the Genotype and Fluorotype molecular diagnostics (MDx) kits enable a culture-free detection and analysis of microbes and viruses directly from patient samples with a special focus on tuberculosis, HIV viral load, viral hepatitis and sexually transmitted diseases.

Molecular Diagnostics utilize PCR assays and systems to provide diagnostic solutions for a number of different disease states, including Respiratory, Mycobacteria (including Tuberculosis), Virology, Safety of Immunocompromised patients, Sexually Transmitted Infections, Gastroenteric Diseases as well as other Microbiology tests. Depending on the assay being used, the technology enables users to ascertain basic identification of a certain infection, distinguish infections which can cause similar symptoms and detect specific microbial resistance, all from a single sample. The GenoType portfolio has been established for over 30 years and has been successful in mycobacteria and tuberculosis detection, differentiation, and identification of antibiotic resistance markers. The portfolio now includes FluoroType®, using fluorescence-based real-time PCR technology, and more recently we have also developed LiquidArray® assays based on melt curve analysis for optimized asymmetrical PCR technology. LiquidArray® uses light-on-off probes, providing a powerful technology to identify a broad number of indicators for different infections or resistance markers from a single sample, providing greater depth of information. We are applying this approach to a new portfolio of syndromic panels for the diagnostics of sexually transmitted diseases and gastro-intestinal diseases. As a producer of extraction chemistry and instrumentation alongside integrated thermocyclers, software and a range of assays, Bruker brings complete diagnostic solutions to the Molecular Diagnostics market.

The Bruker Optics Division primarily designs, manufactures and distributes research, analytical and process analysis instruments and solutions based on infrared and Raman molecular spectroscopy and imaging technologies. These products are utilized in industry, government and academia for a wide range of applications and solutions for life science, pharmaceutical, food and agricultural analysis, quality control and process analysis applications. Infrared and Raman spectroscopy are widely used in both research and industry as simple, rapid, nondestructive and reliable techniques for applications ranging from basic sample identification and quality control to advanced research and also in remote sensing setups for environmental control. The Bruker Optics Division also utilizes Fourier transform and dispersive Raman measurement techniques on an extensive range of laboratory and process spectrometers. The Bruker Optics Division's products are complemented by a wide range of sampling accessories and techniques, which include, among others, microanalysis and high-throughput screening to help users find suitable solutions to analyze their samples effectively.

Customers of our BSI CALID Segment include pharmaceutical, biotechnology and diagnostics companies, contract research organizations, academic institutions, medical schools, nonprofit or for-profit forensic laboratories, agriculture, food and beverage safety, environmental and clinical microbiology laboratories, hospitals and government departments and agencies.

During 2022, we launched a number of new mass spectrometry-based solutions and additional workflows, including the timsTOF HT (High-Throughput) mass spectrometer enabling researchers to analyze proteins within high sensitivity and improved linear dynamic range important for plasma proteomics applications, and microGRID capability for the timsTOF Flex MALDI and MALDI-2 platforms allowing 5µm spatial resolution for tissue imaging. In tissue, protein analysis using MALDI Imaging applications were enhanced by the launch of the MALDI Hi-Plex Immunohistochemistry (IHC) labels that can potentially allow for multiplexing hundreds of proteins in a single MALDI-TOF analysis. The photocleavable mass tag approach used in the HiPlex IHC technique are uniquely formulated for high-sensitivity MALDI mass spectrometry analysis. In 2022, the BSI CALID Segment acquired Prolab AG, a Swiss-based, microfluidics components manufacturer whose components are an integral part of the nanoElute nanoflow LC system and PepSep, a nanocolumns manufacturer to augment the proteomics workflow for the timsTOF platform. Since its launch in 2016, the timsTOF has evolved into five variants, namely the Pro2, the HT, the SCP, the Flex and Flex MALDI-2 platforms which showcases the power of trapped ion mobility for life sciences applications such as multiomics and tissue imaging. In our microbiology and molecular diagnostics markets, we introduced the MALDI Biotyper Sirius broadly into the market. In our molecular diagnostics portfolio we launched two assays in the field of respiratory disease testing, primarily covering SARS-CoV 2 testing for the diagnosis of COVID-19 infection. The Fluorotyper-SARS-CoV 2 plus kit allows for a real-time PCR detection of the SARS-CoV 2 virus. It detects two viral genes in parallel as a mechanism for high sensitivity. The additional FluoroType® SARS-CoV-2/Flu/RSV assay is a multiplex real-time PCR kit that detects four viruses of clinical significance causing respiratory disease during the winter season: SARS-CoV 2, influenza A, influenza B and respiratory syncytial virus (RSV). During 2020, the Bruker Optics division launched LUMOS II, a fully automated stand-alone FTIR imaging microscope. LUMOS II provides ultrafast FTIR imaging capabilities based on modern focal plane array (FPA) detector technology. The novel LUMOS II is designed to identify particles, to determine coatings and contamination, and to reveal the polymeric composition of plastics.

The BSI CALID Segment's instruments are based on the following technology platforms:

- **MALDI-TOF**—Matrix-assisted laser desorption ionization time-of-flight mass spectrometry, including tandem time-of-flight systems (MALDI-TOF);
- **ESI-TOF**—Electrospray ionization time-of-flight spectrometry, including trapped ion mobility (TIMS) based on ESI-quadrupole-TOF mass spectrometry (timsTOF);
- **MRMS**—Magnetic resonance mass spectrometry, including hybrid systems with a quadrupole front end (Q-q-MRMS);
- **ITMS**—Ion trap mass spectrometry;
- **GC-MS**—Gas chromatography-mass spectrometry systems utilizing triple-quadrupole time-of-flight mass spectrometry;
- **LC-MS**—Liquid chromatography-mass spectrometry systems utilizing triple-quadrupole time-of flight mass spectrometry;
- **FT-IR**—Fourier transform-infrared spectroscopy;
- **NIR**—Near-infrared spectroscopy;
- **PCR**—Polymerase chain reaction; and
- **Raman**—Raman spectroscopy.

MALDI-TOF mass spectrometers utilize an ionization process to analyze solid samples using a laser that combines high sample throughput with high mass range and sensitivity. Our MALDI-TOF mass spectrometers are particularly useful for applications in clinical diagnostics, environmental and taxonomical research and food processing and quality control. Specific applications include: oligonucleotide and synthetic polymer analysis; protein identification and quantification; peptide de novo sequencing; determination of post-translational modifications of proteins; interaction proteomics and protein function analysis; drug discovery and development; and fast body fluid and tissue peptide or protein biomarker detection. MALDI mass spectrometry allows users to classify and identify microorganisms quickly and reliably with minimal sample preparation efforts and life cycle costs. Our MALDI Biotyper solution, which serves the clinical microbiology market, enables identification, taxonomical classification or dereplication of microorganisms like bacteria, yeasts and fungi.

ESI-TOF mass spectrometers utilize an electrospray ionization process to analyze liquid samples. This ionization process, which does not dissociate the molecules, allows for rapid data acquisition and analysis of large biological molecules. ESI-TOF mass spectrometers are particularly useful for: identification, protein analysis and functional complex analysis in proteomics and protein function; molecular identification in metabolomics, natural product and drug metabolite analysis; combinatorial chemistry high throughput screening; and fast liquid chromatography mass spectrometry, or liquid chromatography mass spectrometry (LC-MS), in drug discovery and development.

MRMS systems utilize high-field superconducting magnets to offer the highest resolution, selectivity, and mass accuracy currently achievable in mass spectrometry. Our systems based on this technology often eliminate the need for time-consuming

separation techniques in complex mixture analyses. In addition, our systems can fragment molecular ions to perform exact mass analysis on all fragments to determine molecular structure. MRMS systems are particularly useful for: the study of the structure and function of biomolecules, including proteins, DNA and natural products; complex mixture analysis including body fluids or combinatorial libraries; high-throughput proteomics and metabolomics; and top-down proteomics of intact proteins without the need for enzymatic digestion of the proteins prior to analysis. We offer next-generation hybrid MRMS systems that combine a traditional external quadrupole mass selector and hexapole collision cell with a high-performance MRMS for further ion dissociation, top-down proteomics tools and ultra-high resolution detection.

ITMS systems collect all ions simultaneously, which improves sensitivity relative to previous quadrupole mass spectrometers. Ion trap mass spectrometers are particularly useful for sequencing and identification based on peptide structural analysis, quantitative liquid chromatography mass spectrometry, identification of combinatorial libraries and generally enhancing the speed and efficiency of the drug discovery and development process.

GC-MS systems combine the features of gas chromatography and mass spectrometry to identify different substances within a test sample. The two components, used together, allow for a finer degree of substance identification than either system when used separately. The result is a quantitative analysis of the components and the mass spectrum of each component. Our GC-MS systems are available in triple quadrupole configurations and can be configured with a variety of options to suit a range of applications. Our GC-MS systems have applications in food and product safety, forensics, clinical and toxicology testing and environmental, pharmaceutical and chemical analysis.

LC-MS systems combine the separation features of liquid chromatography with the molecular identification features of mass spectrometry to separate, identify and quantify different substances within a test sample. As a complementary technique to GC-MS, which analyzes volatile compounds, LC-MS can be used to analyze a wide range of non-volatile compounds in complex samples. Our LC-MS systems are available in a wide range of configurations to suit a user's specific needs. Although primarily used for life science applications, our LC-MS systems also have applications in food and product safety, forensics and clinical and toxicology testing, as well as environmental, pharmaceutical and chemical analysis.

FT-IR spectrometers utilize the mid- and far-infrared regions of the electromagnetic spectrum. Our FT-IR systems are commonly used for various quality control and materials research applications.

NIR spectrometers utilize the near-infrared region of the electromagnetic spectrum. Our NIR instruments are primarily used for quality and process control applications in the pharmaceutical, food and agriculture and chemical industries. The pharmaceutical industry is the leading user of NIR instruments, and applications include quality control, research and development and process analytical technology. The food and agricultural industry is the second largest user of NIR instrumentation, with an increasing demand for food, feed and beverage quality control.

PCR the innovative **LiquidArray**[®] technology optimizes asymmetrical multiplex PCR for creating excess single-stranded amplicons with detection by Lights-On/-Off probes that contain a quencher (Lights-Off) or both fluorophore and quencher (Lights-On). During melting curve analysis, Lights-On/-Off probes detach from the amplicon at specific temperatures and as fluorescence is either emitted or suppressed, specific fluorescence signatures are generated by the unique **FluoroCycler**^{®XT} thermocycler for the **LiquidArray**[®] multiplex PCR technology. The **LiquidArray**[®] technology supports multiplexed assays where a large number of targets is analyzed simultaneously from single samples. For example, the **LiquidArray**[®]-powered, WHO-endorsed **FluoroType**^{®MTDBR VER 2.0} assay detects more than 500 genotypes by the combined analysis of up to 45 different mutations in mycobacteria.

Raman spectroscopy provides information on molecular structure. The mechanism of Raman scattering is different from that of infrared absorption, in that Raman and IR spectra provide complementary information. Raman is useful for the identification of both organic and inorganic compounds and functional groups. It is a nondestructive technique and can be used for the analysis of both liquids and solids. Raman is well suited for use in the polymer and pharmaceutical industries, and has applications in the metals, electronics and semiconductors industries. The technique also has applications in life sciences, forensics and artwork authentication.

Additionally, the Bruker Detection product line offers a wide range of portable analytical and bioanalytical detection systems and related products for CBRNE detection. Our customers use these devices for nuclear, biological agent and chemical agent defense applications, anti-terrorism, law enforcement and process and facilities monitoring. Our CBRNE detection products use many of the same technology platforms as our life science products, as well as additional technologies, including infrared stand-off detection and ion mobility spectrometry, for handheld chemical detectors. We also provide integrated, comprehensive detection suites that include our multiple detection systems, consumables, training and simulators.

BSI Nano Segment

The BSI Nano Segment comprises the Bruker AXS, Bruker Nano Analytics, Bruker Nano Surfaces and Metrology divisions, Consolidated Fluorescence Microscopy, Canopy Biosciences and Acuity Business Units. The Bruker AXS Division designs, manufactures and distributes advanced X-ray instruments that use electromagnetic radiation with extremely short wavelengths to

determine the characteristics of matter and the three-dimensional structure of molecules. This includes a product portfolio of instruments based on X-ray fluorescence spectroscopy (XRF), X-ray diffraction (XRD) and X-ray micro computed tomography (μ CT), or X-ray microscopy, as well as spark optical emission spectroscopy systems (S-OES) used to analyze the concentration of elements in metallic samples.

The Bruker Nano Analytics Division manufactures and markets analytical tools for electron microscopes, including energy-dispersive X-ray spectrometers (EDS), electron backscatter diffraction systems (EBSD) and μ CT accessories, as well as mobile and bench top micro X-ray fluorescence (μ XRF), total reflection X-ray fluorescence spectrometers (TXRF) and handheld, portable and mobile X-ray fluorescence (HMP-XRF) spectrometry instruments.

The Bruker Nano Surfaces and Metrology Division's products include atomic force microscopy instrumentation (AFM). Such instruments provide atomic or near atomic resolution of surface topography and nanoscale, mechanical, electrical and chemical information using nano scale probes. The Bruker Nano Surfaces and Metrology Division also provides non-contact nanometer resolution solution topography through white light interferometry and stylus profilometry. In addition, the division manufactures and markets automated X-ray metrology, automated AFM defect-detection and photomask repair and cleaning equipment for semiconductor process control.

The Consolidated Fluorescence Microscopy Business Unit provides advanced optical fluorescence microscopy instruments with multi-photon, multipoint scanning confocal, miniature head-mount, 3D super-resolution, light-sheet modalities for studies in life science applications.

The Canopy Division provides products and services to support the multi-omics needs of researchers in translational research, drug and biomarker discovery.

Customers of our BSI Nano Segment include academic institutions, governmental customers, nanotechnology companies, semiconductor companies, raw material manufacturers, industrial companies, biotechnology and pharmaceutical companies and other businesses involved in materials analysis.

During 2022, we launched several new products including Tribolab HD, InfiniteFocus G6, CellHesion 300, IconIR 300, NanoMET II, fp-III Depo, Rhazer-III HSPT, Skyscan 1272, Quantax Gen 7, Cellscape and Investigator+. We acquired Inscopix, Inc., a neuroscience pioneer and market leader of miniaturized microscopes and Neurescence Inc., an innovative provider of ultralight fiber-bundle MultiscopesTM for simultaneous multi-region, optical functional neuroimaging.

The BSI Nano Segment systems are based on the following technology platforms:

- **XRD**—Polycrystalline X-ray diffraction, often referred to as X-ray diffraction;
- **XRF**—X-ray fluorescence, also called X-ray spectrometry, including handheld XRF systems;
- **SC-XRD**—Single crystal X-ray diffraction, often referred to as X-ray crystallography;
- **μ CT**—X-ray micro computed tomography, X-ray microscopy;
- **EDS**—Energy dispersive X-ray spectroscopy on electron microscopes;
- **EBSD**—Electron backscatter diffraction on electron microscopes;
- **S-OES**—Spark optical emission spectroscopy;
- **CS/ONH**—Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen in solids;
- **AFM**—Atomic force microscopy;
- **FM**—Fluorescence microscopy;
- **SOM**—Stylus and optical metrology;
- **TMT**—Tribology and mechanical test systems for analysis of friction and wear;
- **NanoIR**—Nanoscale infrared spectroscopy;
- **Alicona**—Focus variation optical technology for non-contact dimensional metrology; and
- **Canopy**—Multiplexed fluorescence-based single cell imaging for suspended cells and tissues as well as multi-omics sample characterization.

XRD systems investigate polycrystalline samples or thin films with single wavelength X-rays. The atoms in the polycrystalline sample scatter the X-rays to create a unique diffraction pattern recorded by a detector. Computer software processes the pattern and produces a variety of information, including stress, texture, qualitative and quantitative phase composition, crystallite size, percent

crystallinity and layer thickness, composition, defects and density of thin films and semiconductor material. Our XRD systems contribute to a reduction in the development cycles for new products in the catalyst, polymer, electronic, optical material and semiconductor industries. Customers also use our XRD systems in academic and government research, as well as in a variety of other fields, including forensics, art and archaeology.

XRF systems determine the elemental composition of a material and provide a full qualitative and quantitative analysis. Our XRF systems direct X-rays at a sample, and the atoms in the sample absorb the X-ray energy. The elements in the sample then emit X-rays that are characteristic for each element. The system collects the X-rays, and the software analyzes the resulting data to determine the elements that are present. Our XRF products provide automated solutions on a turn-key basis for industrial users that require automated, controlled production processes that reduce product and process cost, increase output and improve product quality. Our XRF products cover substantially all of the periodic table and can analyze solid, powder or liquid samples.

SC-XRD systems determine the three-dimensional structures of molecules in a chemical, mineral, or biological substance being analyzed. SC-XRD systems have the capability to determine structure in both small chemical molecules and larger biomolecules. SC-XRD systems direct an X-ray beam at a solid, single crystal sample. The atoms in the crystal sample scatter the X-rays to create a precise diffraction pattern recorded by an electronic detector. Software then reconstructs a model of the structure and provides the unique arrangement of the atoms in the sample. This information on the exact arrangement of atoms in the sample is a critical part of molecular analysis and can provide insight into a variety of areas, including how a protein functions or interacts with a second molecule. Our SC-XRD systems are designed for use in the life sciences industry, academic research and a variety of other applications.

μCT is X-ray imaging in 3D, by the same method used in hospital CT scans, but on a small scale with massively increased resolution. 3D microscopy allows users to image the internal structure of objects non-destructively on a very fine scale. Bruker μCT is available in a range of easy-to-use desktop instruments, which generate 3D images of the sample's morphology and internal microstructure with resolution down to the sub-micron level. Our μCT systems are used for numerous applications in materials research and in the life sciences industry.

EDS systems analyze the chemical composition of materials under investigation in electron microscopes by utilizing the fact that atoms of different chemical elements, when exposed to the high energy electron beam generated by the microscope, irradiate X-rays of different characteristic energy. The evaluation of the energy spectrum collected by our spectrometer allows the determination of the qualitative and quantitative chemical sample composition at the current beam position. EDS systems allow for simultaneous analysis of all elements in the periodic table, beginning with atomic number 4 (beryllium). Our EDS systems are used for a range of applications, including nanotechnology and advanced materials research, as well as materials analysis and quality control. Customers for EDS systems include industrial customers, academia and government research facilities.

EBSD systems are used to perform quantitative microstructure analysis of crystalline samples in electron microscopes. The microscope's electron beam strikes the tilted sample and diffracted electrons form a pattern on a fluorescent screen. This pattern is characteristic of the crystal structure and orientation of the sample region from which it was generated. It provides the absolute crystal orientation with sub-micron resolution. EBSD can be used to characterize materials with regard to crystal orientation, texture, stress, strain and grain size. EBSD also allows the identification of crystalline phases and their distribution and is applied to many industries such as metals processing, aerospace, automotive, microelectronics and earth sciences.

S-OES instruments are used for analyzing metals. S-OES covers a broad range of applications for metals analysis from pure metals trace analysis to high alloyed grades and allows for analysis of a complete range of relevant elements simultaneously. S-OES instruments pass an electric spark onto a sample, which burns the surface of the sample and causes atoms to jump to a higher orbit. Our detectors quantify the light emitted by these atoms and help our customers to determine the elemental composition of the material. This technique is widely used in production control laboratories of foundries and steel mills.

CS/ONH carrier gas systems incorporate a furnace and infrared or thermal conductivity detection to analyze inorganic materials for the determination of carbon, sulfur, nitrogen, oxygen and hydrogen. Combustion and inert gas fusion analyzers are used for applications in metal production and processing, chemicals, ceramics and cement, coal processing, oil refining and semiconductors.

AFM systems provide atomic or near-atomic resolution of material surface topography using a nano-scale probe that is brought into light contact with the sample being investigated. In addition to presenting a surface image, AFM can also provide quantitative nano-scale measurements of feature sizes, material properties, electrical information, chemical properties and other sample characteristics. Our AFM systems are used for applications in academic and governmental materials and biological research and semiconductor, data storage hard drive, LED, battery, solar cells, polymers, and pharmaceutical product development and manufacturing.

FM products use fluorescence microscopy to determine the structure and composition of life science samples. Our products include two-photon microscopes, multipoint scanning confocal microscopes, miniature head-mounted microscopes, super-resolution microscopes, light-sheet microscopes, laser illumination sources, photoactivation, photostimulation and photoablation accessories and synchronization and analysis software. Two-photon microscopes allow imaging deep into tissues and cells and are used widely in

neuroscience. Multipoint scanning confocal systems allow live cell imaging with rapid acquisition of images for structural and composition analysis. Miniature head-mount microscopes allow monitoring of animal brain activity during free-roaming, naturalistic behavior at cellular level. Super-resolution and single-molecule localization microscopy products allow imaging below the optical diffraction limit by an order of magnitude. Light-sheet based products allow fast 3D volume imaging with very low phototoxicity and photo-damage effects enabling live cell and large volume imaging.

SOM systems provide atomic or near-atomic two dimensional and three-dimensional surface resolution using white light interferometry, confocal optical and stylus profilometry methods. SOM profilers range from low-cost manual tools for single measurements to advanced, highly automated systems for production line quality assurance and quality control applications where the combination of throughput, repeatability and reproducibility is essential. SOM profilers support a range of applications in research, product development, tribology, quality control and failure analysis related to materials and machining in the automotive, orthopedic, ophthalmic, high brightness LED, semiconductor, data storage, optics and other markets.

TMT systems provide a platform for all types of common mechanical, friction, durability, scratch and indentation tests for a wide spectrum of materials. Tribology systems are utilized for both academic research of the fundamental material properties and industrial applications in the semiconductor, aerospace, petroleum, automotive and other industries.

NanoIR systems perform infrared (IR) spectroscopy at the nanoscale. Our systems use nanoprobe technology similar to what is used in our atomic force microscopes to deliver quantitative chemical information from the nanoscale to the sub-micron and macro scales. The NanoIR measurement gives the user varying physical and chemical properties with nanoscale spatial resolution in a diverse range of fields, including polymers, 2D materials, materials science, life science and the micro-electronics industry. Our systems allow nanoscale IR absorption spectroscopy with interpretable IR spectra that directly correlates to FTIR as well as the complementary technique of nanoscale s-SNOM. With our broadband sources, these systems allow broadband scientific spectroscopy.

Alicona systems combine the functionalities of a micro coordinate measurement machine (CMM) with those of a surface measurement system. These dimensional metrology systems are based on the pioneering development of optical Focus-Variation measurement algorithms and provide the noncontact measurement of form and roughness of complex, miniaturized geometries. These systems serve many quality assurance application areas requiring precision measurement and dimensional metrology, including aerospace, automotive, precision medical products, additive manufacturing, and micro precision manufacturing.

Canopy provides spatial profiling services and instruments which include both our CellScope instrument and ChipCytometry service for quantitative, high plex, targeted spatial proteomics in single cell and tissues. These technologies, along with Canopy's more basic IHC and FISH services, allow researchers to elucidate gene and protein expression in a spatial context, which is useful for deep biological insight into gene expression and for the development of biomarkers. Canopy also provides transcriptional profiling services covering a variety of assays, including RNASeq and qPCR. Our multi-omic services provide data elucidating gene expression, signaling pathways, and differential expression trends on customer provided biological samples. These services generally incorporate a data analysis service as well and can be utilized with multiple types of samples from very early discovery research through clinical trials.

BEST Segment

The BEST Segment designs, manufactures and distributes superconducting materials, primarily metallic low temperature superconductors, for use in magnetic resonance imaging, nuclear magnetic resonance, fusion energy research and other applications. Additionally, BEST develops, manufactures and markets sophisticated devices and complex tools based primarily on metallic low temperature superconductors that have applications in "big science" research, including radio frequency accelerator cavities and modules, power couplers and linear accelerators. BEST also manufactures and sells non-superconducting high technology tools, such as synchrotron and beamline instrumentation, principally to customers engaged in materials research and "big science" research projects.

Sales and Marketing

We maintain direct sales forces throughout North America, Europe, China, Japan, and elsewhere in the Asia Pacific region. We also utilize indirect sales channels to reach customers. We have various international distributors, independent sales representatives and various other representatives in parts of Asia, Latin America, Africa, the Middle East and Eastern Europe. These entities augment our direct sales force and provide coverage in areas where we do not have direct sales personnel. In addition, we have adopted a distribution business model in which we engage in strategic distribution alliances with other companies to address certain market segments. The sales cycle for our products is dependent on the size and complexity of the system and budgeting cycles of our customers. Our sales cycle is typically three to twenty-four months for academic and high-end research products and two weeks to six months for industrial products. The sales cycle of our low temperature superconducting materials is typically four to twelve months, with cycles of certain high-end materials exceeding one year. Sales of our high-end NMR and superconducting devices typically take more than one year and certain large, complex contracts can take more than two years to complete.

We have well-equipped applications and demonstration facilities and qualified application personnel who assist customers and provide product demonstrations in specific application areas. We maintain our primary demonstration facilities at our production facilities, as well as in other key market locations.

Seasonal Nature of Business

Historically, we have higher levels of revenue in the fourth quarter and lower levels of revenues in the first quarter of the year, which we believe is influenced by our customers' budgeting cycles.

Major Customers

We have a broad and diversified customer base and we do not depend on any single customer. No single customer accounted for more than 10% of revenue in any of the last three fiscal years or more than 10% of accounts receivable as of December 31, 2022 or 2021.

Competition

Our existing products and solutions and any products and solutions that we develop in the future may compete in multiple, highly competitive markets. In addition, there has been a trend towards consolidation in our industries and many of our competitors have substantially greater financial, technical and marketing resources than we do. Our competitors may succeed in developing and offering products that could render our products or those of our strategic partners obsolete or noncompetitive. Our competitors may also have cost and price advantages based upon the value of their currencies compared with the U.S. Dollar or Euro. In addition, many of these competitors have significantly more experience in the life sciences, chemical and materials markets. Our ability to compete successfully will depend on our ability to develop proprietary products that reach our target markets in a timely manner and are technologically superior to and/or less expensive, or more cost effective, than products marketed by our competitors. Current competitors or other companies may possess or develop technologies and products that are more effective than ours. Our technologies and products may be rendered obsolete or uneconomical by technological advances or by entirely different approaches developed by one or more of our competitors.

We also compete with companies that provide analytical or automation tools based on technologies other than those we offer. These technologies may prove to be more successful in meeting demands in the markets that our products and solutions are intended to serve. In addition, other companies may choose to enter our fields in the future. We believe that the principal competitive factors in our markets are technology-based applications expertise, product specifications, functionality, reliability, marketing expertise, distribution capability, proprietary patent portfolios and cost effectiveness.

BSI BioSpin Segment Competition

The BSI BioSpin Segment competes with companies that offer magnetic resonance spectrometers, mainly JEOL, QOne Instruments, Nanalysis and Oxford Instruments. In the field of preclinical imaging, BioSpin competes with PerkinElmer Inc., Mediso, Trifoil, MR Solutions and others.

BSI CALID Segment Competition

The BSI CALID Segment competes with a variety of companies that offer mass spectrometry-based and molecular spectrometry-based systems. BSI CALID's competitors in the life science markets and chemical and applied markets include Danaher, Agilent, GE-Healthcare, Waters, Thermo Fisher Scientific, Shimadzu, Hitachi and JEOL. In the microbiology market, CALID competes with Biomerieux. In molecular diagnostics, CALID competes with a number of companies offering products for infectious disease diagnostics. CALID also competes with a variety of companies that offer molecular spectrometry-based systems, including Thermo Fisher Scientific, PerkinElmer, Agilent, Foss, ABB Bomem, Buchi, Shimadzu, Horiba, Rigaku and Jasco. CALID's CBRNE detection customers are highly fragmented, and it competes with a number of companies in this area, of which the most significant competitor is Smiths Detection.

BSI Nano Segment Competition

The BSI Nano Segment competes with companies that offer analytical X-ray solutions, OES systems, AFM and SOM systems and optical fluorescence systems, primarily Rigaku, Oxford Instruments, Agilent, Thermo Fisher Scientific, Ametek's Spectro and Edax divisions, PANalytical, Park Systems, Olympus, Nikon, Zeiss and Danaher's Leica business.

BEST Segment Competition

BEST competes with Luvata, Western Superconducting Technologies Co., Ltd. (WST), and Jastec Co., Ltd. in low temperature superconducting materials. BEST further competes with Zanon, Mitsubishi Electric and AES in the development and supply of accelerator cavities, with Thales, Toshiba and CPI International in the development and supply of radio frequency couplers, with Mitsubishi Heavy Industries in the development and supply of superconducting accelerator modules and with AES and Thales for electron linear accelerators.

Manufacturing and Supplies

Several of our manufacturing facilities are certified under ISO 9001:2008 and ISO 13485, international quality standards. We manufacture and test our magnetic resonance products at our facilities in Faellanden, Switzerland; Wissembourg, France; and Karlsruhe, Germany. We manufacture and test our preclinical imaging products at our facilities in Ettlingen, Germany; Wissembourg, France; Kontich, Belgium; and Faellanden, Switzerland. We manufacture and test our mass spectrometry products at our facilities in Bremen, Germany. We principally manufacture and test our molecular spectroscopy products, including CBRNE detection products, at our facilities in Ettlingen, Germany. We manufacture and test our X-ray, OES and AFM products at our facilities in Penang, Malaysia; Karlsruhe, Germany; Berlin, Germany; Santa Barbara, California, U.S.A.; and Migdal HaEmek, Israel. We manufacture and test the majority of our energy and superconducting products at our facilities in Hanau, Germany; Bergisch Gladbach, Germany; Perth, Scotland; and Carteret, New Jersey, U.S.A. Manufacturing processes at our facilities in Europe, Israel and California, U.S.A. include all phases of manufacturing, such as machining, fabrication, subassembly, system assembly, and final testing. Our other facilities primarily perform high-level assembly, system integration and final testing. We typically manufacture critical components in-house to ensure key competence and outsource to third party manufacturers non-critical components.

We purchase materials and components from various suppliers that are either standard products or built to our specifications. We obtain some of the components included in our products from a limited group of suppliers or from a single-source supplier for items such as charge coupled device area detectors, X-ray tubes, robotics, infrared optics and others. BEST has an ongoing collaboration and a joint technology development agreement with Allegheny Technologies Incorporated to advance state-of-the-art niobium-based superconductors, including those used in MRI magnets for the medical industry, and preclinical MRI magnets used in the life-science tools industry.

Research and Development

We commit substantial capital and resources to internal and collaborative research and development projects in order to provide innovative products and solutions to our customers. We conduct research primarily to enhance system performance and improve the reliability of existing products, and to develop revolutionary new products and solutions. Our research and development efforts are conducted for the relevant products within each of the operating segments, as well as in collaboration with others on areas such as microfluidics, automation and workflow management software. We have been the recipient of government grants from Germany and the United States for various projects related to early-stage research and development. We have generally retained, at a minimum, non-exclusive rights to any items or enhancements we develop under these grants. The German government requires that we use and market technology developed under grants in order to retain our rights to the technology. We have also accepted some sponsored research contracts from private sources.

BSI BioSpin Segment Research and Development

The research and development performed in the BSI BioSpin Segment is primarily conducted at our facilities in Ettlingen, Germany; Faellanden, Switzerland and Wissembourg, France. The BSI BioSpin Segment maintains technical competencies in core magnetic resonance technologies and single- and multimodal imaging technologies and capabilities, including NMR, EPR, MRI, MPI, PET and CT. The most recent technological innovations included Bruker's ultra-high-field class in the NMR and MRI product lines and the benchtop Fourier NMR platform. As part of our continuous development of systems and software, we have achieved major milestones in 2022 to make NMR and MRI technologies accessible to more labs, such as reduced siting requirements.

BSI CALID Segment Research and Development

The research and development performed in the BSI CALID Segment is primarily conducted at our facilities in Bremen and Ettlingen, Germany; Faellanden, Switzerland and Wissembourg, France. The BSI CALID Segment maintains technical competencies in core mass spectrometry technologies and capabilities, including: MALDI, ESI and EI/CI ion source, TOF, TOF/TOF, ion traps, MRMS, quadrupole and IMS analyzers and bioinformatics. Recent projects include the innovative timsTOF mass spectrometer for separation and analysis of unresolved compounds and conformations. The BSI CALID Segment also maintains technical competencies in core vibrational spectroscopy technologies and capabilities, including FT-IR, NIR and Raman.

BSI Nano Segment Research and Development

The research and development performed in the BSI Nano Segment is primarily conducted at our facilities in Karlsruhe, Berlin and Leipzig, Germany; Penang, Malaysia; Madison, Wisconsin, Eden Prairie, Minnesota, San Jose and Santa Barbara, California, and St. Louis, Missouri, U.S.A. The BSI Nano Segment maintains technical competencies in core X-ray technologies and capabilities, including detectors used to sense X-ray and X-ray diffraction patterns, X-ray sources and optics that generate and focus the X-rays, robotics and sample handling equipment that holds and manipulates the experimental material, and software that generates the structural data. Recent projects include fluorescence microscopy with simultaneous, all-optical stimulation and imaging platforms for optogenetics neuroscience research and light sheet cell microscopy systems, which enable brain research and high-resolution live cell research. The BSI Nano Segment also has competencies in AFM technology, which involve sub-angstrom level position and motion control, as well as sub-pico newton force control. The BSI Nano Segment technologies also include 3D optical inference-based microscopy, stylus profilometry, tribology testing, nano-indentation, optical fluorescence two-photon microscopy, multipoint scanning microscopy, high-speed, 3D super-resolution fluorescence microscopy and spatial biology and single-cell targeted proteomics technologies. Recent innovations include elemental analyzer systems for advanced applications and research and simultaneous, all-optical stimulation and imaging platforms for neuroscience applications.

BEST Segment Research and Development

The research and development performed in the BEST Segment is primarily conducted at our facilities in Hanau and Bergisch Gladbach, Germany; and Carteret, New Jersey, U.S.A. BEST maintains technical competencies in the production and development of low and high temperature superconducting materials and devices.

Intellectual Property

Our intellectual property consists of patents, copyrights, trade secrets, know-how, and trademarks. Protection of our intellectual property is a strategic priority for our businesses because of the length of time and expense associated with bringing new products through the development process and to the marketplace. We have a substantial patent portfolio, and we intend to file additional patent applications as appropriate. We believe our owned and licensed patent portfolio provides us with a competitive advantage. This portfolio permits us to maintain access to a number of key technologies. We license our owned patent rights where appropriate. We intend to enforce our patent rights against infringers, if necessary. The patent positions of life sciences tools companies involve complex legal and factual questions. As a result, we cannot predict the enforceability of our patents with certainty. In addition, we are aware of the existence from time to time of patents in certain countries, which, if valid, could impair our ability to manufacture and sell products in these countries.

We also rely upon trade secrets, know-how, trademarks, copyright protection and licensing to develop and maintain our competitive position. We generally require the execution of confidentiality agreements by our employees, consultants, and other scientific advisors. These agreements provide that all confidential information made known during the course of a relationship with us will be held in confidence and used only for our benefit. In addition, these agreements provide that we own all inventions generated during the course of the relationship.

Government Contracts

We are a party to various government contracts. Under some of these government contracts, the government may receive license or similar rights to intellectual property developed under the contract. However, under government contracts we enter we generally receive at least non-exclusive rights to any items or technologies we develop. Although we transact business with various government agencies, we believe that no government contract is of such magnitude that a renegotiation of profits or termination of the contract or subcontracts at the election of the government would have a material adverse effect on our financial results.

Government Regulation

We are required to comply with federal, state, and local environmental protection regulations. We do not expect this compliance to have a significant impact on our capital spending, earnings or competitive position.

Our products are subject to the U.S. Food and Drug Administration's, or the FDA's, requirements for electronic radiation emitting products, which include requirements related to record-keeping and reporting; labeling; notification; product repairs, replacements and refunds; importation; and performance standards. For example, prior to introducing a product in the United States, our Bruker AXS subsidiary provides notice to the FDA in the form of a Radiation Safety Initial Product Abbreviated Report, which provides identification information and operating characteristics of the product. If the FDA finds that the report is complete, it provides approval in the form of what is known as an accession number. Bruker AXS may not market a product until it has received an accession number. In addition, Bruker AXS submits an annual report to the FDA that includes the radiation safety history of all products it sells in the United States. Bruker AXS is required to report to the FDA incidents of accidental exposure to radiation arising from the manufacture, testing, or use of any of its products. Bruker AXS also reports installations of its products to state government regulatory agencies responsible for the regulation of radiation emitting devices. For sales in Germany, Bruker AXS registers each system with the local authorities. In some countries where Bruker AXS sells systems, Bruker AXS uses the license we obtained from the federal authorities in Germany to assist it in obtaining a license from the country in which the sale occurs.

Our Bruker AXS subsidiary possesses low-level radiation materials licenses from the local radiation safety authority, Gewerbeaufsichtsamt Karlsruhe, for its facility in Karlsruhe, Germany; and from the local radiation safety authority, Kanagawa Prefecture, for its facility in Yokohama, Japan, as well as from various other countries in which it sells its products. Our Bruker Daltonics subsidiary possesses low-level radiation licenses for facilities in Billerica, Massachusetts and Leipzig, Germany. The U.S. Nuclear Regulatory Commission also has regulations concerning the exposure of our employees to radiation.

Certain of our clinical products are subject to regulation as medical devices in the United States by the FDA and by similar regulatory bodies in other countries where such products are sold. The regulatory requirements imposed by the FDA and other regulatory bodies govern a wide variety of product-related activities, from quality management, design and development to labeling, manufacturing, promotion, sales, and distribution. As such, we continually invest in our manufacturing infrastructure to gain and maintain certifications and registrations necessary for the relevant level of regulatory clearance. We also are required to maintain processes and systems for medical device product submissions. For example, our MALDI Biotyper CA system is subject to regulation by the FDA as a medical device and requires FDA premarket review and clearance via the 510(k) premarket notification process and our IVD-CE Certified MALDI BioTyper system is subject to regulation in the European Union under the provisions of Directive 98/79/EC. In addition, certain product changes, including changes to the product indications or label claims, could trigger the requirement for a new 510(k) or other FDA or foreign regulatory premarket submission. The process of obtaining marketing approval, authorization, or clearance from the FDA and comparable foreign regulatory authorities for new products, or for enhancements or modifications to existing products, could take a significant amount of time, require the expenditure of substantial financial and other resources, and require rigorous and expensive pre-clinical and clinical testing. Additionally, the FDA or comparable foreign regulatory authorities could impose limitations on the indications for use of our products. Should we pursue an FDA or comparable foreign regulatory authority clearance, authorization, or approval for a new device or device modification, we cannot be certain that we will receive required clearance, authorization, or approval on a timely basis or at all. The failure to receive clearance, authorization, or approval for significant new products or modifications to existing products on a timely basis or at all could have a material, adverse effect on our financial condition and results of operations.

Both before and after a medical device product is commercially released, we have ongoing responsibilities under FDA and foreign regulations. For example, we are required to comply with the FDA's Quality System Regulation, which sets forth the good manufacturing requirements for medical devices. These include requirements related to design controls, production and process controls, process validation, purchasing controls, supplier oversight, complaint handling and investigation, corrective and preventative actions, and record-keeping. In addition, the FDA's medical device reporting regulation requires us to provide information to the FDA whenever we become aware that there is evidence that reasonably suggests that a device may have caused or contributed to a death or serious injury or, that a malfunction occurred which would be likely to cause or contribute to a death or serious injury upon recurrence. The FDA and comparable foreign regulatory authorities also regulate the promotion and marketing of medical devices and require that manufacturers only make promotional claims or statements that are consistent with the indications and labeling cleared, authorized, or approved by the FDA or other regulatory authorities. The FDA and comparable foreign regulatory authorities may take enforcement action against us, should the FDA determine we have engaged in "off-label" promotion or other violative marketing activities.

The European Union Directive 98/97/EC (IVDD) was replaced by the Regulation (EU) 2017/746 of April 5, 2017 on in vitro diagnostic medical devices (IVDR). The IVDR became applicable in May 2022. The regime changes significantly with the IVDR. In comparison to the IVDD, the IVDR requires, among other things, more clinical evidence to demonstrate the claimed benefits and safety of the device in relation to its stated purpose, stricter classification and CE-marking requirements and ongoing post-market follow-up to ensure conformity. The IVDR also requires new databases to be set up to track which devices are CE marked and to register clinical studies and post-market monitoring. In addition, tracing is enhanced by a Unique Device Identification (UDI) System

and through requirements on other economic operators in the supply chain. Our products currently approved under the IVDD, and not already placed on the market or put into service, must be recertified under the IVDR.

Backlog

Our backlog consists of firm orders under non-cancelable purchase orders received from customers. Total remaining performance obligations as of December 31, 2022 and 2021 was approximately \$2,258.8 million and \$2,077.2 million, respectively. The increase in our backlog in 2022 when compared to 2021 is due to strengthening demand in our BSI order bookings as of December 31, 2022. We generally experience variable and fluctuating revenues in the first three quarters of the year, while our fourth quarter revenues have historically been stronger than the rest of the year. As a result, backlog on any particular date can be indicative of our short-term revenue performance but is not necessarily a reliable indicator of long-term revenue performance.

Human Capital

We are committed to enabling scientists to make breakthrough discoveries and develop new applications that improve the quality of human life. Our employees are a critical component of that mission. We endeavor to attract, develop and retain top talent by offering our employees a challenging but rewarding work experience, as well as competitive compensation and benefits. Further, we strive to create a work environment that promotes integrity, respect and trust among our employees.

As of December 31, 2022 and 2021, we had approximately 8,525 and 7,765 full-time employees worldwide, respectively. Of these employees, approximately 1,410 and 1,230 were located in the United States at December 31, 2022 and 2021, respectively. Our senior leadership team is 79% male and 21% female.

The table below provides our employees by functional area.

	Number of Employees	
	2022	2021
Production and distribution	3,990	3,690
Selling and marketing	2,070	1,900
General and administrative	985	885
Research and development	1,480	1,290
Total	8,525	7,765

Diversity, Talent Retention and Development

Bruker has initiatives and programs to attract, develop and retain our talent tailored to specific employee populations and geographies, including leadership development programs, technical training, and other skill-based training.

Several leadership development programs are in place for global groups and functions where competency-based performance assessments are completed annually to identify employees who qualify as high performers and high potentials for advancement into key leadership positions. These individuals are provided with additional skill, mentoring, and project opportunities to strengthen their capabilities for career advancement as future successors across the organization.

Bruker has created a tailor-made development program for talent providing them with an opportunity to develop their leadership skills over a period of 12 months by attending different modules, which are run in a hybrid format. Each participant is supported by a mentor during the program. The program builds on the cornerstones of the cultural journey program that was run in 2021 and 2022. The focus on our company culture continues through a network of Cultural Champions organized in working groups with a focus on creating an inclusive workplace, development, and communication.

In 2022, we initiated a pilot program for the use of a leading online learning platform for global deployment. This pilot program was successful and we have further expanded the platform in 2023. Among the platform developments, we created specific training paths to support technical skill development of users. These paths offer skills and development opportunities. Learning modules were also integrated into quarterly training sessions to facilitate learning and knowledge sharing among users.

We have an established global performance management process in which managers provide regular feedback and coaching to develop employees. Throughout the year, managers and employees engage in annual objective setting, mid-year reviews of performance as well as a year-end performance evaluation. We also have employee populations piloting the use of our Talent Management System to capture career development goals as well as learning paths, certifications achieved, languages spoken and mobility preferences to promote internal career opportunities.

Challenges to recruit in the highly competitive external market have increased our focus on employer branding initiatives to further improve our visibility and attractiveness for potential candidates.

Bruker is focused on promoting diversity across our organization. Our employees come from diverse backgrounds all over the world. We are united by a shared purpose—innovation with integrity. We hope that the work we do every day inspires and impacts global scientific research—and our diverse and dynamic team of people inspire each other to achieve their full potential. We build cross-functional teams to support collaboration and enable the creation of new ideas by actively identifying and recruiting talent with diverse professional experiences, skills and backgrounds including from diverse gender, racial and ethnic backgrounds.

One of these programs aimed to bring employees together across the organization to focus on diversity is Women@Bruker. This program was developed to offer mentorship opportunities and foster professional relationships for women at Bruker to support their development and advancement opportunities.

In the context of celebrating diversity, we actively participate in Girls' Day. Girls' Day is a nationwide orientation day in Germany for girls ages 10 and older, to support their career and educational orientation. The aim of the initiative is to establish a career and education choice free of gender stereotypes. On this day, participants throughout Germany learn about professions or fields of study in which the representation of women is less than 40 percent (e.g. representation in the natural sciences and technology). Often the participants have a chance to meet female role models in leadership positions in business and politics. In one of our segments, each year we host a group of young girls who meet our female employees who talk about their personal career path and journey to inspire the younger generation to pursue their career dreams.

Employee Health and Safety

Ensuring the safety and well-being of our employees is a top priority for Bruker. In response to the COVID-19 pandemic, we implemented additional health and safety protocols at our sites including enhanced cleaning procedures and social distancing requirements. We implemented a remote work policy for all employees whose job allowed them to do so. Additional personal protective equipment (PPE) was provided to employees, and work procedures were modified to reduce risk. Also, we engaged with a vendor to offer at home COVID-19 testing kits for those employees who needed to travel to customer sites as well as implemented an enhanced Employee Assistance Program to promote mental and physical wellness. We continue to refine these measures as the conditions of the COVID-19 pandemic evolve and information about the virus develops.

In the United States, our Wellness Program is established and continues to be enhanced. In 2022, we introduced our Wellness Program to Bruker employees and the program has grown significantly in response to employee interest and impact. The program currently includes regular communication to promote Bruker Health and Wellbeing initiatives, wellness challenges and specialized webinars to provide education designed to improve Bruker employee physical, emotional, social, and financial health.

Our sites around the globe are mindful that the safety and well-being of our employees is a top priority. One site recognized an increase in muscle pain with production teams and a successful activity was incorporated into each production shift encouraging employees to stretch and do light exercise to prepare them for their work thus reducing the likelihood of strain.

A program called “Caught Doing the Right Thing” is a Safety and Quality recognition program for hourly employees. The focus of the program is to recognize employees who demonstrate the correct behaviors on safety and quality. This has encouraged active engagement from employees to take the safety and quality of themselves and their teams as a personal initiative.

Available Information

We maintain a website at www.bruker.com. We make available on our website documents describing our corporate governance and our Code of Conduct. We are not including the information contained on our website as a part of, or incorporating it by reference into, this Annual Report on Form 10-K. We make available free of charge through our website our annual reports on Form 10-K, our proxy statements, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to these reports filed with or furnished to the SEC pursuant to Sections 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after they are electronically filed with or furnished to the SEC. The SEC also maintains an internet site that contains reports, proxy and information statements and other information regarding our filings at www.sec.gov.

ITEM 1A RISK FACTORS

The following risk factors should be considered in conjunction with the other information included in this Annual Report on Form 10-K. This report may include forward-looking statements that involve risks and uncertainties. In addition to those risk factors discussed elsewhere in this report, we identify the following risk factors, which could affect our actual results and cause actual results to differ materially from those in the forward-looking statements.

Risk Factor Summary

Our business is subject to numerous risks and uncertainties, including those described in Item 1A “Risk Factors.” These risks include, but are not limited to, the following:

- Supply chain issues, including increasing demand for certain components used in our products and production delays, has and could continue to result in significant additional costs and manufacturing inefficiencies, which could adversely impact our revenue, increase our manufacturing costs and have a material adverse effect on our operating results.
- Unfavorable economic or political conditions in the countries in which we operate may have an adverse impact on our business results or financial condition;
- Adverse global economic conditions, geopolitical tensions and other conditions that impact our increasingly global operations could have a negative effect on our business, results of operations and financial condition and liquidity.
- Our financial condition and results of operations for fiscal 2023 may continue to be adversely affected by the COVID-19 pandemic;
- We derive a significant portion of our revenue from international sales and are subject to the operational risks of doing business in foreign countries;
- If our products fail to achieve and sustain sufficient market acceptance across their broad intended range of applications, we will not generate expected revenue;
- Our products compete in markets that are subject to rapid technological change, and one or more of the technologies underlying our products could be made obsolete by new technology;
- If investment in life and material science research spending declines, our ability to generate revenue may suffer;
- Any reduction in the capital resources or government funding of our customers could reduce our sales and impede our ability to generate revenue;
- Disruptions at any of our manufacturing facilities could adversely affect our business;
- In addition to the risks applicable to our life science and materials analysis products, our CBRNE detection products are subject to a number of additional risks, including lengthy product development and contract negotiation periods and certain risks inherent in long-term government contracts;
- Our debt may adversely affect our cash flow and may restrict our investment opportunities or limit our activities;
- If we lose our strategic partners, our marketing and sales efforts could be impaired;
- We face risks related to sales through distributors and other third parties that we do not control, which could harm our business;
- Our operations are dependent upon a limited number of suppliers and contract manufacturers;
- Supply shortages and increasing prices of raw materials could adversely affect the gross profit;
- If we are unable to effectively protect our intellectual property, third parties may use our technology, which would impair our ability to compete in our markets;
- We may be involved in lawsuits to protect or enforce our patents that are brought by us which could be expensive and time consuming and, if determined adversely, could adversely affect our patent position;
- Our manufacture and sale of products could lead to product liability claims for which we could have substantial liability;
- We are subject to environmental laws and regulations, which may impose significant compliance or other costs on us; and

- We operate as an entrepreneurial, decentralized company, which presents both benefits and certain risks. In particular, significant growth in a decentralized operating model may put strain on certain business group resources and our corporate functions, which could materially and adversely affect our business, financial condition and results of operations.

Risks Related to Our Business and Industry

Supply chain issues, including increasing demand for certain components used in our products and production delays, has and could continue result in significant additional costs and manufacturing inefficiencies, which could adversely impact our revenue, increase our manufacturing costs and have a material adverse effect on our operating results.

We have experienced supply chain interruptions as a result of the COVID-19 pandemic, general global economic conditions, the war in Ukraine, ongoing conflicts between the United States and China, geopolitical tensions, a tight labor market and other factors, including natural events and disasters. Various factors, including increased demand for certain components and production delays, are contributing to shortages of certain components used in our products including microelectronic components and increased difficulties in our ability to obtain a consistent supply of materials at stable pricing levels. Supply shortages and longer lead times for components used in our products, including limited source components, have and can result in significant additional costs and inefficiencies in manufacturing. A shortage of key components has in the past and may in the future cause a significant disruption to our production activities, which could have a substantial adverse effect on our financial condition or results of operations. If we are unsuccessful in resolving any such component shortages in a timely manner, we could experience a significant adverse impact on the timing of our revenue, a possible loss of revenue, or an increase in manufacturing costs, any of which could have a material adverse impact on our operating results.

Unfavorable economic or political conditions in the countries in which we operate may have an adverse impact on our business results or financial condition.

Our businesses and results of operations are affected by international, national and regional economic and political conditions. Our businesses or financial results may be adversely impacted by unfavorable changes in economic or political conditions in the countries and markets in which we operate, including, among others, adverse changes in interest rates or tax rates, volatility in financial and commodity markets, contraction in the availability of credit in the marketplace, geopolitical tensions and changes in capital spending patterns.

Our revenue from U.S. operations represented approximately 28% and 25% of total consolidated revenue for fiscal 2022 and 2021, respectively. Our revenue from operations in Europe represented approximately 33% and 38% of total consolidated revenue for both fiscal years 2022 and 2021. Our revenue from operations in the Asia Pacific region represented approximately 32% and 30% of total consolidated revenue in each of the corresponding periods. Economic factors that could adversely influence demand for our products include the impact of geopolitical tensions and any related sanctions implemented, continued uncertainty about global economic conditions, including as a result of the pandemic, leading to ongoing reductions in investment, changes in government spending levels and/or priorities, the size and availability of government budgets, customers' and suppliers' access to credit and other macroeconomic factors affecting government, academic or industrial spending behavior. Slower economic growth or a deterioration in economic conditions could result in a decrease in government funding for scientific research, a delay in orders from current or potential customers or a reduction in purchases of our products.

We cannot predict how changes in economic conditions or political instability will affect our customers and suppliers or how any negative impact on our customers and suppliers might adversely impact our business results or financial condition.

Adverse global economic conditions, geopolitical tensions and other conditions that impact our increasingly global operations could have a negative effect on our business, results of operations and financial condition and liquidity.

As a global company, our performance is affected by global economic conditions as well as geopolitical tensions and other conditions with global reach. In recent years, concerns about the global economic outlook have adversely affected market and business conditions in general. Macroeconomic weakness and uncertainty make it more difficult for us to manage our operations and accurately forecast revenue, gross margin and expenses. Geopolitical tensions, such as Russia's incursion into Ukraine, ongoing conflicts between the United States and China, tariff and trade policy changes, economic sanctions, increasing potential of conflict involving countries in Asia that are critical to our supply chain operations, such as Taiwan and China, have resulted in increasing global tensions and create uncertainty for global commerce. As a result of economic sanctions on Russia we have faced disruptions to our operations within Russia, among other challenges. Sustained or worsening of global economic conditions and increasing geopolitical tensions may increase our cost of doing business, materially disrupt our supply chain operations, cause our customers to reduce or delay

spending and intensify pricing pressures. We have recently experienced an increase in inflationary pressures in many of the jurisdictions in which we operate. We have and may continue to offset the effect of these inflationary pressures by increasing the prices of our products to customers. In 2022, however, our price increases did not fully offset the effects of inflation costs and may not offset any effects experienced during 2023. Any or all of these factors could negatively affect demand for our products and our business, financial condition and result of operations.

Our financial condition and results of operations for fiscal 2023 may continue to be adversely affected by the COVID-19 pandemic.

The impact of the worldwide COVID-19 pandemic has been and in certain geographies may continue to be extensive. The pandemic has resulted in and will likely continue to result to varying degrees in disruptions to the global economy, as well as businesses, supply chains and capital markets around the world. We are continuing to monitor and assess the ongoing effects of the COVID-19 pandemic on our operations in 2023.

Impacts to our business have included disruptions or restrictions on our employees' and customers' ability to travel, in particular to and from parts of Asia, and delays in product installations or shipments to and from affected countries. Certain Asia Pacific geographies where we operate are continuing to experience significant disruptions relating to COVID-19. Much of the commercial activity in sales and marketing, and customer demonstrations and applications training, is still either being conducted remotely or, to a more limited extent, postponed. Even where customers in these and other geographies have re-opened their sites, some still operate at productivity levels that are below pre-pandemic levels in an effort to accommodate safety protocols and as a result of pandemic-related business disruptions. Any resurgence of the virus or the emergence of new strains of the virus, particularly any new strains which are more easily transmitted, or which are resistant to existing vaccines, may require us or our customers to close or partially close operations once again. These travel restrictions, business closures and operating reductions at Bruker, our customers, our distributors, and/or our suppliers have in the past adversely impacted and may continue to adversely impact our operations worldwide, including our ability to manufacture, sell or distribute our products, as well as cause temporary closures of our foreign distributors, or the facilities of suppliers or customers. Further, global supply chains, including for semiconductor chips, components and raw materials such as copper, continue to be disrupted, causing shortages, which has impacted our ability to manufacture and supply our products. We could also experience increased compensation expenses associated with employee recruiting and employee retention to the extent employment opportunities continue to multiply post-pandemic, causing the search for and retention of talent to become more competitive. This disruption of our employees, distributors, suppliers and customers has historically impacted and may continue to impact our global sales and future operating results.

The preparation of the consolidated financial statements requires us to make estimates, judgments and assumptions that may affect the reported amounts of assets, liabilities, equity, revenues and expenses and related disclosure of contingent assets and liabilities. However, we cannot at this time predict the full extent to which the COVID-19 pandemic will directly or indirectly impact future business, results of operations and financial condition, including sales, expenses, reserves and allowances, manufacturing, research and development costs and employee-related amounts, depends on future developments that continue to be uncertain, including as a result of new information that may emerge concerning new strains of the virus, the need for updated vaccines, the willingness of individuals to receive vaccines (including to protect against any new strains of the virus), and the actions taken to contain or treat the virus, including certain travel restrictions, as well as the economic impact on local, regional, national and international customers and markets. We have made estimates of the impact of COVID-19 within the consolidated financial statements and there may be changes to those estimates in future periods. Actual results may differ from management's estimates if these results differ from historical experience.

We derive a significant portion of our revenue from international sales and are subject to the operational risks of doing business in foreign countries.

International sales account, and are expected to continue to account, for a significant portion of our total revenues. Our revenue from non-U.S. operations represented approximately 72% and 75% of our total consolidated revenue for fiscal 2022 and 2021, respectively. Our international operations are, and will continue to be, subject to a variety of risks associated with conducting business internationally, many of which are beyond our control. These risks, which may adversely affect our ability to achieve and maintain profitability and our ability to sell our products internationally, include:

- changes in foreign currency translation rates;
- changes in regulatory requirements;
- legislation and regulation, including tariffs, relating to the import or export of high technology products, which legislation and regulation may conflict with U.S. law and may have an adverse impact on our business results;
- the imposition of government controls;

- political and economic instability, including the impact of COVID-19, the possibility of an economic recession in certain key markets such as Germany, international hostilities and resulting sanctions, acts of terrorism and governmental restrictions, inflation, trade relationships and military and political alliances;
- costs and risks of deploying systems in foreign countries;
- compliance with export laws and controls and trade embargoes in multiple jurisdictions, which may conflict with U.S. law and may have an adverse impact on our business results;
- limited intellectual property rights;
- the burden of complying with a wide variety of complex foreign laws and treaties, including unfavorable labor regulations, specifically those applicable to our European operations; and
- compliance with U.S. and local laws affecting the activities of U.S. companies abroad, including the United States Foreign Corrupt Practices Act, or FCPA, and local anti-bribery laws.

The United States has implemented tariffs on certain imported goods. These additional tariffs could include items imported by us from China or other countries. In addition, China has imposed tariffs on a wide range of American products in retaliation for these new American tariffs. As a result, there is a concern that the imposition of additional tariffs by the United States could result in the adoption of additional tariffs by China and other countries as well. Any resulting trade war could negatively impact the global market for scientific instruments and could have a significant adverse effect on our business. The imposition of tariffs on items imported by us from China or other countries could increase our costs and could result in lowering our gross margin on products sold. Conversely, any imposition by China of tariffs on items that we export to China could adversely impact our customers' ability to purchase our products and our competitive position in China or increase our costs, which could have a material adverse effect on our business and results of operations.

We must also comply with the European Union General Data Protection Regulation (GDPR) and other similar regulations in other countries, including the UK Data Protection Act 2018. The goal of the regulation is to increase individual rights and protections for personal data located in or originating from the European Union. GDPR is extraterritorial in that it applies to all business within the European Union and any business located outside of the European Union that processes personal data of individuals located within the European Union. There are significant fines associated with non-compliance. In 2020, the Court of Justice of the European Union invalidated the EU-US Privacy Shield Framework, a key mechanism for transfers of personal data from the European Union to the United States and altered the international data transfer under GDPR. Even though Bruker did not rely on the EU-US Privacy Shield for its transfers to the United States, Bruker performed a transfer impact assessment to understand the risks of its EU-US personal data transfers and implemented the new EU Standard Contractual Clauses (including the UK addendum). The Executive Order 14086 of October 7, 2022 of the President of the United States has implemented the US-side of the EU-US Transatlantic Data Privacy Framework that will stabilize the lawfulness of the transfers of personal data from the EU to the US. Nevertheless, Until the European Commission adopts its adequacy decision on the new data transfer mechanism, the uncertainty for multinational companies on the matter remains, and the cost and effort to comply with such requirements could cause disruption of data transfers and have a material adverse effect on our business.

While the impact of these factors is difficult to predict, any one or more of these factors could adversely affect our operations in the future.

Our competitive position and reported financial results may be adversely affected when we exchange foreign currency received from international sales into U.S. Dollars and by fluctuations in currency exchange rates.

A significant portion of our business is conducted in currencies other than the U.S. Dollar, which is our reporting currency. As a result, currency fluctuations among the U.S. Dollar and the currencies in which we do business could cause the price of our products to be more or less competitive than our principal competitors' products. Currency fluctuations will increase or decrease our cost structure relative to those of our competitors, which could lessen the demand for our products and affect our competitive position. From time to time we enter into certain hedging transactions and/or option and foreign currency exchange contracts which are intended to offset some of the market risk associated with our sales denominated in foreign currencies. We cannot predict the effectiveness of these transactions or their impact upon our future operating results, and from time to time they may negatively affect our quarterly earnings.

In addition to the foreign currency exposure associated with differences between where our products are manufactured and sold by us and our competitors, our exposure to currency exchange rate fluctuations results from the currency translation exposure associated with the preparation of our consolidated financial statements, as well as from the exposure associated with transactions of our subsidiaries that are denominated in a currency other than the respective subsidiary's functional currency. While our financial results are reported in U.S. Dollars, the financial statements of many of our subsidiaries outside the U.S. are prepared using the local

currency as the functional currency. During consolidation, these results are translated into U.S. Dollars by applying appropriate exchange rates. As a result, fluctuations in the exchange rate of the U.S. Dollar relative to the local currencies in which our foreign subsidiaries report could cause significant fluctuations in our reported results. Moreover, as exchange rates vary, revenue and other operating results may differ materially from our expectations. The effects of changes in currency exchange rates decreased our 2022 revenue by approximately \$168.0 million, or 6.9%, increased our 2021 revenue by approximately \$43.3 million, or 2.2%, and increased our 2020 revenue by approximately \$29.4 million, or 1.4%. Adjustments resulting from financial statement translations are included as a separate component of shareholders' equity. In the years ended December 31, 2022 and 2021, we recorded net losses from currency translation adjustments of \$22.0 million and net losses of \$26.4 million, respectively.

Additionally, to the extent monetary assets and liabilities, including cash and debt, are held in a different currency than the reporting subsidiary's functional currency, fluctuations in currency exchange rates may have a significant impact on our reported financial results, and may lead to increased earnings volatility. We may record significant gains or losses related to both the translation of assets and liabilities held by our subsidiaries into local currencies and the re-measurement of inter-company receivables and loan balances.

Goodwill, intangible assets and other long-lived assets are subject to impairment which could negatively impact our operating results.

We have recorded goodwill, intangible assets and other long-lived assets that must be periodically evaluated for potential impairment. We assess the realizability of the reported goodwill, intangible assets and other long-lived assets annually, as well as whenever events or changes in circumstances indicate that the assets may be impaired. These events or circumstances generally include operating losses or a significant decline in the earnings associated with the reporting unit these assets are reported within. A decline in our stock price and market capitalization may also cause us to consider whether goodwill, intangible assets and other long-lived assets may require an impairment assessment. Our ability to realize the value of these assets will depend on the future cash flows of the reporting unit in addition to how well we integrate the businesses we acquire. We did not record any impairment losses for the years ended December 31, 2022 and 2021.

If our products fail to achieve and sustain sufficient market acceptance across their broad intended range of applications, we will not generate expected revenue.

Our business strategy depends on our ability to successfully commercialize a broad range of products based on our technology platforms, including magnetic resonance technology, pre-clinical imaging technology, mass spectrometry technology, X-ray technology, atomic force microscopy technology, ChipCytometry technology, stylus and optical metrology technology, fluorescence microscopy technology, infrared technology and superconducting magnet technologies for use in a variety of life science, chemistry and materials analysis applications. Some of our products have only recently been commercially launched and have achieved only limited sales to date. The commercial success of our products depends on obtaining and expanding market acceptance by a diverse array of industrial, academic, clinical, pharmaceutical, biotechnology, applied, medical research and governmental customers around the world. We may fail to achieve or sustain substantial market acceptance for our products across the full range of our intended applications or in one or more of our principal intended applications. Any such failure could decrease our sales and revenue. To succeed, we must convince substantial numbers of potential customers to invest in new systems or replace their existing techniques with techniques employing our systems. Limited funding available for capital acquisitions by our customers, as well as our customers' own internal purchasing approval policies, could hinder market acceptance of our products. Our intended customers may be reluctant to make the substantial capital investment generally needed to acquire our products or to incur the training and other costs involved with replacing their existing systems with our products. We also may not be able to convince our intended customers that our systems are an attractive and cost-effective alternative to other technologies and systems for the acquisition, analysis and management of molecular, cellular and microscopic information. Because of these and other factors, our products may fail to gain or sustain market acceptance.

Our products compete in markets that are subject to rapid technological change, and one or more of the technologies underlying our products could be made obsolete by new technology.

The market for discovery and analysis tools is characterized by rapid technological change and frequent new product introductions. Rapidly changing technology could make some or all of our product lines obsolete unless we are able to continually improve our existing products and develop new products. Because substantially all of our products are based on our technology platforms, including magnetic resonance technology, mass spectrometry technology, X-ray technology, atomic force microscopy technology, fluorescence microscopy technology, ChipCytometry technology, stylus and optical metrology technology and infrared technology, we are particularly vulnerable to any technological advances that would make these techniques obsolete as the basis for analytical systems in any of our markets. To meet the evolving needs of our customers, we must rapidly and continually enhance our current and planned products and services and develop and introduce new products and services. In addition, our product lines are

based on complex technologies that are subject to rapid change as new technologies are developed and introduced in the marketplace. We may have difficulty in keeping abreast of the rapid changes affecting each of the different markets we serve or intend to serve. If we fail to develop and introduce products in a timely manner in response to changing technology, market demands or the requirements of our customers, our product sales may decline, and we could experience significant losses.

We face substantial competition. If we fail to compete effectively, it could harm our business results and materially impact the value of our company.

We face substantial competition in our industries and we expect that competition in all of our markets will increase further. Currently, our principal competition comes from established companies providing products using existing technologies that perform many of the same functions for which we market our products. A number of our competitors have expanded their market share in recent years through business combinations. Other companies also may choose to enter our fields in the future. Our competitors may develop or market products that are more effective or commercially attractive than our current or future products or that may render our products obsolete. Competition has in the past subjected, and is likely in the future to subject, our products to pricing pressure. Many of our competitors have more experience in the market and substantially greater financial, operational, marketing and technical resources than we do, which could give them a competitive advantage in areas such as research and development, production, marketing and distribution. Our ability to compete successfully will depend, in part, on our ability to develop proprietary products that reach the market in a timely manner and are technologically superior to, less expensive than, or more cost-effective than, other currently marketed products.

If investment in life and material science research spending declines, our ability to generate revenue may suffer.

We are dependent, both directly and indirectly, upon general investment in life science research, particularly in the research and development budgets of the pharmaceutical and biotechnology industries, and in material science research as well as upon the financial condition and funding priorities of various governments and government agencies. Since our inception, both we and our academic collaborators and customers have benefited from various governmental contracts and research grants. Whether we or our academic collaborators will continue to be able to attract these grants depends not only on the quality of our products, but also on general spending patterns of public institutions.

Any reduction in the capital resources or government funding of our customers could reduce our sales and impede our ability to generate revenue.

A significant portion of our sales are capital purchases by our customers. The spending policies of our customers could have a significant effect on the demand for our products. These policies are based on a wide variety of factors, including the resources available to make purchases, the spending priorities among various types of equipment, policies regarding spending during recessionary periods and changes in the political climate.

Any changes in capital spending or changes in the capital budgets of our customers could significantly reduce demand for our products. The capital resources of our life science and other corporate customers may be limited by the availability of equity or debt financing. Any significant decline in research and development expenditures by our life science and material science customers could significantly decrease our sales. In addition, a substantial portion of our sales are to non-profit and government entities, which are dependent on government support for scientific research. Any decline in this support could decrease the ability of these customers to purchase our products.

Disruptions at any of our manufacturing facilities could adversely affect our business.

We have manufacturing facilities located in the United States, Europe, Israel and Malaysia. Many of our products are developed and manufactured at single locations, with limited alternate facilities. If we experience any significant disruption of those facilities for any reason, such as war or other geopolitical conflicts, strikes or other labor unrest, power interruptions, fire, earthquakes, or other events beyond our control, we may be unable to manufacture the relevant products at previous levels or at all. A reduction or interruption in manufacturing could harm our customer relationships, impede our ability to generate revenues from our backlog or obtain new orders and could have a material adverse effect on our business, results of operations, financial condition and cash flows.

If employees were to engage in a strike or other work stoppage or interruption, our business, results of operations, financial condition and liquidity could be materially adversely affected.

Many of our employees are represented by workers' councils and labor unions in certain jurisdictions, primarily in Germany and France. If disputes with these employees arise, or if our workers engage in a strike or other work stoppage or interruption, we could

experience a significant disruption of, or inefficiencies in, our operations or incur higher labor costs, which could have a material adverse effect on our business, results of operations, financial condition and liquidity.

In addition to the risks applicable to our life science and materials analysis products, our CBRNE detection products are subject to a number of additional risks, including lengthy product development and contract negotiation periods and certain risks inherent in long-term government contracts.

Our CBRNE detection products are subject to many of the same risks associated with our life science products, including vulnerability to rapid technological change, dependence on mass spectrometry and other technologies and substantial competition. In addition, our CBRNE detection products and certain FT-IR products are generally sold to government agencies under long-term contracts. These contracts generally involve lengthy pre-contract negotiations and product development. We may be required to devote substantial working capital and other resources prior to obtaining product orders. As a result, we may incur substantial costs before we recognize revenue from these products. Moreover, in return for larger, longer-term contracts, our customers for these products often demand more stringent acceptance criteria. These criteria may also cause delays in our ability to recognize revenue from sales of these products. Furthermore, we may not be able to accurately predict in advance our costs to fulfill our obligations under these long-term contracts. If we fail to accurately predict our costs, due to inflation or other factors, we could incur significant losses. Also, the presence or absence of such contracts may cause substantial variation in our results of operations between fiscal periods and, as a result, our results of operations for any given fiscal period may not be predictive of our results for subsequent fiscal periods. The resulting uncertainty may have an adverse impact on our stock price.

We rely on information technology to support our operations and reporting environments. A security failure of that technology, including with respect to cybersecurity, could impact our ability to operate our businesses effectively, adversely affect our financial results, damage our reputation and expose us to potential liability or litigation.

We use information systems to carry out our operations and maintain our business records. Some systems are internally managed and some are maintained by third-party service providers. Our ability to conduct business could be materially and adversely affected if these systems or resources are compromised, damaged or fail. This could be a result of a cyber-incident, social engineering scam, hacking, phishing attempts, malware, natural disaster, hardware or software corruption, failure or error, telecommunications system failure, service provider error or failure, intentional or unintentional personnel actions or other disruption.

In the ordinary course of business, we collect and store sensitive data, including intellectual property, other proprietary information and personally identifiable information. Despite our security measures, our information technology and infrastructure may be vulnerable to cyber-attacks by hackers, including intrusions designed to access and exfiltrate information and to disrupt and lock-up access to systems for the purpose of demanding ransom payments, or breached due to employee error, malfeasance, or other disruptions. Further, a breach of our security systems or infrastructure, or those of our customers, suppliers and other business partners, could result in the disclosure, misuse, corruption or loss of confidential information, including intellectual property, personally identifiable information and other critical data of ours and our employees, customers suppliers and other business partners. If this data is compromised, destroyed or inappropriately disclosed, it could have a material adverse effect, including damage to our reputation, damage to our relationships with our employees, customers, suppliers and other business partners, decrease the value of our investments in research, development and engineering, disrupt our manufacturing processes, result in significant expenses to address and resolve the issues, fines or litigation or other proceedings by affected individuals, customers, suppliers, business partners or regulatory authorities.

Our debt may adversely affect our cash flows and may restrict our investment opportunities or limit our activities.

As of December 31, 2022, we had outstanding an aggregate principal amount of debt totaling approximately \$1,220.9 million. We also had the ability to borrow an additional \$600.0 million available under our existing credit facility. Most of our outstanding debt is in the United States and there are substantial cash requirements in the United States to service debt interest obligations, fund operations, capital expenditures and our declared dividends and finance potential acquisitions or share repurchases. Our ability to satisfy our debt obligations and meet our other liquidity needs depends on our future operating performance and on economic, financial, competitive and other factors beyond our control. Our business may not generate sufficient cash flow to meet our debt obligations or provide sufficient funds for our other objectives. If we are unable to service our debt or obtain additional financing, we may be forced to delay strategic acquisitions, capital expenditures or research and development expenditures or suspend our dividend payments and share repurchases. We may not be able to obtain additional financing on terms acceptable to us or at all. Furthermore, a majority of our cash, cash equivalents and short-term investments is generated from foreign operations, with \$593.8 million, or 92.0% held by foreign subsidiaries as of December 31, 2022. We may incur significant tax consequences relocating cash from our foreign operations to the United States. Our financial condition and results of operations could be adversely impacted if we are unable to maintain a sufficient level of cash flow in the United States to address our funding requirements through cash from operations and timely repatriation of cash from overseas or other sources obtained at an acceptable cost.

Additionally, the agreements governing our debt require that we maintain certain financial ratios related to maximum leverage and minimum interest coverage and contain affirmative and negative covenants, including among others, timely provision of audited consolidated financial statements, restrictions on liens, indebtedness of the Company and its subsidiaries, asset sales, dividends and transactions with affiliates. Our ability to comply with these financial restrictions and covenants is dependent on our operations and performance, which is subject to prevailing economic conditions and other factors, including factors that are beyond our control such as foreign currency translation rates and interest rates. Our failure to comply with any of these restrictions or covenants may result in an event of default under the applicable debt instrument, which could permit acceleration of the debt under the facility and require us to prepay the debt before its scheduled due date.

Changes in our effective income tax rate could adversely affect our results of operations.

We are subject to income taxes in both the United States and various foreign jurisdictions and our domestic and international tax liabilities are largely dependent upon the distribution of income among these different jurisdictions. Various factors may have favorable or unfavorable effects on our effective income tax rate. These factors include interpretations of existing tax laws, the accounting for stock options and other share-based compensation, changes in tax laws and rates, future levels of research and development spending, changes in accounting standards, changes in the mix of earnings in the various tax jurisdictions in which we operate, the outcome of examinations by the U.S. Internal Revenue Service and other tax authorities, the accuracy of our estimates for unrecognized tax benefits and realization of deferred tax assets and changes in overall levels of pre-tax earnings. A change in tax laws, treaties or regulations, or their interpretation, of any country in which we operate could result in a higher tax rate on our earnings, which could result in a significant negative impact on our earnings and cash flow from operations. For example, the Biden administration has proposed significant changes to the tax laws of the United States, including an increase to the federal corporate tax rate, limiting deductions where certain conditions exist, and several proposals that would have the combined effect of increasing the U.S. taxation on profits earned outside the United States. In July and August 2022, the CHIPS and Science Act, or CHIPS, and the Inflation Reduction Act, or IRA were signed into law. The IRA introduced tax provisions primarily focused on implementing a 15% corporate alternative minimum tax on the global adjusted financial statement income of certain large corporations and a 1% excise tax on share repurchases, which are both effective January 1, 2023. While we are still evaluating the impact of the provisions of the IRA, we do not believe this legislation will have a material impact on our consolidated financial statements. We will continue to monitor the potential impact of this new legislation as new information and guidance becomes available.

Beginning in 2022, the Tax Cuts and Jobs Act of 2017 ("TCJA") eliminated the option to deduct research and development expenditures immediately in the year incurred and requires taxpayers to capitalize and amortize such expenditures over five years for research conducted within the United States or 15 years for research conducted abroad pursuant to the Internal Revenue Code.

There are currently multiple initiatives for comprehensive tax reform underway in other key jurisdictions where we have operations. The Organization for Economic Cooperation and Development, or the OECD/G20, has proposed the introduction of a global minimum tax rate at 15% and continues to advance proposals for modernizing international tax rules. We continue to monitor countries' progress toward enactment of the OECD's model rules. During December 2022, the European Union reached agreement on the introduction of a minimum tax directive requiring each member state to enact local legislation. Additionally, South Korea became the first country to enact minimum tax rules, which will be effective for fiscal years beginning on or after January 1, 2024. These specific actions did not impact our consolidated financial statements in 2022 but future enacted legislation in this area could have a material effect on us, if enacted.

We also assess the impact of various international tax reform proposals and modifications to existing tax treaties in all jurisdictions where we have operations that could result in a material impact on our income taxes. However, if such proposals were enacted, or if modifications were made to certain existing treaties, the consequences could have a materially adverse impact on us, including increasing our tax burden, increasing costs of our tax compliance or otherwise adversely affecting our financial condition, results of operations and cash flows.

Various international tax risks could adversely affect our earnings and cash flows.

We are subject to international tax risks. We could be subject to double taxation on income related to operations in certain countries that do not have tax treaties with the country of the trading partner. In addition, we may have a higher effective income tax rate than that of other companies in our industry if losses incurred by one operating company are not available to offset the income of an operating company located in another country. Also, distributions of earnings and other payments received from our subsidiaries may be subject to withholding taxes imposed by the countries where they are operating or are incorporated. If these foreign countries do not have income tax treaties with the United States or the countries where our subsidiaries are incorporated, we could be subject to high rates of withholding taxes on these distributions and payments. Additionally, the amount of the credit that we may claim against our U.S. federal income tax for foreign income taxes paid or accrued is subject to many limitations which may significantly restrict our ability to claim a credit for all of the foreign taxes we pay.

We currently have reserves established for potential tax liabilities. If these reserves are challenged, and we are unable to successfully defend our tax positions, a negative impact to our cash flows could result.

The unpredictability and fluctuation of our quarterly results may adversely affect the trading price of our common stock.

Our revenues and results of operations have in the past and will in the future vary from quarter to quarter due to a number of factors, many of which are outside our control and any of which may cause our stock price to fluctuate. The primary factors that may affect us include the following:

- the timing of sales of our products and services;
- the timing of recognizing revenue and deferred revenue under U.S. GAAP;
- changes in our pricing policies or the pricing policies of our competitors;
- increases in sales and marketing, product development or administration expenses;
- the mix of services provided by us and third-party contractors;
- our ability to attain and maintain quality levels for our products; and
- costs related to acquisitions of technology or businesses.

We can experience quarter-to-quarter fluctuations in our operating results as a result of various factors, some of which are outside our control, such as:

- the timing of governmental stimulus programs and academic research budgets;
- the time it takes between the date customer orders and deposits are received, systems are shipped and accepted by our customers and full payment is received;
- foreign currency exchange rates;
- the time it takes for us to receive critical materials to manufacture our products;
- general economic conditions, geopolitical tensions and other conditions that impact our global operations;
- the time it takes to satisfy local customs requirements and other export/import requirements;
- the time it takes for customers to construct or prepare their facilities for our products; and
- the time required to obtain governmental licenses.

These factors have in the past affected the amount and timing of revenue recognized on sales of our products and receipt of related payments and will likely continue to do so in the future. Accordingly, our operating results in any particular quarter may not necessarily be an indication of any future quarter's operating performance.

Historically we have higher levels of revenue in the fourth quarter of the year compared to the first, second and third quarters, which we believe is primarily the result of our customers' budgeting cycles. Quarter-to-quarter comparisons of our results of operations should not be relied upon as an indication of our future performance. It is likely that in some future quarters, our results of operations may be below the expectations of public market analysts and investors. In this event, the price of our common stock may fall.

The ownership of our shares is highly concentrated, which could cause or exacerbate volatility in our share price as well as have significant influence over us.

As of February 15, 2023, Laukien family members, including our Chairman, President and Chief Executive Officer ("CEO") Frank Laukien and his brother, Joerg Laukien, owned, in the aggregate, approximately 33% of our outstanding common stock. We may also repurchase shares in the future, which could further increase the concentration of our share ownership. Because of this reduced liquidity, the trading of relatively small quantities of shares by our shareholders could disproportionately influence the price of those shares in either direction. The price for our shares could, for example, decline precipitously if a large number of our shares were sold on the market without commensurate demand, as compared to a company with greater trading liquidity that could better absorb those sales without adverse impact on its share price. These shareholders may also exercise substantial influence over all matters requiring shareholder approval, including the election of directors and approval of significant corporate transactions. This

could have the effect of delaying or preventing a change in control of our company and will make some transactions difficult to accomplish without the support of these shareholders.

The loss of key personnel or an inability to attract and retain additional personnel could affect our ability to successfully grow our business.

We are highly dependent upon the continued service and performance of our CEO and other members of senior management and key finance, technical, scientific and production personnel, any of whom may cease their employment with us at any time with minimal advance notice. Because the expertise of these individuals is highly specific and takes years to develop, we face intense competition for these individuals from many other companies. The loss of one or more of our key employees may significantly delay or prevent the achievement of our business objectives, and our failure to attract and retain suitably qualified individuals or to adequately plan for succession could have an adverse effect on our ability to implement our business plan.

Dividends on our common stock could be reduced or eliminated in the future.

In recent years, we have paid dividends on our common stock. In February 2023, we announced that our Board of Directors (“Board”) had declared a quarterly dividend of \$0.05 per share that will be payable in March 2023. There is no guarantee that such dividends will continue indefinitely. In the future, our Board may determine to reduce or eliminate our common stock dividend in order to fund investments for growth, repurchase shares or conserve capital resources.

Risks Related to Our Dependence on Third Parties

If we lose our strategic partners, our marketing and sales efforts could be impaired.

A substantial portion of our sales of selected products consists of sales to third parties who incorporate our products into their systems. These third parties are responsible for the marketing and sales of their systems. We have little or no control over their marketing and sales activities or how they use their resources. Our present or future strategic partners may or may not purchase sufficient quantities of products from us or perform appropriate marketing and sales activities. In addition, if we are unable to maintain our relationships with strategic partners, our businesses may suffer. Failures by our present or future strategic partners, or our inability to maintain existing or enter into new arrangements with strategic partners for product distribution, could materially impede the growth of our businesses and our ability to generate sufficient revenue and profits.

We face risks related to sales through distributors and other third parties that we do not control, which could harm our business.

We sell some products through third party agents, including distributors and value-added resellers. This exposes us to various risks, including competitive pressure, concentration of sales volumes, credit risks, and compliance risks. We may rely on one or a few key distributors for a product or market, and the loss of these distributors could reduce our revenue and net earnings. Distributors may also face financial difficulties, including bankruptcy, which could harm our collection of accounts receivable. Risks related to our use of distributors may reduce sales, increase expenses, and weaken our competitive position. Moreover, violations of the FCPA or similar anti-bribery laws by distributors or other third-party agents could materially and adversely impact our business, reputation and results of operations.

Dependence on contract manufacturing may adversely affect our ability to bring products to market and damage our reputation.

As part of our efforts to streamline our operations and reduce our operating costs, we outsource certain aspects of our manufacturing processes and continue to evaluate additional outsourcing. If our contract manufacturers fail to perform their obligations in a timely manner or at satisfactory quality levels, our ability to bring products to market and our reputation could suffer. For example, during a market upturn, our contract manufacturers may be unable to meet our demand requirements, which may preclude us from fulfilling our customers’ orders on a timely basis. The ability of these manufacturers to perform is largely outside our control. Additionally, changing or replacing our contract manufacturers could cause disruptions or delays. Problems with outsourced manufacturing could result in lower revenues and unexecuted efficiencies, and adversely affect our financial condition and results of operations.

Our operations are dependent upon a limited number of suppliers and contract manufacturers.

We currently purchase components used in our products from a limited number of outside suppliers. Our reliance on a limited number of suppliers could result in time delays associated with redesigning a product due to an inability to obtain an adequate supply of required components and reduced control over pricing, quality and timely delivery. Any of these factors could adversely affect our revenues and profitability. In particular, our X-ray microanalysis business, which manufactures and sells accessories for electron

microscopes, is partially dependent on cooperation from larger manufacturers of electron microscopes. Additionally, our elemental analysis business purchases certain optical detectors from a single supplier, PerkinElmer, Inc., the sole supplier of these detector components. BSI CALID purchases detectors and power supplies from sole or limited source suppliers and its focal plane array detectors from a single supplier, Lockheed Martin Corporation. Similarly, BSI BioSpin obtains various components from sole or limited source suppliers and BEST obtains various raw materials and uses key production equipment from sole or limited source suppliers or contract manufacturers. There are limited, if any, available alternatives to these suppliers. The existence of shortages of these components or the failure of delivery with regard to these components could have a material adverse effect upon our revenues and margins. In addition, price increases from these suppliers or contract manufacturers could have a material adverse effect upon our gross margins.

Because of the scarcity of some components, we may be unable to obtain an adequate supply of components, or we may be required to pay higher prices or to purchase components of lesser quality. Any delay or interruption in the supply of these or other components could impair our ability to manufacture and deliver our products, harm our reputation and cause a reduction in our revenues. In addition, any increase in the cost of the components that we use in our products could make our products less competitive and decrease our gross profits. We may not be able to obtain sufficient quantities of required components on the same or substantially the same terms. Additionally, consolidation among our suppliers could result in other sole source suppliers for us in the future. Other events that could affect our ability to source materials, manufacture or distribute our products include fire, natural disaster or extreme weather or a pandemic and the impact of those events on our and our suppliers' and contract manufacturers' operations.

Supply shortages and increasing prices of raw materials could adversely affect our gross profit.

The last few years have seen periodic supply shortages and sharp increases in the prices for various raw materials, in part due to high demand from developing countries, which have been exacerbated by the COVID-19 pandemic, the war in Ukraine and on-going conflicts between the United States and China and other geopolitical tensions. We rely on some of these materials for the production of our products. For example, in our superconducting magnet production, both for the horizontal and vertical magnet series, we rely on the availability of copper, steel and other metallic raw materials as well as niobium titanium for the production of traditional low-temperature superconducting magnets, wires and devices. Higher prices for these commodities will increase the production cost of superconducting wires and superconducting magnets and may adversely affect gross profits.

The prices of copper and certain other raw materials used for superconductors have increased significantly over the last decade. Since copper is a main constituent of low temperature superconductors, this may affect the price of superconducting wire. This type of increase would have an immediate effect on the production costs of superconducting magnets and may negatively affect the profit margins for those products.

In order to operate superconducting magnets, we and our customers rely on liquid helium. Helium is controlled by the Federal Helium Reserve and is subject to price changes. Shortages of liquid helium associated with federal price controls or depleted natural reserves could drive increases in helium pricing and have an adverse impact on producing and operating our superconducting magnets, which may negatively impact the profit margins of those products.

Risks Related to Our Intellectual Property Rights

Our success depends on our ability to operate without infringing or misappropriating the proprietary rights of others.

Our commercial success depends on avoiding the infringement of other parties' patents and proprietary rights as well as avoiding the breach of any licenses relating to our technologies and products. Given that there may be patents of which we are unaware, particularly in the United States where patent applications are confidential, avoidance of patent infringement may be difficult. Various third parties hold patents which may relate to our technology, and we may be found in the future to infringe these or other patents or proprietary rights of third parties, either with products we are currently marketing or developing or with new products which we may develop in the future. If a third-party holding rights under a patent successfully asserts an infringement claim with respect to any of our current or future products, we may be prevented from manufacturing or marketing our infringing product in the country or countries covered by the patent we infringe, unless we can obtain a license from the patent holder. We may not be able to obtain such a license on commercially reasonable terms, if at all, especially if the patent holder is a competitor. In addition, even if we can obtain a license, it may be non-exclusive, which will permit others to practice the same technology licensed to us. We also may be required to pay substantial damages to the patent holder in the event of infringement. Under some circumstances in the United States these damages could include damages equal to triple the actual damages the patent holder incurs. If we have supplied infringing products to third parties for marketing by them or licensed third parties to manufacture, use or market infringing products, we may be obligated to indemnify these third parties for any damages they may be required to pay to the patent holder and for any losses the third parties may sustain themselves as the result of lost sales or license payments they are required to make to the patent holder. Any successful infringement action brought against us may also adversely affect marketing of the infringing product in other markets not covered by the infringement action, as well as our marketing of other products based on similar technology. Furthermore, we will suffer adverse consequences from a successful infringement action against us even if the action is subsequently reversed on appeal,

nullified through another action or resolved by settlement with the patent holder. The damages or other remedies awarded, if any, may be significant. As a result, any successful infringement action against us may harm our business.

If we are unable to effectively protect our intellectual property, third parties may use our technology, which would impair our ability to compete in our markets.

Our continued success will depend in significant part on our ability to obtain and maintain meaningful patent protection for our products throughout the world. We rely on patents to protect a significant part of our intellectual property and to enhance our competitive position. However, our presently pending or future patent applications may not issue as patents, and any patent previously issued to us may be challenged, invalidated, held unenforceable or circumvented. Furthermore, the claims in patents which have been issued, or which may be issued to us in the future, may not be sufficiently broad to prevent third parties from producing competing products similar to our products. In addition, the laws of various foreign countries in which we compete may not protect our intellectual property to the same extent as do the laws of the United States. Failure to obtain adequate patent protection for our proprietary technology could materially impair our ability to be commercially competitive.

In addition to patent protection, we also rely on the protection of trade secrets, know-how and confidential and proprietary information. To maintain the confidentiality of trade secrets and proprietary information, we generally seek to enter into confidentiality agreements with our employees, consultants and strategic partners upon the commencement of a relationship with us. However, we may not obtain these agreements in all circumstances. In the event of unauthorized use or disclosure of this information, these agreements, even if obtained, may not provide meaningful protection for our trade secrets or other confidential information. In addition, adequate remedies may not exist in the event of unauthorized use or disclosure of this information. The loss or exposure of our trade secrets and other proprietary information would impair our competitive advantages and could have a material adverse effect on our operating results, financial condition and future growth prospects. Furthermore, others may have, or may in the future independently develop, substantially similar or superior know-how and technology.

We may be involved in lawsuits to protect or enforce our patents that are brought by us which could be expensive and time consuming and, if determined adversely, could adversely affect our patent position.

In order to protect or enforce our patent rights, we may initiate patent litigation against third parties, and we may be similarly sued by others. We may also become subject to interference proceedings conducted in the patent and trademark offices of various countries to determine the priority of inventions. The defense and prosecution, if necessary, of intellectual property suits, interference proceedings and related legal and administrative proceedings is costly and diverts our technical and management personnel from their normal responsibilities. We may not prevail in any of these suits. An adverse determination of any litigation or defense proceedings could put our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, during the course of this kind of litigation, there could be public announcements of the results of hearings, motions or other interim proceedings or developments in the litigation. If securities analysts or investors perceive these results to be negative, it could have a substantial negative effect on the trading price of our common stock.

On September 25, 2019, in a complaint filed in the District Court of Düsseldorf, Germany, Carl Zeiss Microscopy GmbH, a subsidiary of Carl Zeiss AG (Zeiss), sued Luxendo GmbH (Luxendo), a subsidiary of Bruker Corporation, for infringement of a registered German utility model patent licensed to Zeiss pertaining to one specific Luxendo product category. Luxendo defended against these claims and on December 14, 2021, obtained a decision by the German Patent and Trademark Office canceling the utility model. Zeiss' appeal against the cancellation was unsuccessful and on December 19, 2022, Zeiss withdrew its complaint. Luxendo is entitled to reimbursement of its statutory fees in the infringement case as well as in the cancellation notice.

A parallel European patent application, from which the utility model was derived, is pending in the European Patent Office (EPO). Luxendo filed third-party observations in the proceedings concerning the grant of the patent application. On March 25, 2022, the EPO communicated to the applicant that Luxendo's observations had merit and confirmed its position on October 14, 2022. A hearing regarding the EPO's concerns about patentability is scheduled for the second quarter of 2023. Luxendo is presently unable to predict the outcome of the EPO's evaluation of the patent application.

Risks Related to Legal, Regulatory and Compliance

Our manufacture and sale of products could lead to product liability claims for which we could have substantial liability.

The manufacture and sale of our products expose us to product liability claims if any of our products cause injury or are found otherwise unsuitable or defective as a consequence of product design, manufacturing, marketing, sale or customer use. In particular, if one of our CBRNE detection products malfunctions, this could lead to civilian or military casualties in a time of unrest, exposing us to

increased potential for high-profile liability. If our CBRNE detection products malfunction by generating a false-positive to a potential threat, we could be exposed to liabilities associated with actions taken that otherwise would not have been required. Additionally, the nuclear magnetic resonance, research magnetic resonance imaging, Fourier transform mass spectrometry and certain electron paramagnetic resonance magnets of BSI BioSpin utilize high magnet fields and cryogenics to operate at approximately 4 Kelvin, the temperature of liquid helium. There is an inherent risk of potential product liability due to the existence of these high magnetic fields, associated stray fields outside the magnet, and the handling of the cryogens associated with superconducting magnets. In addition, our MALDI Biotyper product has an IVD-CE mark and U.S. FDA approval and is used for the identification of microorganisms. Misidentification or a false-negative of certain viruses, bacteria, yeasts or fungi could lead to inappropriate treatment for patients and could expose us to product liability claims.

A successful product liability claim brought against us in excess of, or outside the coverage of, our insurance coverage could have a material adverse effect on our business, financial condition and results of operations. We may not be able to maintain product liability insurance on acceptable terms, if at all, and insurance may not provide adequate coverage against potential liabilities.

We are subject to environmental laws and regulations, which may impose significant compliance or other costs on us.

Our manufacturing, product development and research and development operations and processes involve the controlled use of certain hazardous materials. In addition, we own and/or lease a number of facilities, some of which have been in operation for many decades, where we or others may have used substances or generated and disposed of wastes which are considered hazardous or may be considered hazardous in the future. We also have acquired various companies which historically may have used certain hazardous materials and which may have owned and/or leased facilities at which hazardous materials have been used. For all of these reasons, we are subject to federal, state, foreign, and local laws and regulations governing the use, manufacture, storage, transportation, handling, treatment, remediation, and disposal of hazardous materials and certain waste products. We have potential liability under these laws and regulations with respect to the remediation of past contamination in certain of the facilities we now own or lease. Additionally, in the future our facilities and the disposal sites owned by others to which we send or sent waste, may be identified as contaminated and require remediation. Accordingly, we may become subject to additional compliance costs or environmental liabilities which may be significant and could materially harm our results of operations or financial condition.

Specifically, we use controlled hazardous and radioactive materials in our business and generate wastes that are regulated as hazardous wastes under U.S. federal, and Massachusetts, California, New Jersey, Washington and Wisconsin state environmental and atomic energy regulatory laws and under equivalent provisions of law in those and other jurisdictions in which our research and manufacturing facilities are located. Our use of these substances and materials is subject to stringent, and periodically changing, regulation that can impose costly compliance obligations on us and has the potential to adversely affect our manufacturing activities. The risk of accidental contamination or injury from these materials cannot be completely eliminated. If an accident with these substances occurs, we could be held liable for any damages that result, in addition to incurring clean-up costs and liabilities, which can be substantial. Additionally, an accident could damage our research and manufacturing facilities resulting in delays and increased costs.

We are subject to existing and potential additional regulation and government inquiry, which can impose burdens on our operations and narrow the markets for our products.

We are subject, both directly and indirectly, to the adverse impact of existing and potential future government regulation of our operations and markets. For example, the exportation of our products is subject to U.S. and non-U.S. export control, sanctions, customs, import and anti-boycott laws and regulations, including, as applicable, the International Traffic in Arms Regulations, the Export Administration Regulations and the sanctions laws, regulations and executive orders administered and enforced by the U.S. Department of the Treasury's Office of Foreign Assets Control, and other laws and regulations adopted by the governments or agencies of other countries relating to the same subject matter as the U.S. laws and regulations described above.

The failure to satisfy export control criteria or obtain necessary clearances could delay or prevent shipment of products, which could adversely affect our revenues and profitability. Failure by us, our employees or others working on our behalf to comply with these laws and regulations could result in administrative, civil or criminal liabilities, including suspension, debarment from bidding for or performing government contracts, or suspension of our export privileges, which could have a material adverse effect on us. We frequently team with international subcontractors and suppliers who are also exposed to similar risks. In some cases, compliance with the laws and regulations of one country could violate the laws and regulations of another country. Violations of these laws and regulations could materially adversely affect our brand, international growth efforts and business.

In addition, as a result of our international operations, we are subject to compliance with various laws and regulations, including the FCPA and local anti-bribery laws in the jurisdictions in which we do business (including some higher risk countries according to the Transparency International Corruption Index), which generally prohibit companies and their intermediaries or agents from engaging in bribery or making improper payments to foreign officials or their agents. The FCPA also requires proper record keeping and characterization of such payments in our reports filed with the SEC. Despite maintaining policies and procedures that require our

employees to comply with these laws and our standards of ethical conduct, we cannot ensure that these policies and procedures will always protect us from intentional, reckless or negligent acts committed by our employees or third-party agents.

Moreover, the life sciences industry, which is the market for our principal products, has historically been heavily regulated. Given the evolving nature of this industry, legislative bodies or regulatory authorities may adopt additional regulation that adversely affects our market opportunities. Our business is also directly affected by a wide variety of government regulations applicable to business enterprises generally and to companies operating in the life sciences industry in particular.

Our products are subject to the FDA's requirements for electronic radiation emitting products, which include requirements related to record-keeping and reporting; labeling; notification; product repairs, replacements, and refunds; importation; and performance standards. In addition, our clinical products are subject to regulation as medical devices in the United States by the FDA and by similar regulatory bodies in other countries where such products are sold. These regulations govern a wide variety of product related activities, from quality management, design, development, and testing to labeling, manufacturing, complaint handling, reporting, promotion, sales and distribution. Compliance with applicable regulatory requirements is subject to continual review and is monitored rigorously through periodic inspections by the FDA and other regulatory authorities, which may result in written inspectional observations. The FDA and comparable foreign regulatory authorities also monitor product promotion and marketing materials and activities. If we or any of our suppliers or distributors fail to comply with FDA or other applicable regulatory requirements, or are perceived to potentially have failed to comply, we may face, among other things, warning letters; adverse publicity affecting both us and our customers; investigations or notices of non-compliance, fines, injunctions, and civil penalties; import or export restrictions; partial suspensions or total shutdown of production facilities or the imposition of operating restrictions; increased difficulty in obtaining required FDA clearances or approvals or foreign equivalents; seizures or recalls of our products or those of our customers; or the inability to sell such products. Any such FDA or comparable foreign regulatory actions could disrupt our business and operations, lead to significant remedial costs and have a material adverse impact on our financial position and results of operations. In addition, negative publicity and product liability claims resulting from any adverse regulatory action could have a material, adverse effect on our financial condition and results of operations. Further, the replacement of the European Union IVD Directive by the IVD Regulation (EU) 2017/746 in May 2022 has resulted in a stricter regime on manufacturers of IVDs and under transitional arrangements our products currently approved under the Directive must be recertified under the Regulation by May 2024.

We have been, are, and expect to be in the future, subject to inquiries from the government agencies that enforce these regulations, including the U.S. Department of State, the U.S. Department of Commerce, the U.S. FDA, the U.S. Internal Revenue Service, the U.S. Department of Labor, the U.S. Department of Homeland Security, the U.S. Department of Justice, the SEC, the Federal Trade Commission, U.S. Customs and Border Protection and the U.S. Department of Defense, among others, as well as from state or foreign governments and their departments and agencies. As a result, from time to time, the attention of our management and other resources may be diverted to attend to these inquiries. In addition, failure to comply with these regulations or obtain or maintain necessary permits and licenses could result in a variety of fines or other censures or an interruption in our business operations which may have a negative impact on our ability to generate revenues and could adversely affect our financial condition and results of operations.

Failure to maintain effective internal controls may cause a loss of investor confidence in the reliability of our financial statements or cause us to delay filing our periodic reports with the SEC and adversely affect our stock price.

The SEC, as directed by Section 404 of the Sarbanes-Oxley Act of 2002, adopted rules requiring public companies to include a report of management on internal control over financial reporting in their annual reports on Form 10-K that contain an assessment by management of the effectiveness of our internal control over financial reporting. In addition, our independent registered public accounting firm must attest to and report on the effectiveness of our internal control over financial reporting. Although we test our internal control over financial reporting in order to ensure compliance with the Section 404 requirements, our failure to maintain adequate internal controls over financial reporting could result in an adverse reaction in the financial marketplace due to a loss of investor confidence in the reliability of our financial statements or a delay in our ability to timely file our periodic reports with the SEC, which ultimately could negatively impact our stock price.

We operate as an entrepreneurial, decentralized company, which presents both benefits and certain risks. In particular, significant growth in a decentralized operating model may put strain on certain business group resources and our corporate functions, which could materially and adversely affect our business, financial condition and results of operations.

Decentralization necessarily places significant control and decision-making powers in the hands of local management, which presents certain risks, including the risk that we may be slower to detect or react to compliance-related matters and that "company-wide" business initiatives may be more challenging or costly to implement, and the risk of noncompliance or failures higher than they may be in a more centralized operating environment. In addition, key business group resources and our corporate functions, which are leanly staffed but responsible for supporting our decentralized operations, may also not be able to detect or resolve financial, operational, and compliance matters on a timely basis. Our failure to adapt our financial, operational and compliance controls and

systems to effectively manage our decentralized business and comply with our obligations as a public company could materially and adversely affect our business, financial condition or results of operations.

General Risks Factors

If we are not able to successfully integrate the businesses we acquire through mergers, acquisitions or strategic alliances, we may not be able to realize all of the cost savings and other benefits that we expect to result from the transactions and our financial results may be different than expected.

Our strategy includes expanding our technology base and product offerings through selected mergers, acquisitions and strategic alliances. For example, from January 1, 2020 to December 31, 2022, we have acquired 15 businesses to expand our technologies and product offerings.

Successful integration of the businesses we acquire involves a number of risks, including, among others, risks related to:

- coordinating or consolidating geographically separate organizations and integrating personnel with different business backgrounds and corporate cultures;
- integrating previously autonomous departments in sales and marketing, distribution, accounting and administrative functions;
- integrating financial information and management systems;
- the pace of our acquisition activity and the related diversion of already limited resources and management time;
- disruption of our ongoing business;
- potential impairment of relationships with customers as a result of changes in management or otherwise arising out of such transactions; and
- retention of key employees of the acquired businesses within the first one to two years after the acquisition, including the risk that they may compete with us subsequently.

We may have difficulty developing, manufacturing and marketing the products of a newly acquired company or business in a way that enhances the performance of our combined businesses or product lines. As a result, we may not realize the value from expected synergies. Acquisitions have resulted, and may in the future result, in unexpected significant costs and expenses, including disputes over contingent consideration and complicated accounting for complex transaction structures. In the future, we may be required to record charges to earnings during the period if we determine there is an impairment of goodwill or intangible assets, up to the full amount of the remaining carrying value of the assets.

We generally assume the liabilities of businesses we acquire, which could include liability for an acquired business' violation of law that occurred before we acquired it. In addition, we have historically acquired smaller, privately held companies that may not have strong cultures of legal compliance or the robust financial controls of a larger, publicly traded company, and if we fail to implement adequate training, controls, and monitoring of the acquired companies, we could also be liable for post-acquisition legal or accounting violations.

Other companies may have difficulty acquiring us, even if doing so would benefit our shareholders, due to provisions under our corporate charter and bylaws, as well as Delaware law.

Provisions in our restated certificate of incorporation, and our amended and restated bylaws, as well as Delaware law could make it more difficult for other companies to acquire us, even if doing so would benefit our shareholders. Our restated certificate of incorporation, and amended and restated bylaws contain the following provisions, among others, which may inhibit an acquisition of our company by a third party:

- a staggered Board of Directors, where shareholders elect only a minority of the board each year;
- advance notification procedures for matters to be brought before shareholder meetings;
- a limitation on who may call shareholder meetings; and
- the ability of our Board of Directors to issue up to 5,000,000 shares of preferred stock without a shareholder vote.

ITEM 1B UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2 PROPERTIES

We believe that our existing principal facilities are well maintained and in good operating condition and that they are adequate for our foreseeable business needs.

In addition to the principal facilities noted below, we lease additional facilities for sales, applications and service support in various countries throughout the world including Australia, Austria, Belgium, Brazil, China, Czech Republic, France, Germany, Hong Kong, India, Israel, Italy, Japan, Kenya, Malaysia, Mexico, Netherlands, Norway, Poland, Portugal, Russia, Singapore, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, the United Kingdom and the United States. If we should require additional or alternative facilities, we believe that such facilities can be obtained on short notice at competitive rates.

The location and general character of our principal properties are as follows:

Location	Principal Use	Approximate Square Feet	Relationship
Principal Facilities Used in Current Operations for BSI BioSpin:			
Ettlingen, Germany	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	360,000	Owned
Faellanden, Switzerland	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	381,000 37,000	Owned Leased
Wissembourg, France	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	189,000	Owned
Principal Facilities Used in Current Operations for BSI CALID:			
Bremen, Germany	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	298,000	Owned
Ettlingen, Germany	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	182,000	Owned
Faellanden, Switzerland	Manufacturing, Research and Development, Marketing, Sales and Administrative	14,600	Leased
Nehren, Germany	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	89,000	Owned/ Leased
Principal Facilities Used in Current Operations for BSI Nano:			
Karlsruhe, Germany	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	145,000	Owned
Berlin, Germany	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	243,000	Owned
Santa Barbara, CA, U.S.A.	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	100,000	Owned
Graz, Austria	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	30,000	Leased
Penang, Malaysia	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	100,000	Leased
Migdal HaEmek, Israel	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	22,000	Leased
Del Ray Beach, FL, U.S.A.	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	30,100	Leased
Principal Facilities Used in Current Operations for BEST:			
Perth, Scotland	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	47,000	Owned
Hanau, Germany	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	138,000	Owned
Bergisch Gladbach, Germany	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	134,000	Leased
Carteret, NJ, U.S.A.	Manufacturing, Research and Development, Application and Demonstration, Marketing, Sales and Administrative	115,000	Leased
Shared Principal Facilities:			
Billerica, MA, U.S.A.	Research and Development, Application and Demonstration, Marketing, Sales and Administrative	200,000	Owned

ITEM 3 *LEGAL PROCEEDINGS*

We are involved in lawsuits, claims, and proceedings, including, but not limited to, patent and commercial matters, which arise in the ordinary course of business. There are no such matters pending that we currently believe are reasonably likely to have a material impact on our business or to our consolidated financial statements.

Details on recent legal matters can be found in Note 17 to our consolidated financial statements included in this Annual Report on Form 10-K under Item 8.

In addition, we are subject to regulation by national, state and local government agencies in the United States and other countries in which we operate. From time to time, we are the subject of governmental investigations often involving regulatory, marketing and other business practices. These governmental investigations may result in the commencement of civil and criminal proceedings, fines, penalties and administrative remedies which could have a material adverse effect on our financial position, results of operations and/or liquidity.

ITEM 4 *MINE SAFETY DISCLOSURES*

Not applicable.

PART II

ITEM 5 MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED SHAREHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Prices

Our common stock is traded on the Nasdaq Global Select Market under the symbol "BRKR."

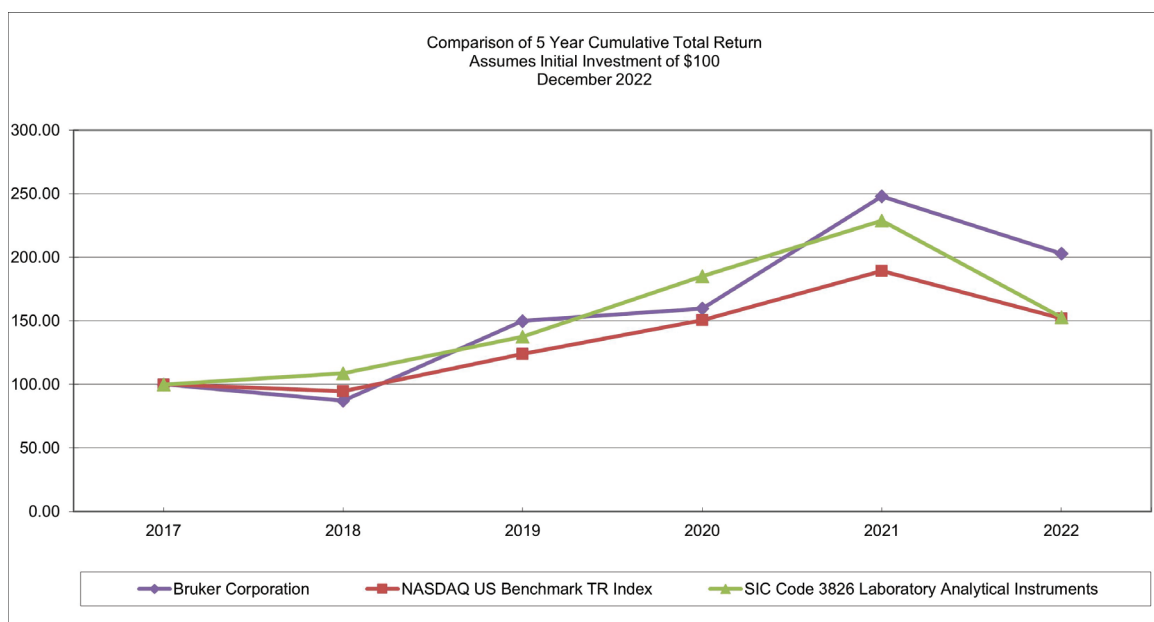
As of February 15, 2023, there were approximately 75 holders of record of our common stock. This number does not include individual beneficial owners of shares held in nominee name or within clearinghouse positions of brokerage firms and banks.

Dividends

In February 2016, we announced the establishment of a dividend policy and the declaration by our Board of Directors of an initial quarterly cash dividend in the amount of \$0.04 per share of our issued and outstanding common stock. Beginning in 2022, we increased the quarterly cash dividend to our shareholders in the amount of \$0.05 per share of our issued and outstanding common stock and in February 2023 announced that our Board had approved a quarterly dividend for the first quarter of 2023 of \$0.05 per share, payable in March. Future dividend payments, if any, are subject to approval of our Board of Directors.

Stock Price Performance Graph

The graph below compares Bruker Corporation's annual percentage change in cumulative total return on common shares over the past five years with the cumulative total return of companies comprising the Nasdaq US Benchmark TR Index and the SIC Code 3826 Laboratory Analytical Instruments Index. This presentation assumes that \$100 was invested in shares of the relevant issuers on December 31, 2017, and that dividends received were immediately invested in additional shares. The graph plots the value of the initial \$100 investment at one-year intervals for the fiscal years shown.



Cumulative Total Return Index for:	2017	2018	2019	2020	2021	2022
Bruker Corporation	\$ 100.0	\$ 87.18	\$ 149.82	\$ 159.67	\$ 248.06	\$ 202.70
Nasdaq US Benchmark TR Index	100.0	94.56	124.03	150.41	189.36	152.00
SIC Code 3826 Laboratory Analytical Instruments	100.0	108.61	137.43	184.99	228.85	152.79

The data for this performance graph was compiled by Zack's Investment Research, Inc. and is used with its permission.

Issuer Purchases of Securities

The following table provides information about purchases made by or on behalf of the Company or any “affiliated purchaser,” as defined in Rule 10b-18(a)(3) under the Exchange Act, during the quarter ended December 31, 2022 of shares of our common stock.

Period	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number (or Approximate Dollar Value) of Shares that May Yet Be Purchased Under the Plans or Programs (2)
October 1—October 31, 2022	269,500	\$ 57.25	269,500	\$ 127,427,784
November 1—November 30, 2022	56,500	64.04	56,500	123,809,620
December 1—December 31, 2022	109,400	66.29	109,400	116,557,510
	<u>435,400</u>	<u>\$ 60.40</u>	<u>435,400</u>	<u>\$ 116,557,510</u>

- (1) The Company purchased shares of common stock in accordance with its share repurchase program approved by the Board of Directors and announced on May 12, 2021 (the “2021 Repurchase Program”). The shares were purchased on the open market at prevailing prices.
- (2) The 2021 Repurchase Program authorizes the purchase of the Company’s common stock of up to \$500.0 million from time to time over a two-year period, in amounts, at prices, and at such times as management deems appropriate, subject to market conditions, legal requirements and other considerations. At February 22, 2023, \$94.4 million remains for future purchase under the 2021 Repurchase Program.

In May 2019, the Company’s Board of Directors approved a share repurchase program (the “2019 Repurchase Program”) authorizing the purchase of the Company’s common stock of up to \$300.0 million from time to time, in amounts, at prices, and at such times as management deems appropriate, subject to market conditions, legal requirements and other considerations. We purchased a total of 555,602 shares at an aggregate cost of \$34.5 million under the 2019 Repurchase Program during the year ended December 31, 2021. We completed the 2019 Repurchase Program in April 2021, after reaching the maximum cumulative spend.

We purchased a total of 4,215,094 shares of common stock with an aggregate cost of approximately \$264.7 million under the 2021 Repurchase Program during the year ended December 31, 2022. Any future purchases will be funded from cash on hand, future cash flows from operations and available borrowings under our revolving credit facility.

ITEM 6 RESERVED

ITEM 7 MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with our consolidated financial statements and notes to those statements, appearing elsewhere in this report. This report contains forward-looking statements reflecting our current expectations that involve risks and uncertainties, such as statements of our plans, objectives, expectations and intentions. The cautionary statements made in this report should be read as applying to all related forward-looking statements wherever they appear in this report. Our actual results may differ materially from those indicated in the forward-looking statements due to a number of factors, including those discussed in Item 1A, Risk Factors and elsewhere in this report.

The following Management's Discussion and Analysis of Financial Condition and Results of Operations, or MD&A, describes the principal factors affecting the results of our operations, financial condition and changes in financial condition, as well as our critical accounting policies and estimates. Our MD&A is organized as follows:

- *Non-GAAP Measures.* This section provides appropriate disclosures regarding forward looking statements and our use of Non-GAAP financial measures.
- *Overview.* This section provides a brief discussion of our reportable segments' results of operations, significant recent developments in our businesses, and challenges and risks that may impact our businesses in the future.
- *Results of Operations.* This section provides our analysis of the significant line items on our consolidated statements of income and comprehensive income for the year ended December 31, 2022 compared to the year ended December 31, 2021.
- *Liquidity and Capital Resources.* This section provides an analysis of our liquidity and cash flow and a discussion of our outstanding debt and commitments.
- *Critical Accounting Policies and Estimates.* This section discusses the accounting estimates that are considered important to our financial condition and results of operations and require us to exercise subjective or complex judgments in their application. All of our significant accounting policies are summarized in Note 2 to our consolidated financial statements in Item 8 of this Annual Report on Form 10-K.
- *Recent Accounting Pronouncements.* This section provides a summary of recent accounting pronouncements and discusses their potential impact on our consolidated financial statements.

Non-GAAP Measures

Although our consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States of America ("GAAP"), we believe describing revenue and expenses, excluding the effects of foreign currency, acquisitions and divestitures, as well as certain other charges, net, provides meaningful supplemental information regarding our performance. We rely internally on certain measures that are not calculated according to GAAP. These measures are organic revenue, free cash flow, non-GAAP gross profit margin and non-GAAP operating margin. Our management believes that these financial measures provide relevant and useful information that is widely used by equity analysts, investors and competitors in our industry, as well as by our management, in assessing both consolidated and business unit performance. We define the term organic revenue as GAAP revenue excluding the effect of foreign currency translation changes and the effect of acquisitions and divestitures. We define the term non-GAAP gross profit margin as GAAP gross profit margin with certain non-GAAP measures excluded and non-GAAP operating margin as GAAP operating margin with certain non-GAAP measures excluded. These non-GAAP measures exclude costs related to restructuring actions, acquisition and related integration expenses, amortization of acquired intangible assets, costs associated with our global information technology transition initiatives, and other non-operational costs and we believe these are useful measures to evaluate our continuing business.

We define free cash flow as GAAP net cash provided by operating activities less additions to property, plant, and equipment. We believe free cash flow is a useful measure to evaluate our business as it indicates the amount of cash generated after additions to property, plant, and equipment which is available for, among other things, investments in our business, acquisitions, share repurchases, dividends and repayment of debt. We regularly use these non-GAAP financial measures internally to understand, manage, and evaluate our business results and make operating decisions. We also measure our employees and compensate them, in part, based on such non-GAAP measures and use this information for our planning and forecasting activities. These measures may also be useful to investors in evaluating the underlying operating performance of our business. The presentation of these non-GAAP financial measures is not intended to be a substitute for, or superior to, the financial information prepared and presented in accordance with GAAP and may be different from non-GAAP financial measures used by other companies, and therefore, may not be comparable among companies.

OVERVIEW

We are a developer, manufacturer and distributor of high-performance scientific instruments and analytical and diagnostic solutions that enable our customers to explore life and materials at microscopic, molecular and cellular levels. Our corporate headquarters are located in Billerica, Massachusetts. We maintain major technical and manufacturing centers in Europe, Asia and North America and we have commercial offices located throughout the world. Bruker is organized into four reportable segments: the BSI BioSpin Segment, the BSI CALID Segment, the BSI Nano Segment and the Bruker Energy & Supercon Technologies (BEST) Segment.

Revenue for the year ended December 31, 2022 increased by \$112.8 million, or 4.7%, to \$2,530.7 million, compared to \$2,417.9 million for the comparable period in 2021. Included in revenue was a decrease of approximately \$168.0 million from unfavorable foreign exchange rate movements, partially offset by an increase of \$34.3 million from acquisitions. Excluding the unfavorable effects of foreign exchange rate movements and our recent acquisitions, our organic revenue, a non-GAAP measure, increased \$246.5 million, or 10.2%. Revenue increases were driven by strong demand for our differentiated high-value scientific instruments and life science solutions in addition to pricing benefits compared to the same period in 2021.

Our gross profit margin increased to 51.6% for the year ended December 31, 2022 as compared to 50.0% in the same period in 2021, the result of favorable mix, pricing, volume leverage and net favorable impact of foreign exchange rate movements, partially offset by increased costs in 2022 due to supply chain and logistics inefficiencies and inflation compared to 2021.

The income tax provision for the years ended December 31, 2022 and December 31, 2021 was \$116.4 million and \$113.0 million, respectively, representing effective tax rates of 28.1% and 28.7%, respectively. The decrease in our effective tax rate was primarily due to the impact of tax planning initiatives partially offset by the resolution of tax controversies.

Diluted earnings per share for the year ended December 31, 2022 was \$1.99, an increase of \$0.18, compared to \$1.81 per share in the same period in 2021. The increase in diluted earnings per share was primarily driven by higher net income and reduced diluted outstanding shares resulting from our share repurchase activity during the year.

The following table presents a reconciliation from net cash provided by operating activities, which is the most directly comparable GAAP operating financial measure, to free cash flow as used by management (in millions):

	Year Ended December 31,	
	2022	2021
Net cash provided by operating activities	\$ 274.4	\$ 282.4
Less: purchases of property, plant and equipment	(129.2)	(92.0)
Free cash flow	\$ 145.2	\$ 190.4

For the year ended December 31, 2022, our free cash flow was \$45.2 million lower than the same period in 2021, primarily from an increase in net income offset by an increase in working capital due to increased inventory build for 2022 orders and supply chain management as well as increased capital expenditures. The BEST reportable segment acquired the land and building previously being leased at its Hanau, Germany location in June 2022 for a total purchase price, inclusive of closing costs, of Euro 34.2 million (\$33.8 million).

The following table presents a reconciliation from gross profit and gross profit margin, which are the most directly comparable GAAP operating performance measures, to non-GAAP gross profit and non-GAAP gross profit margin as used by management (dollars in millions):

	Year Ended December 31,			
	2022		2021	
Gross profit	\$ 1,305.7	51.6 %	\$ 1,209.6	50.0 %
Non-GAAP adjustments:				
Restructuring costs	0.9	—	3.4	0.1 %
Acquisition-related costs	0.4	—	0.7	—
Purchased intangible amortization	18.3	0.8 %	20.2	0.9 %
Other costs	4.8	0.2 %	1.1	0.1 %
Non-GAAP gross profit	\$ 1,330.1	52.6 %	\$ 1,235.0	51.1 %

Our non-GAAP gross profit margin was 52.6% and 51.1% in the years ended December 31, 2022 and 2021, respectively. The increases in our non-GAAP gross profit margins were driven by favorable mix, pricing, volume leverage and net favorable impact of foreign exchange rate movements, partially offset by supply chain and logistics challenges compared to 2021.

The following table presents a reconciliation from operating income and operating margin, which are the most directly comparable GAAP operating performance measures, to non-GAAP operating income and non-GAAP operating margin as used by management (in millions):

	Year Ended December 31,			
	2022		2021	
Operating income	\$	432.7	17.1 %	\$ 413.3 17.1 %
Non-GAAP adjustments:				
Restructuring costs		4.8	0.2 %	8.2 0.3 %
Acquisition-related costs		19.7	0.8 %	6.9 0.3 %
Purchased intangible amortization		37.1	1.5 %	37.4 1.5 %
Other costs		11.3	0.4 %	4.4 0.2 %
Non-GAAP operating income	\$	505.6	20.0 %	\$ 470.2 19.4 %

Our non-GAAP operating margin was 20.0% and 19.4% for the years ended December 31, 2022 and 2021, respectively. The increase in our non-GAAP operating margins in 2022 was due to the gross margin expansion, partially offset by increased investments in our research and development capabilities, as compared to 2021.

We can experience quarter-to-quarter fluctuations in our operating results as a result of various factors, some of which are outside our control, such as:

- the impact of the COVID-19 global pandemic, inflation, the threat of recession, financial liquidity, currency volatility or devaluation and geopolitical tensions on our customers, supply chain or manufacturing capabilities;
- potential energy shortages in Europe where we have significant operations and overall higher energy and transportation costs;
- the impact of certain weather-related disruptions;
- the timing of governmental stimulus programs and academic research budgets;
- the time it takes between the date customer orders and deposits are received, systems are shipped and accepted by our customers and full payment is received;
- foreign currency exchange rates;
- changes in raw material, component and logistics costs;
- the time it takes for us to receive critical materials to manufacture our products;
- general economic conditions, including the impact of COVID-19 or other factors on the global economy;
- the time it takes to satisfy local customs requirements and other export/import requirements;
- the time it takes for customers to construct or prepare their facilities for our products;
- the time required to obtain governmental licenses;
- our ability to identify suitable acquisition targets and successfully integrate and manage acquired business; and
- costs related to acquisitions of technology or businesses.

Several of these factors have in the past affected and may continue to affect the amount and timing of revenue recognized on sales of our products and receipt of related payments and will likely continue to do so in the future. Accordingly, our operating results in any particular quarter may not necessarily be an indication of any future quarter's operating performance. Throughout the COVID-19 pandemic, we have been focused on and continue to focus on three key priorities: the health and safety of our employees, customers and partners; maintaining business continuity and service levels for our customers; and delivering our enabling research and diagnostic products to help fight the pandemic, and to support other essential priorities of our society.

Health and safety of our valued employees, customers and partners

Although we expect that COVID-19 vaccinations and boosters broadly distributed and administered will continue to improve conditions, the COVID-19 pandemic has had and if conditions deteriorate again, could continue to have an adverse effect on the United States and global economies, as well as on aspects of our operations and those of third parties on whom we rely. In response to the COVID-19 pandemic, we have implemented strict social distancing, enhanced cleaning protocols and other preventative measures

in our major facilities to ensure the health and safety of our valued employees, customers and partners - and we may take further actions, or be required to take further actions, that are in the best interests of our employees, customers and partners. While many of our office colleagues worked remotely at the height of the pandemic and through subsequent surges, we placed enhanced focus on the safety of our service organization and factory employees for whom work from home was not feasible. Where customer sites were accessible and open, our field service organizations operated under social distancing protocols with proper face coverings to ensure the safety of customer sites, when our employees needed to be on site. Consistent with local government and health organization guidelines, many of our facilities have started a gradual return to the office for employees who have been working remotely. Although we are adhering with applicable government and health organization guidelines, an outbreak of COVID-19 at one or more of our facilities could cause a facility shutdown and a reduction in our workforce. As we continue to monitor developments and make appropriate adjustments, as needed, employee and visitor health and safety will remain our paramount concern.

Maintaining business continuity and service levels for our customers

Ensuring our ability to supply our enabling technologies and solutions and maintaining high service levels for our customers is another top priority for Bruker. In late March and during parts of April 2020, several of our manufacturing sites underwent temporary controlled shutdowns or were operating at reduced capacity to implement new safety protocols, comply with local rules, and manage cost and inventory levels. These sites thereafter ramped back up with expanding capacity and productivity levels. However, with any resurgence of the virus or the emergence of additional variants and subvariants, particularly those that are resistant to existing vaccines, we may again need to consider temporary controlled shutdowns or reduced capacity measures. In addition, we are continuing capital investments in production facilities for efficiencies and expansion. We continue to encounter supply chain risks associated with the pandemic, the global economy, including inflation, the threat of recession, financial liquidity, currency volatility or devaluation and geopolitical tensions, and the worldwide shortage of semiconductor chips, components and raw materials, such as copper.

Delivering enabling research and diagnostic products to help fight the pandemic and to support other essential priorities of our society

Bruker is providing critical technologies and solutions to help combat the COVID-19 crisis, most notably our Microbiology and infectious disease diagnostics portfolio and our nuclear magnetic resonance and mass spectrometry systems which are used in critical disease, therapeutic and vaccine research.

The COVID-19 global pandemic has driven volatility and uncertainty in global markets and has in the past affected our operations. We continue to monitor the impact of COVID-19 on our business and our supply chain and respond accordingly. For additional information on the various risks posed by the COVID-19 pandemic, refer to Item 1A. Risk Factors included in this report.

RESULTS OF OPERATIONS

A discussion regarding our results of operations for the fiscal year ended December 31, 2021 compared to 2020 can be found under Item 7 of our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, filed with the SEC on February 28, 2022, which is available on the SEC's website at www.sec.gov and our Investor Relations website at <https://ir.bruker.com> under the "Financial Info" section.

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021

Consolidated Results

The following table presents our results for the years ended December 31, 2022 and 2021 (dollars in millions):

	Year Ended December 31,		Dollar Change	Percentage Change
	2022	2021		
Product revenue	\$ 2,109.9	\$ 2,017.3	\$ 92.6	4.6%
Service revenue	414.6	393.2	21.4	5.4%
Other revenue	6.2	7.4	(1.2)	(16.2)%
Total revenue	2,530.7	2,417.9	112.8	4.7%
Cost of product revenue	984.0	979.3	4.7	0.5%
Cost of service revenue	240.8	228.2	12.6	5.5%
Cost of other revenue	0.2	0.8	(0.6)	(75.0)%
Total cost of revenue	1,225.0	1,208.3	16.7	1.4%
Gross profit	1,305.7	1,209.6	96.1	7.9%
Operating expenses:				
Selling, general and administrative	607.4	561.2	46.2	8.2%
Research and development	235.9	220.8	15.1	6.8%
Other charges, net	29.7	14.3	15.4	107.7%
Total operating expenses	873.0	796.3	76.7	9.6%
Operating income	432.7	413.3	19.4	4.7%
Interest and other income (expense), net	(18.8)	(19.7)	0.9	(4.6)%
Income before income taxes, equity in income of unconsolidated investees, net of tax, and noncontrolling interests in consolidated subsidiaries	413.9	393.6	20.3	5.2%
Income tax provision	116.4	113.0	3.4	3.0%
Equity in income of unconsolidated investees, net of tax	1.0	—	1.0	
Consolidated net income	298.5	280.6	17.9	6.4%
Net income attributable to noncontrolling interests in consolidated subsidiaries	1.9	3.5	(1.6)	(45.7)%
Net income attributable to Bruker Corporation	\$ 296.6	\$ 277.1	\$ 19.5	7.0%

Revenue

Revenue increases were driven by strong demand for our differentiated instruments and solutions as well as pricing improvements offset by the negative impact of foreign currency translation. The BSI BioSpin Segment revenue for the year ended December 31, 2022 was \$696.7 million, an increase of 0.8% compared to the same period in 2021. The increase was driven by strong growth in the biopharma market. The BSI CALID Segment revenue for the year ended December 31, 2022 was \$822.2 million, a slight increase of 0.3% compared to the same period in 2021. The increase in revenues was a direct result of strong demand for our differentiated instruments, partially offset by supply chain constraints and the negative impact of foreign currency translation. The BSI Nano Segment revenue for the year ended December 31, 2022 was \$787.0 million, an increase of 12.8% compared to the same period in 2021, driven by strong demand in its industrial and semiconductor metrology markets. The BEST revenue for the year ended December 31, 2022 was \$237.1 million, an increase of 5.9% compared to the same period in 2021, driven by strong superconductor demand from major medical magnetic resonance imaging manufacturers.

Geographically for the year ended December 31, 2022, our North America revenue grew 16.9%, Asia Pacific increased by 10.4%, while European revenue declined by 8.8% compared to the same period in 2021.

Gross Profit

The increase in gross profit was a result of favorable mix, volume leverage and price realization, partially offset by the net unfavorable impact of foreign exchange rate movements and by supply chain, logistics, inefficiencies and inflationary challenges compared to 2021.

Selling, General and Administrative

Our selling, general and administrative expenses for the year ended December 31, 2022 increased to 24.0% of total revenue from 23.2% of total revenue for the comparable period in 2021. The increase as a percentage of revenue was a result of investments in our commercial infrastructure related to Project Accelerate 2.0 initiatives and driven by higher freight, logistics and commission costs.

Research and Development

Our research and development expenses for the year ended December 31, 2022 increased to 9.3% of total revenue from 9.1% of total revenue for the comparable period in 2021. The consistent percentage relates to higher overall revenues in addition to our increased investment in research and development capabilities period over period related to Project Accelerate 2.0 initiatives.

Other Charges, Net

Other charges, net for the year ended December 31, 2022 consisted primarily of \$19.3 million of acquisition-related charges related to acquisitions completed in 2022 and 2021, \$3.9 million of restructuring costs related to closing facilities and implementing outsourcing and other restructuring initiatives, \$3.0 million of costs associated with our global IT transformation activities, \$2.4 million related to professional fees and \$0.3 million related to long-lived asset impairments.

Other charges, net for the year ended December 31, 2021 consisted primarily of \$6.1 million of acquisition-related charges related to acquisitions completed in 2021 and 2020, \$4.8 million of restructuring costs related to closing facilities and implementing outsourcing and other restructuring initiatives, \$2.8 million of costs associated with our global IT transformation activities, \$1.1 million related to professional fees and (\$0.5) million related to long-lived asset impairments.

Operating Income

The increase in operating income was due to higher gross profit resulting from favorable mix, volume leverage, price realization and net favorable impact of foreign exchange rate movements offset by planned sales and marketing investments, supply chain and logistics challenges and inflationary margin challenges in 2022, as compared to 2021, and investments in research and development capabilities.

Interest and Other Income (Expense), Net

The modest decline in interest and other income (expense), net in the year ended December 31, 2022, as compared to the same period in 2021 was primarily due to lower foreign currency exchange losses driven by the strengthening of the U.S. Dollars against other currencies as well as fair value gains from strategic investments.

Income Tax Provision

The effective tax rates for years ended 2022 and 2021 were 28.1% and 28.7%, respectively. The decrease in our effective tax rate for the year ended December 31, 2022, compared to 2021, was primarily due to the impact of tax planning initiatives partially offset by the resolution of tax controversies.

Equity in Income of Unconsolidated Investees, net of tax

Equity in income of unconsolidated investees, net of tax represents the Company's proportionate share of the earnings or losses as reported by equity-method investees.

Net Income Attributable to Noncontrolling Interests and Redeemable Noncontrolling Interests

The net income attributable to noncontrolling interests represented the minority shareholders' proportionate share of the net income recorded by our majority-owned subsidiaries.

Net Income Attributable to Bruker Corporation

The increase in net income and earnings per diluted share was primarily driven by the increase in revenue, gross profit and operating profit as a result of strengthened demand and recovery in our business and end markets.

Segment Results

Revenue

The following table presents revenue, change in revenue, and revenue growth by reportable segment for the years ended December 31, 2022 and 2021 (dollars in millions):

	2022	2021	Dollar Change	Percentage Change
BSI BioSpin	\$ 696.7	\$ 691.0	\$ 5.7	0.8 %
BSI CALID	822.2	819.6	2.6	0.3 %
BSI Nano	787.0	697.5	89.5	12.8 %
BEST	237.1	223.8	13.3	5.9 %
Eliminations (a)	(12.3)	(14.0)	1.7	
	<u>\$ 2,530.7</u>	<u>\$ 2,417.9</u>	<u>\$ 112.8</u>	<u>4.7 %</u>

(a) Represents product and service revenue between reportable segments.

The increase in revenue for the BSI BioSpin segment was due to strong growth in its service and support revenues, as well as strong growth in pre-clinical imaging and notable contribution from our biopharma process analytical technology, offset by unfavorable currency impact. BSI CALID segment revenue increased with continued growth in the life science mass spectrometry business and notable strength in proteomics applications and the timsTOF portfolio offset by unfavorable currency impact. The increase in revenue for the BSI Nano Segment was driven by strong demand in industrial markets and semiconductor customers. The increase in revenue for the BEST Segment resulted from strong superconductor demand by our magnetic resonance imaging original equipment manufacturer customers.

Operating Income

The following table presents operating income and operating margins on revenue by reportable segment for the years ended December 31, 2022 and 2021 (dollars in millions):

	2022		2021	
	Operating Income (Loss)	Percentage of Segment Revenue	Operating Income (Loss)	Percentage of Segment Revenue
BSI BioSpin	\$ 167.1	24.0 %	\$ 158.2	22.9 %
BSI CALID	196.0	23.8 %	227.2	27.7 %
BSI Nano	113.0	14.4 %	73.4	10.5 %
BEST	31.3	13.2 %	22.2	9.9 %
Corporate, eliminations and other (a)	(74.7)		(67.7)	
Total operating income	<u>\$ 432.7</u>	<u>17.1 %</u>	<u>\$ 413.3</u>	<u>17.1 %</u>

(a) Represents corporate costs and eliminations not allocated to the reportable segments.

The operating margin increases in the BSI BioSpin, BSI CALID and BSI Nano Segments was primarily due to higher gross margin resulting from differentiated products and operating leverage, partially offset by costs of commercial investments. The operating margin increase in the BEST Segment resulted from higher revenue and favorable mix.

LIQUIDITY AND CAPITAL RESOURCES

We anticipate that our existing cash and credit facilities will be sufficient to support our operating and investing needs for at least the next twelve months. Our future cash requirements could be affected by acquisitions that we may complete, purchases of our common stock or the payment of dividends in the future. Historically, we have financed our growth and liquidity needs through cash flow generation from operations and a combination of debt financing and the issuance of common stock. In the future, there are no

assurances that we will continue to generate cash flow from operations or that additional financing alternatives will be available to us, if required, or if available, will be obtained on terms favorable to us.

Cash, cash equivalents and short-term investments at December 31, 2022 and 2021 totaled \$645.5 million and \$1,168.2 million, respectively, of which \$593.8 million and \$646.9 million, respectively, related to cash, cash equivalents and short-term investments is held outside of the United States in our foreign subsidiaries, most significantly in the Netherlands, Switzerland, China and Japan.

The following table presents our cash flows from operating activities, investing activities and financing activities for the periods presented (in millions):

	Year Ended December 31,	
	2022	2021
Net cash provided by operating activities	\$ 274.4	\$ 282.4
Net cash used in investing activities	(251.6)	(192.4)
Net cash (used in) provided by financing activities	(415.3)	318.7
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(30.5)	(22.5)
Net change in cash, cash equivalents and restricted cash	<u>\$ (423.0)</u>	<u>\$ 386.2</u>

Cash provided by operating activities during the year ended December 31, 2022 resulted from consolidated net income adjusted for non-cash items of \$418.5 million, partially offset by a change in operating assets and liabilities, net of acquisitions and divestitures of \$144.1 million. The decrease was primarily due to inventory build to stock up and handle the supply chain challenges, timing of tax payments partially offset by customer advances received during the period related to new orders and deferral of revenue due to supply chain challenges. During the year ended December 31, 2021, net cash provided by operating activities resulted from consolidated net income adjusted for non-cash items of \$408.0 million, partially offset by a change in operating assets and liabilities, net of acquisitions and divestitures of \$125.6 million. The primary increase is a result of increased net income driven by the increase in revenue, gross profit and operating profit as a result of the rebounding in our business and end markets. The decrease in cash flows due to change in operating assets and liabilities, net of acquisitions for the year ended December 31, 2021 was primarily due to increases in inventory in response to supply chain challenges, timing of tax payments and increased accounts receivable at the end of 2021 due to higher revenues. These decreases were partially offset by a decrease in timing of payments as compared to the same period in the prior year.

Cash used in investing activities during the year ended December 31, 2022 resulted primarily from the acquisitions of \$182.3 million, purchases of property, plant and equipment of \$129.2 million, and strategic investments of \$60.2 million, partially offset by maturity of short-term investments of \$100.0 million and \$13.9 million of net proceeds from sales of property, plant and equipment. Cash used in investing activities during the year ended December 31, 2021 was primarily from purchases of property, plant and equipment of \$92.0 million, acquisitions of \$65.0 million and purchases of short-term investments, net of maturities of \$49.8 million, offset by \$10.0 million of net proceeds from our cross-currency swap agreements and proceeds from sales of property, plant and equipment of \$4.9 million.

We currently expect capital expenditures in 2023 to be approximately \$130.0 million.

Net cash used in financing activities during the year ended December 31, 2022 was primarily attributable to cash payments made for shares of common stock under our repurchase program of \$263.1 million, repayment of our 2012 Note Purchase Agreement of \$105.0 million and \$29.8 million for the payment of dividends. Net cash provided by financing activities during the year ended December 31, 2021 was primarily from proceeds from the 2021 Note Purchase Agreement of \$492.8 million, offset by cash paid for purchases of common stock under our repurchase program of \$153.3 million and \$24.2 million for the payment of dividends.

Share Repurchase Program

In May 2019, our Board of Directors approved a share repurchase program (the “2019 Repurchase Program”) authorizing the purchase of our common stock of up to \$300.0 million from time to time, in amounts, at prices, and at such times as management deems appropriate, subject to market conditions, legal requirements and other considerations. We purchased a total of 555,602 shares at an aggregate cost of \$34.5 million under the 2019 Repurchase Program during the year ended December 31, 2021. We completed the 2019 Repurchase Program in April 2021, after reaching the maximum cumulative spend.

In May 2021, our Board of Directors approved a share repurchase program (the “2021 Repurchase Program”) authorizing the purchase of our common stock up to \$500.0 million from time to time over a two-year period, in amounts, at prices, and at such times we deem appropriate, subject to market conditions, legal requirements and other conditions. We purchased a total of 4,215,094 shares at an aggregate cost of \$264.7 million during the year ended December 31, 2022. We purchased a total of 1,537,217 shares at an aggregate cost of \$118.9 million during the year ended December 31, 2021. As of February 22, 2023, \$94.4 million remains for future

purchases under the 2021 Repurchase Program. We intend to fund any additional purchases from cash on hand, future cash flows from operations and available borrowings under the revolving credit facility.

Income Taxes

At December 31, 2022 and in accordance with the tax reform legislation signed by the President of the United States on December 22, 2017, or the 2017 Tax Act, we recorded state and foreign withholding taxes, as well as subsequent foreign currency translations on these withholding taxes as they are an obligation of the parent company, on the cash and liquid assets portion of the unremitted earnings and profits (E&P) of foreign subsidiaries expected to be repatriated from our foreign subsidiaries to the United States. We continue to be indefinitely reinvested in the amount of \$851 million of non-cash E&P that is subject to the 2017 Tax Act deemed repatriation. If this E&P is ultimately distributed to the United States in the form of dividends or otherwise we would likely be subject to additional withholding tax. We will continue to evaluate our assertions on the cumulative historical outside basis differences in our foreign subsidiaries as of December 31, 2022. The amount of unrecognized deferred withholding taxes on the undistributed E&P was \$82.2 million at December 31, 2022.

As of December 31, 2022, we had approximately \$65.8 million of net operating loss carryforwards available to reduce state taxable income that are expected to expire at various times beginning in 2023; approximately \$74.4 million of net operating losses available to reduce German federal income and trade taxes that are carried forward indefinitely and \$15.2 million of other foreign net operating losses that are expected to expire at various times in the future. We had U.S. federal foreign tax credit carried forwards in the amount of \$5.2 million. We also had U.S. federal and state research and development tax credits of \$3.1 million and \$9.5 million, respectively. Utilization of these credits and state net operating losses may be subject to annual limitations due to the ownership percentage change limitations provided by Internal Revenue Code Section 382 and similar state provisions. In the event of a deemed change in control under Internal Revenue Code Section 382, an annual limitation on the utilization of net operating losses and credits may result in the expiration of all or a portion of the net operating loss and credit carryforwards. Additionally, the Company has \$39.8 million of gross interest expense carryforward as provided by Code Section 163(j) that can be carried forward indefinitely.

Uncertain tax contingencies are positions taken or expected to be taken on an income tax return that may result in additional payments to tax authorities. If a tax authority agrees with the tax position taken or expected to be taken or the applicable statute of limitations expires, then additional payments will not be necessary.

Credit Facilities

On December 7, 2021, the Company entered into a note purchase agreement to issue and sell CHF 300 million aggregate principal amount of 0.88% series A senior notes and EUR 150 million aggregate principal amount of 1.03% series B senior notes due December 8, 2031. We designated our CHF 300 million series A senior notes as a hedge in our net investment in our Swiss Franc denominated net assets. We designated our EUR 150 million series B senior notes as a hedge in our net investment in our Euro denominated net assets. Proceeds of the notes will be used for general corporate purposes.

On December 11, 2019, we entered into (1) a new revolving credit agreement to establish a new revolving credit facility in the aggregate principal amount of \$600 million; (2) a term loan agreement to establish a new term loan facility in the aggregate principal amount of \$300 million; and (3) a note purchase agreement to issue and sell CHF 297 million aggregate principal amount of 1.01% senior notes due December 11, 2029. Floating interest rates under the term loan were simultaneously fixed through cross-currency and interest rate swap agreements into Euro (\$150 million) and Swiss Franc (\$150 million) rates carrying average effective interest rates of 0.94% and hedge our net investment in our Euro and Swiss Franc denominated net assets. The new revolving credit agreement replaced our \$500 million five-year revolving credit agreement established on October 27, 2015, that was terminated on December 11, 2019.

In addition, we designated our CHF 297 million senior notes as a hedge in our net investment in our Swiss Franc denominated net assets. Proceeds from this financing were used to repay the outstanding borrowings under our prior 2015 revolving credit facility and we intend to use the remaining proceeds for general corporate purposes and to support corporate strategic objectives. During December 2019, we entered into U.S. Dollar to Euro cross-currency swaps on our existing 2012 private placement notes of \$105 million 4.31% Series 2012A Senior Notes, Tranche C, due January 18, 2022 and subsequently paid in January 2022, and the existing \$100 million 4.46% Series 2012A Senior Notes, Tranche D, due January 18, 2024, resulting in an average effective interest rate of 2.25% on these instruments. The cross-currency swaps hedge our net investment in our Euro denominated net assets.

As of December 31, 2022, we have several cross-currency and interest rate swap agreements with a notional value of \$146.6 million of U.S. Dollar to Swiss Franc and a notional value of \$246.6 million of U.S. Dollar to Euro to hedge the variability in the movement of foreign currency exchange rates on portions of our Euro and Swiss Franc denominated net asset investments. As a result of these agreements, we lowered our net interest expense by \$8.6 million and \$5.5 million during the year ended December 31, 2022 and 2021, respectively. We anticipate these swap agreements will lower net interest expense by approximately \$17.1 million in 2023 and \$13.8 million in 2024.

We had the following debt outstanding (in millions):

	2022	2021
EUR notes (in U.S. Dollars) under the 2021 Note Purchase Agreement	\$ 160.6	\$ 170.7
CHF notes (in U.S. Dollars) under the 2021 Note Purchase Agreement	325.1	329.2
CHF notes (in U.S. Dollars) under the 2019 Note Purchase Agreement	321.9	325.9
U.S. Dollar notes under the 2019 Term Loan Agreement	293.3	299.2
U.S. Dollar notes under the 2012 Note Purchase Agreement	100.0	205.0
Unamortized debt issuance costs	(1.7)	(2.0)
Other loans	5.9	1.9
Total notes and loans outstanding	1,205.1	1,329.9
Finance lease obligations	14.1	4.3
Total debt	1,219.2	1,334.2
Current portion of long-term debt and finance lease obligations	(18.7)	(112.4)
Total long-term debt, less current portion	<u>\$ 1,200.5</u>	<u>\$ 1,221.8</u>

There was no amount outstanding under the 2019 Credit Agreement as of December 31, 2022 or 2021.

Annual maturities of notes and loans outstanding are as follows (in millions):

2023	\$ 16.6
2024	115.7
2025	16.1
2026	248.7
2027	0.6
Thereafter	809.1
Total	<u>\$ 1,206.8</u>

As of December 31, 2022, we had no off-balance sheet arrangements and we were in compliance with the financial covenants of these debt arrangements.

The following is a summary of the maximum commitments and the net amounts available to us under the 2019 Credit Agreement and other banking working capital lines and guarantees of credit with various financial institutions located primarily in Germany and Switzerland that are unsecured and typically due upon demand at December 31, 2022 (dollars in millions):

	Weighted Average Interest Rate	Total Amount Committed by Lenders	Outstanding Borrowings	Outstanding Letters of Credit	Total Committed Amounts Available
2019 Credit Agreement	0.15%	\$ 600.0	\$ —	\$ —	\$ 600.0
Bank guarantees and working capital line	varies	130.7	—	130.7	—
Total revolving lines of credit		<u>\$ 730.7</u>	<u>\$ —</u>	<u>\$ 130.7</u>	<u>\$ 600.0</u>

As of December 31, 2022, we were in compliance with the covenants of all debt agreements.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America, or U.S. GAAP, which requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and reported amounts of revenues and expenses during the reporting period.

We consider our accounting estimates to be critical to the consolidated financial statements if (i) the estimate requires significant judgment or is complex in nature and (ii) if different estimates and assumptions were used, the results could have a material impact on our consolidated financial statements. We evaluate our estimates and the application of our policies on an ongoing basis.

We base our estimates and judgments on our historical experience, current market and economic conditions, industry trends, and other assumptions that we believe are reasonable. Actual results could differ from these estimates. Changes in estimates are recorded in the period in which they become known.

We believe the following critical accounting policies and estimates to be both those most important to the portrayal of our financial position and results of operations and those that require the most estimation and subjective judgment.

Revenue recognition

We recognize revenue in accordance with Accounting Standards Codification (“ASC”) 606, *Revenue from Contracts with Customers* (ASC 606). The key elements of ASC 606 are: 1) identifying a contract with the customer; 2) identifying the performance obligations in the contract; 3) determining the transaction price; 4) allocating the transaction price to the performance obligations in the contract; and 5) recognizing revenue when (or as) each performance obligation is satisfied.

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer. A contract’s transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. Some of our contracts have multiple performance obligations, most commonly due to providing additional goods or services along with a system, such as installation, accessories, parts and services. For contracts with multiple performance obligations, we allocate the contract’s transaction price to each performance obligation using the best estimate of the standalone selling price of each distinct good or service being provided to the customer. Our best evidence of standalone selling price is our normal selling pricing and discounting practices for the specific product or service when sold on a standalone basis. Alternatively, when not sold separately, we may determine standalone selling price using an expected cost plus a margin approach.

Our performance obligations are typically satisfied at a point in time, most commonly either on shipment, or customer acceptance. Certain performance obligations, such as maintenance contracts and extended warranty, are recognized over time based on the contractual obligation period. In addition, certain arrangements to provide more customized deliverables may be satisfied over time based on the extent of progress towards completion. For performance obligations recognized over time, revenue is measured by progress toward completion of the performance obligation that reflects the transfer of control. Typically, progress is measured using a cost-to-cost method based on cost incurred to date relative to total estimated costs upon completion as this best depicts the transfer of control to the customer. Application of the cost-to-cost method requires us to make reasonable estimates of the extent of progress toward completion and the total costs we expect to incur. Losses are recorded immediately when we estimate that contracts will ultimately result in a loss. Changes in the estimates could affect the timing of revenue recognition.

We include costs incurred in connection with shipping and handling of products within selling, general and administrative costs. Amounts billed to customers in connection with these costs are included in total revenues. When control of the goods transfers prior to the completion of our obligation to ship the products to our customers, we have elected the practical expedient to account for the shipping services as a fulfillment cost. We expense incremental costs of obtaining a contract as and when incurred if the expected amortization period is one year or less or the amount is immaterial. We exclude from the transaction price all taxes assessed by a governmental authority on revenue-producing transactions that are collected by us from a customer.

We recognize revenue from systems sales upon transfer of control in an amount that reflects the consideration we expect to receive. Transfer of control generally occurs upon shipment, or for certain systems, based upon customer acceptance for a system once installed at a customer facility. For systems that include customer-specific acceptance criteria, we are required to assess when we can demonstrate the acceptance criteria has been met, which generally is upon successful factory acceptance testing or customer acceptance and evidence of installation. For systems that require installation and where system revenue is recognized upon shipment, the standalone selling price of installation is deferred until customer acceptance. Revenue from accessories and parts is generally recognized based on shipment. Service revenue is recognized as the services are performed or ratably over the contractual obligation and includes maintenance contracts, extended warranties, training, application support and on-demand services.

When products are sold through an independent distributor or a strategic distribution partner, we recognize the system sale upon transfer of control which is typically on shipment. When we are responsible for installation, the standalone selling price of installation is deferred until customer acceptance. Our distributors do not have price protection rights or rights of return; however, our products are typically warranted to be free from defect for a period of one year.

We require an advance deposit based on the terms and conditions of contracts with customers for many of our contracts. Typically, revenue is recognized within one year of receiving an advance deposit. We do not have any material payment terms that extend beyond one year. There is minimal variable consideration included in the transaction price of our contracts.

Other revenues are primarily comprised of development arrangements recognized on a cost-plus-fixed-fee basis and licensing arrangements recognized either when the licenses are provided or ratably over the contract term depending on the nature of the arrangement.

Income taxes

Deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between the financial statement carrying amounts and the income tax basis of assets and liabilities. A valuation allowance is applied against any net deferred tax asset if, based on the available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

We record liabilities related to uncertain tax positions in accordance with the guidance that clarifies the accounting for uncertainty in income taxes recognized in our financial statements. This guidance prescribes a minimum recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. We include accrued interest and penalties related to unrecognized tax benefits and income tax liabilities, when applicable, in income tax expense.

Inventories

All inventories are stated at the lower of cost and net realizable value. Cost is determined principally by the first-in, first-out method for a majority of subsidiaries and by average-cost for certain other subsidiaries. We reduce the carrying value of our inventories for differences between cost and estimated net realizable value, taking into consideration usage in the preceding twelve months, expected demand, technological obsolescence and other information including the physical condition of demonstration inventories. We record a charge to cost of product revenue for the amount required to reduce the carrying value of inventory to net realizable value. Costs associated with the procurement of inventories, such as inbound freight charges and purchasing and receiving costs, are capitalized as part of inventory and are also included in the cost of product revenue line item within the consolidated statements of income and comprehensive income.

Goodwill, other intangible assets and other long-lived assets

Goodwill and indefinite-lived intangible assets are not amortized, but are evaluated for impairment on an annual basis, or on an interim basis when events or changes in circumstances indicate that the carrying value may not be recoverable. In assessing the recoverability of goodwill and indefinite-lived intangible assets, we must make assumptions regarding the estimated future cash flows, including forecasted revenue growth and the discount rate to determine the fair value of these assets. If these estimates or their related assumptions change in the future, we may be required to record impairment charges against these assets in the reporting period in which the impairment is determined.

We test goodwill for impairment at the reporting unit level, which is the operating segment or one level below an operating segment. We have the option of performing a qualitative assessment to determine whether further impairment testing is necessary before performing the quantitative assessment. If as a result of the qualitative assessment, it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, a quantitative impairment test will be required. Otherwise, no further testing will be required. If a quantitative impairment test is performed, we compare the fair values of the applicable reporting units with their aggregate carrying values, including goodwill. We determine the fair value of reporting units using a weighting of both the market and the income methodologies. Estimating the fair value of the reporting units requires significant judgment by management. If the carrying amount of a reporting unit exceeds the fair value of the reporting unit, an impairment charge is recognized for the amount by which the carrying value amount exceeds the reporting unit's fair value up to the total amount of goodwill allocated to the reporting unit.

In process research and development, or IPR&D, acquired as part of business combinations under the acquisition method represents ongoing development work associated with enhancements to existing products, as well as the development of next generation products. IPR&D is initially capitalized at fair value as an intangible asset with an indefinite life and assessed for impairment on an annual basis, or when indicators of impairment are identified. When the IPR&D project is complete, it is reclassified as a finite-lived intangible asset and is amortized over its estimated useful life. If an IPR&D project is abandoned before completion or is otherwise determined to be impaired, the value of the asset or the amount of the impairment is charged to the consolidated statements of income and comprehensive income in the period the project is abandoned or impaired.

Business Combinations

We account for business combinations under the acquisition method of accounting. Accordingly, at the date of each acquisition, we measure the fair value of all identifiable assets acquired (including intangible assets), liabilities assumed and any remaining noncontrolling interests and allocate the amounts paid to all items measured. The fair value of identifiable intangible assets acquired is based on valuations that use information and assumptions determined by management and which consider management's best estimates of inputs and assumptions that a market participant would use.

RECENT ACCOUNTING PRONOUNCEMENTS

Information regarding recently issued accounting pronouncements may be found in Note 3 to our consolidated financial statements included in this Annual Report on Form 10-K.

ITEM 7A QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are potentially exposed to market risks associated with changes in foreign currency translation rates, interest rates and commodity prices. We selectively use financial instruments to reduce these risks. All transactions related to risk management techniques are authorized and executed pursuant to our policies and procedures. Analytical techniques used to manage and monitor foreign currency translation and interest rate risk include market valuations and sensitivity analysis.

We have estimated our market risk exposure using sensitivity analysis. To test the sensitivity of our market risk exposure, we have estimated the changes in fair value of market risk sensitive instruments assuming a hypothetical 10 percent adverse change in market prices or rates. The results of the sensitivity analyses are summarized below.

Foreign Currency Risk

We generate a substantial portion of our revenues in international markets, principally Germany and other countries in the European Union, Switzerland and Japan, which exposes our operations to the risk of exchange rate fluctuations. The impact of currency exchange rate movement can be positive or negative in any period. Our costs related to sales in foreign currencies are largely denominated in the same respective currencies, reducing our transaction risk exposure. However, for foreign currency denominated sales in certain regions, such as Japan, where we do not incur significant costs denominated in Japanese Yen, we are more exposed to the impact of foreign currency fluctuations.

For sales not denominated in U.S. Dollars, if there is an increase in the rate at which a foreign currency is exchanged for U.S. Dollars, it will require more of the foreign currency to equal a specified amount of U.S. Dollars than before the rate increase. In such cases, if we price our products in the foreign currency, we will receive less in U.S. Dollars than we would have received before the rate increase went into effect. If we price our products in U.S. Dollars and competitors price their products in local currency, an increase in the relative strength of the U.S. Dollar could result in our prices not being competitive in a market where business is transacted in the local currency. For example, if the U.S. Dollar strengthened against the Japanese Yen, our Japanese-based competitors would have a greater pricing advantage over us.

Our revenue by geography was as follows (dollars in millions):

	2022		2021	
	Revenue	Percentage of Revenue	Revenue	Percentage of Revenue
United States	\$ 696.1	27.5 %	\$ 601.0	24.9 %
Europe	839.3	33.2 %	920.7	38.1 %
Asia Pacific	804.9	31.8 %	729.1	30.1 %
Rest of world	190.4	7.5 %	167.1	6.9 %
Total revenue	<u>\$ 2,530.7</u>	<u>100.0 %</u>	<u>\$ 2,417.9</u>	<u>100.0 %</u>

Changes in foreign currency exchange rates decreased our revenue by approximately 6.9% and increased our revenue by approximately 2.2% in the years ended December 31, 2022 and December 31, 2021, respectively.

Assets and liabilities of our foreign subsidiaries, where the functional currency is the local currency, are translated into U.S. Dollars using period-end exchange rates. Revenues and expenses of foreign subsidiaries are translated at the average exchange rates in effect during the year. Adjustments resulting from financial statement translations are included as a separate component of shareholders' equity. In the years ended December 31, 2022 and 2021, we recorded net losses of \$22.0 million and net losses of \$26.4 million, respectively, from currency translation adjustments. A 10% depreciation in functional currencies, relative to the U.S. Dollar, at December 31, 2022, would have resulted in a reduction of shareholders' equity of approximately \$329.0 million. Gains and losses resulting from foreign currency transactions are reported in interest and other income (expense), net in the consolidated statements of income and comprehensive income. Our foreign currency transaction gain (loss), net were net losses of \$5.8 million and \$4.1 million for years ended December 31, 2022 and 2021, respectively.

The impact of currency exchange rate movement can be positive or negative in any period. We periodically enter into foreign currency contracts in order to minimize the volatility that fluctuations in currency translation have on our monetary transactions. Under these arrangements, we typically agree to purchase a fixed amount of a foreign currency in exchange for a fixed amount of U.S. Dollars or other currencies on specified dates with maturities of less than twelve months, with some agreements extending to longer periods. These transactions do not qualify for hedge accounting and, accordingly, the instrument is recorded at fair value with the corresponding gains and losses recorded in the consolidated statements of income and comprehensive income.

As of December 31, 2022, we have several cross-currency and interest rate swap agreements with a notional value of \$146.6 million of U.S. Dollar to Swiss Franc and a notional value of \$246.6 million of U.S. Dollar to Euro to hedge the variability in the movement of foreign currency exchange rates on portions of our Euro and Swiss Franc denominated net asset investments. Under the U.S. GAAP hedge accounting guidance, changes in fair value of the derivative that relates to changes in the foreign currency spot rate are recorded in the currency translation adjustment in comprehensive income (loss) and remain in accumulated comprehensive income (loss) in shareholders' equity until the sale or substantial liquidation of the foreign operation. The difference between the interest rate received and paid under the interest rate cross-currency swap derivative agreement is recorded in interest income in the statement of income.

From time to time, we have entered into forward currency contracts designed to minimize the volatility that fluctuations in foreign currency have on our cash flows related to purchases and sales denominated in foreign currencies. Under these arrangements, we agree to purchase a fixed amount of a foreign currency in exchange for a fixed amount of U.S. Dollars or other currencies on specified dates typically with maturities of less than twelve months with some agreements extending to longer periods. These transactions are recorded at fair value with the corresponding gains and losses recorded in interest and other income (expense), net in the consolidated statements of income and comprehensive income. At December 31, 2022 and 2021, we had forward currency contracts with notional amounts aggregating \$187.2 million and \$180.7 million, respectively. We will continue to evaluate our currency risks, and in the future, may utilize foreign currency contracts more frequently.

Interest Rate Risk

We regularly invest excess cash in short-term investments that are subject to changes in interest rates. We believe that the market risk arising from holding these financial instruments is minimal because of our policy of investing in short-term financial instruments issued by highly rated financial institutions.

Our exposure related to adverse movements in interest rates is derived primarily from outstanding floating rate debt instruments that are indexed to short-term market rates. We currently have a higher level of fixed rate debt than variable rate debt, which limits the exposure to adverse movements in interest rates.

Commodity Price Risk

We are exposed to certain commodity risks associated with prices for various raw materials. The prices of copper and certain other raw materials, particularly niobium-tin, used to manufacture superconductors have increased significantly over the last decade. Copper and niobium-tin are the main components of low temperature superconductors and continued commodity price increases for copper and niobium, as well as other raw materials, may negatively affect our profitability. Periodically, we enter into commodity forward purchase contracts to minimize the volatility that fluctuations in the price of copper have on our sales of these products. At December 31, 2022 and 2021, we had fixed price commodity contracts with notional amounts aggregating \$8.9 million and \$5.5 million, respectively. The fair value of the fixed price commodity contracts at December 31, 2022 and 2021 was \$0.6 million and \$0.4 million, respectively. As commodity contracts settle, gains (losses) as a result of changes in fair values are adjusted to the contracts with the customers through revenues. We will continue to evaluate our commodity risks and may utilize commodity forward purchase contracts more frequently in the future.

Inflation Risk

We are subject to inflationary cost pressures across global supply chain networks. Certain components, parts, or materials are experiencing significant cost pressures that have impacted or may impact our cost of operations in future periods. Further, inflation has increased our general and administrative expenses and may vary between countries in which we operate. We continue to evaluate these cost increases in relation to our new orders and may continue to see a negative impact on our financial results for a period of time.

ITEM 8 FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Bruker Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Bruker Corporation and its subsidiaries (the “Company”) as of December 31, 2022 and 2021, and the related consolidated statements of income and comprehensive income, of redeemable noncontrolling interests and shareholders' equity and of cash flows for each of the three years in the period ended December 31, 2022, including the related notes (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control - Integrated Framework(2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

As described in Management's Report on Internal Control over Financial Reporting, management has excluded Prolab Instruments GmbH, PreOmics GmbH, PepSep Holding ApS, Optimal Industrial Automation and Technologies, IonSense, Inc., Inscopix, Inc., and Neurescence, Inc. from its assessment of internal control over financial reporting as of December 31, 2022 because they were acquired by the Company in purchase business combinations during 2022. We have also excluded Prolab Instruments GmbH, PreOmics GmbH, PepSep Holding ApS, Optimal Industrial Automation and Technologies, IonSense, Inc., Inscopix, Inc., and Neurescence, Inc. from our audit of internal control over financial reporting. The total assets and total revenues of these acquired entities excluded from management's assessment and our audit of internal control over financial reporting collectively represent 1.5% and 1.1%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2022.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue Recognition – System Sales

As described in Note 2 to the consolidated financial statements, the Company recognizes revenue from systems sales upon transfer of control in an amount that reflects the consideration it expects to receive. Transfer of control generally occurs upon shipment, or for certain systems, based upon customer acceptance for a system once delivered and installed at a customer facility. For systems that include customer-specific acceptance criteria, management is required to assess when it can demonstrate the acceptance criteria has been met, which generally is upon successful factory acceptance testing or customer acceptance and evidence of installation. The Company's product revenue for the year ended December 31, 2022 was \$2,109.9 million, of which a significant portion relates to system sales.

The principal consideration for our determination that performing procedures relating to revenue recognition for system sales is a critical audit matter is a high degree of auditor effort in performing procedures related to the Company's system sales revenue recognition.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to system sales revenue recognition. These procedures also included, among others, evaluating the recognition of revenue for a sample of system sales transactions by obtaining and inspecting source documents, such as invoices, customer purchase orders, shipping or delivery documents, acceptance documents, and cash receipts, where applicable.

/s/ PricewaterhouseCoopers LLP
Boston, Massachusetts
February 28, 2023

We have served as the Company's auditor since 2016.

BRUKER CORPORATION
CONSOLIDATED BALANCE SHEETS
(in millions, except share and per share data)

	December 31,	
	2022	2021
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 645.5	\$ 1,068.2
Short-term investments	—	100.0
Accounts receivable, net	472.7	416.9
Inventories	800.1	710.1
Assets held for sale	1.4	4.4
Other current assets	193.5	172.2
Total current assets	2,113.2	2,471.8
Property, plant and equipment, net	487.0	406.1
Goodwill	457.6	339.5
Intangible assets, net	270.9	211.8
Operating lease assets	51.2	59.9
Deferred tax assets	76.8	90.1
Other long-term assets	155.1	70.8
Total assets	\$ 3,611.8	\$ 3,650.0
LIABILITIES, REDEEMABLE NONCONTROLLING INTERESTS AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term debt	\$ 18.7	\$ 112.4
Accounts payable	178.4	147.4
Customer advances	218.0	197.5
Other current liabilities	499.2	481.2
Total current liabilities	914.3	938.5
Long-term debt	1,200.5	1,221.8
Long-term deferred revenue	56.2	50.2
Deferred tax liabilities	62.3	46.0
Operating lease liabilities	34.8	41.8
Accrued pension	45.7	104.7
Other long-term liabilities	166.2	162.2
Commitments and contingencies (Note 17)		
Redeemable noncontrolling interests	6.1	0.2
Shareholders' equity:		
Preferred stock, \$0.01 par value 5,000,000 shares authorized, none issued or outstanding at December 31, 2022 and 2021	—	—
Common stock, \$0.01 par value 260,000,000 shares authorized, 175,389,586 and 174,905,035 shares issued and 147,023,144 and 150,753,687 outstanding at December 31, 2022 and 2021, respectively	1.7	1.7
Treasury stock at cost, 28,366,442 and 24,151,348 shares at December 31, 2022 and 2021, respectively	(1,085.0)	(820.3)
Additional paid-in capital	256.3	237.8
Retained earnings	1,926.0	1,659.5
Accumulated other comprehensive income (loss), net of tax	14.8	(8.2)
Total shareholders' equity attributable to Bruker Corporation	1,113.8	1,070.5
Noncontrolling interests in consolidated subsidiaries	11.9	14.1
Total shareholders' equity	1,125.7	1,084.6
Total liabilities, redeemable noncontrolling interests and shareholders' equity	\$ 3,611.8	\$ 3,650.0

The accompanying notes are an integral part of these consolidated financial statements.

BRUKER CORPORATION
CONSOLIDATED STATEMENTS OF INCOME AND COMPREHENSIVE INCOME
(in millions, except per share data)

	Year Ended December 31,		
	2022	2021	2020
Product revenue	\$ 2,109.9	\$ 2,017.3	\$ 1,638.1
Service revenue	414.6	393.2	343.4
Other revenue	6.2	7.4	6.0
Total revenue	2,530.7	2,417.9	1,987.5
Cost of product revenue	984.0	979.3	840.2
Cost of service revenue	240.8	228.2	206.5
Cost of other revenue	0.2	0.8	1.0
Total cost of revenue	1,225.0	1,208.3	1,047.7
Gross profit	1,305.7	1,209.6	939.8
Operating expenses:			
Selling, general and administrative	607.4	561.2	468.6
Research and development	235.9	220.8	198.0
Other charges, net	29.7	14.3	24.9
Total operating expenses	873.0	796.3	691.5
Operating income	432.7	413.3	248.3
Interest and other income (expense), net	(18.8)	(19.7)	(22.5)
Income before income taxes, equity in income of unconsolidated investees, net of tax, and noncontrolling interests in consolidated subsidiaries	413.9	393.6	225.8
Income tax provision	116.4	113.0	64.4
Equity in income of unconsolidated investees, net of tax	1.0	—	—
Consolidated net income	298.5	280.6	161.4
Net income attributable to noncontrolling interests in consolidated subsidiaries	1.9	3.5	3.6
Net income attributable to Bruker Corporation	\$ 296.6	\$ 277.1	\$ 157.8
Net income per common share attributable to Bruker Corporation shareholders:			
Basic	\$ 2.00	\$ 1.83	\$ 1.03
Diluted	\$ 1.99	\$ 1.81	\$ 1.02
Weighted average common shares outstanding:			
Basic	148.6	151.4	153.4
Diluted	149.4	152.9	154.6
Consolidated net income	\$ 298.5	\$ 280.6	\$ 161.4
Foreign currency translation adjustments (net of tax of \$1.4, \$2.1 and \$1.2, respectively)	(67.4)	(77.8)	97.4
Derivatives designated as hedging instruments (net of tax of (\$13.8), \$12.5, respectively)	44.2	51.4	(75.8)
Pension liability adjustments (net of tax of (\$11.8), (\$3.9) and (\$1.7), respectively)	45.0	14.5	7.5
Comprehensive income	320.3	268.7	190.5
Less: Comprehensive income attributable to noncontrolling interests	1.6	1.0	4.0
Less: Comprehensive loss attributable to redeemable noncontrolling interests	(0.9)	(0.1)	(0.5)
Comprehensive income attributable to Bruker Corporation	\$ 319.6	\$ 267.8	\$ 187.0

The accompanying notes are an integral part of these consolidated financial statements.

BRUKER CORPORATION
CONSOLIDATED STATEMENTS OF REDEEMABLE NONCONTROLLING INTERESTS AND SHAREHOLDERS' EQUITY
(in millions, except share data)

	Redeemable Noncontrolling Interests	Common Shares	Common Stock Amount	Treasury Shares	Treasury Stock Amount	Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive (Loss) Income	Total Shareholder s' Equity Attributable to Bruker Corporation	Noncontrolling Interests in Consolidated Subsidiaries	Total Shareholders' Equity
Balance at December 31, 2019	\$ 21.1	154,155,798	\$ 1.7	19,346,577	\$ (543.8)	\$ 199.7	\$ 1,274.7	\$ (25.5)	\$ 906.8	\$ 10.3	\$ 917.1
Stock options exercised	—	241,915	—	—	—	4.9	—	—	4.9	—	4.9
Restricted stock units vested	—	301,320	—	—	—	(1.6)	—	—	(1.6)	—	(1.6)
Stock-based compensation	—	—	—	—	—	13.3	—	—	13.3	—	13.3
Shares repurchased	—	(2,711,952)	—	2,711,952	(123.2)	—	—	—	(123.2)	—	(123.2)
Distributions to noncontrolling interests	—	—	—	—	—	—	—	—	—	(1.2)	(1.2)
Acquired remaining 20% interest in Hain LifeScience GmbH	(20.6)	—	—	—	—	—	(1.3)	—	(1.3)	—	(1.3)
Cash dividends paid to common shareholders (\$0.16 per share)	—	—	—	—	—	—	(24.7)	—	(24.7)	—	(24.7)
Consolidated net income	—	—	—	—	—	—	157.8	—	157.8	3.6	161.4
Other comprehensive (loss) income	(0.5)	—	—	—	—	—	—	29.2	29.2	0.4	29.6
Balance at December 31, 2020	\$ —	151,987,081	\$ 1.7	22,058,529	\$ (667.0)	\$ 216.3	\$ 1,406.5	\$ 3.7	\$ 961.2	\$ 13.1	\$ 974.3
Stock options exercised	—	580,656	—	—	—	11.7	—	—	11.7	—	11.7
Restricted stock units vested	—	278,769	—	—	—	(4.7)	—	—	(4.7)	—	(4.7)
Stock-based compensation	—	—	—	—	—	14.5	—	—	14.5	—	14.5
Shares repurchased	—	(2,092,819)	—	2,092,819	(153.3)	—	—	—	(153.3)	—	(153.3)
Cash dividends paid to common shareholders (\$0.16 per share)	—	—	—	—	—	—	(24.1)	—	(24.1)	—	(24.1)
Formation of Acuity Spatial Genomics, Inc.	0.3	—	—	—	—	—	—	—	—	—	—
Consolidated net (loss) income	(0.1)	—	—	—	—	—	277.1	—	277.1	3.6	280.7
Other comprehensive loss	—	—	—	—	—	—	—	(11.9)	(11.9)	(2.6)	(14.5)
Balance at December 31, 2021	\$ 0.2	150,753,687	\$ 1.7	24,151,348	\$ (820.3)	\$ 237.8	\$ 1,659.5	\$ (8.2)	\$ 1,070.5	\$ 14.1	\$ 1,084.6
Stock options exercised	—	251,006	—	—	—	5.8	—	—	5.8	—	5.8
Restricted stock units vested	—	233,545	—	—	—	(3.0)	—	—	(3.0)	—	(3.0)
Stock-based compensation	—	—	—	—	—	15.7	—	—	15.7	—	15.7
Shares repurchased	—	(4,215,094)	—	4,215,094	(264.7)	—	—	—	(264.7)	—	(264.7)
Distributions to noncontrolling interests	—	—	—	—	—	—	—	—	—	(1.2)	(1.2)
Cash dividends paid to common shareholders (\$0.20 per share)	—	—	—	—	—	—	(29.8)	—	(29.8)	—	(29.8)
Consolidated net (loss) income	(0.6)	—	—	—	—	—	296.6	—	296.6	2.5	299.1
PreOmics Acquisition - other shareholders	6.8	—	—	—	—	—	—	—	—	—	—
Acquisition of minority interest	—	—	—	—	—	—	(0.3)	(0.2)	(0.5)	(2.6)	(3.1)
Other comprehensive (loss) income	(0.3)	—	—	—	—	—	—	23.2	23.2	(0.9)	22.3
Balance at December 31, 2022	\$ 6.1	147,023,144	\$ 1.7	28,366,442	\$ (1,085.0)	\$ 256.3	\$ 1,926.0	\$ 14.8	\$ 1,113.8	\$ 11.9	\$ 1,125.7

The accompanying notes are an integral part of these consolidated financial statements.

BRUKER CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in millions)

	Year Ended December 31,		
	2022	2021	2020
Cash flows from operating activities:			
Consolidated net income	\$ 298.5	\$ 280.6	\$ 161.4
Adjustments to reconcile consolidated net income to cash flows from operating activities:			
Depreciation and amortization	88.8	89.1	80.4
Stock-based compensation expense	27.7	17.2	16.0
Deferred income taxes	(14.8)	(5.8)	(22.5)
Other non-cash expenses, net	18.3	26.9	27.3
Changes in operating assets and liabilities, net of acquisitions:			
Accounts receivable	(67.9)	(95.3)	40.8
Inventories	(137.9)	(67.0)	(91.6)
Accounts payable and accrued expenses	13.2	61.4	(2.4)
Income taxes payable	(6.8)	(44.3)	42.9
Deferred revenue	24.4	20.3	16.9
Customer advances	28.3	18.5	51.7
Other changes in operating assets and liabilities	2.6	(19.2)	11.3
Net cash provided by operating activities	274.4	282.4	332.2
Cash flows from investing activities:			
Purchases of short-term investments	—	(148.0)	(150.0)
Maturity of short-term investments	100.0	98.2	106.1
Cash paid for strategic investments	(60.2)	(0.5)	(1.2)
Cash paid for acquisitions, net of cash acquired	(182.3)	(65.0)	(59.2)
Purchases of property, plant and equipment	(129.2)	(92.0)	(97.2)
Proceeds from sales of property, plant and equipment	13.9	4.9	0.2
Net proceeds from cross-currency swap agreements	6.2	10.0	8.6
Net cash used in investing activities	(251.6)	(192.4)	(192.7)
Cash flows from financing activities:			
Proceeds from issuance of long-term debt	—	492.8	—
Repayment of 2012 Note Purchase Agreement	(105.0)	—	—
Repayment of 2019 Note Purchase Agreement	(6.0)	(0.8)	—
Repayments of revolving lines of credit	—	—	(305.1)
Proceeds from revolving lines of credit	—	—	297.5
Proceeds (repayment) of other debt, net	0.3	(2.3)	(0.7)
Payment of deferred financing costs	—	(0.1)	(0.1)
Proceeds from issuance of common stock, net	2.8	7.0	3.3
Payment of contingent consideration	(2.7)	(0.4)	(7.5)
Payment of dividends to common shareholders	(29.8)	(24.2)	(24.6)
Repurchase of common stock	(263.1)	(153.3)	(123.2)
Purchase of minority interest	(11.8)	—	(1.2)
Net cash (used in) provided by financing activities	(415.3)	318.7	(161.6)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(30.5)	(22.5)	25.7
Net change in cash, cash equivalents and restricted cash	(423.0)	386.2	3.6
Cash, cash equivalents and restricted cash at beginning of year	1,071.7	685.5	681.9
Cash, cash equivalents and restricted cash at end of year	\$ 648.7	\$ 1,071.7	\$ 685.5
Supplemental cash flow information:			
Cash paid for interest	\$ 24.3	\$ 19.6	\$ 28.7
Cash paid for taxes	\$ 147.4	\$ 145.5	\$ 43.0
Restricted cash period beginning balance	\$ 3.5	\$ 3.7	\$ 3.6
Restricted cash period ending balance	\$ 3.2	\$ 3.5	\$ 3.7

The accompanying notes are an integral part of these consolidated financial statements.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Description of Business

Bruker Corporation, together with its consolidated subsidiaries (Bruker or the Company), develops, manufactures and distributes high-performance scientific instruments and analytical and diagnostic solutions that enable its customers to explore life and materials at microscopic, molecular and cellular levels. Many of the Company's products are used to detect, measure and visualize structural characteristics of chemical, biological and industrial material samples. The Company's products address the rapidly evolving needs of a diverse array of customers in life science research, pharmaceuticals, biotechnology, applied markets, cell biology, clinical research, microbiology, in-vitro diagnostics, nanotechnology and materials science research.

The Company has four reportable segments, Bruker Scientific Instruments (BSI) BioSpin, BSI CALID, BSI Nano and Bruker Energy & Supercon Technologies (BEST).

BSI BioSpin - The BSI BioSpin Segment designs, manufactures and distributes enabling life science tools based on magnetic resonance technology. BioSpin Segment's revenues are generated by academic and government research customers, pharmaceutical and biotechnology companies and nonprofit laboratories, as well as chemical, food and beverage, clinical and other industrial companies.

BSI CALID (Chemicals, Applied Markets, Life Science, In-Vitro Diagnostics, Detection) - The BSI CALID Segment designs, manufactures and distributes life science mass spectrometry and ion mobility spectrometry solutions, analytical and process analysis instruments and solutions based on infrared and Raman molecular spectroscopy technologies and radiological/nuclear detectors for Chemical, Biological, Radiological, Nuclear and Explosive (CBRNE) detection. Customers of the BSI CALID Segment include academic institutions and medical schools; pharmaceutical, biotechnology and diagnostics companies; contract research organizations; nonprofit and for-profit forensics laboratories; agriculture, food and beverage safety laboratories; environmental and clinical microbiology laboratories; hospitals and government departments and agencies.

BSI Nano Segment designs, manufactures and distributes advanced X-ray instruments; atomic force microscopy instrumentation; advanced fluorescence optical microscopy instruments; analytical tools for electron microscopes and X-ray metrology; defect-detection equipment for semiconductor process control; handheld, portable and mobile X-ray fluorescence spectrometry instruments; spark optical emission spectroscopy systems; Chipcymetry products and services for targeted spatial proteomics, multi-omic services, and products and services for spatial genomics research. Customers of the BSI Nano Segment include academic institutions, governmental customers, nanotechnology companies, semiconductor companies, raw material manufacturers, industrial companies, biotechnology and pharmaceutical companies and other businesses involved in materials research and life science research analysis.

BEST reportable segment develops and manufactures superconducting and non-superconducting materials and devices for use in renewable energy, energy infrastructure, healthcare and "big science" research. The segment focuses on metallic low temperature superconductors for use in magnetic resonance imaging, nuclear magnetic resonance, fusion energy research and other applications.

2. Summary of Significant Accounting Policies

Principles of Consolidation

The accompanying consolidated financial statements include the accounts of the Company and all majority and wholly owned subsidiaries. All intercompany accounts and transactions have been eliminated.

Noncontrolling Interests

Noncontrolling interests represents the minority shareholders' proportionate share of the Company's majority-owned subsidiaries. The portion of net income or net loss attributable to non-controlling interests is presented as net income attributable to noncontrolling interests in consolidated subsidiaries in the consolidated statements of income and comprehensive income, and the portion of other comprehensive income of these subsidiaries is presented in the consolidated statements of shareholders' equity.

Redeemable Noncontrolling Interests

The Company has agreements with noncontrolling interest holders that provide the Company with the right to purchase, and the noncontrolling interest holders with the right to sell, their remaining minority interest at a contractually defined redemption value. These rights can be accelerated in certain events. As the redemptions are contingently redeemable at the option of the noncontrolling interest shareholders, the Company classifies the carrying amount of the redeemable noncontrolling interest in the mezzanine section on the consolidated balance sheet, which is presented above the equity section and below liabilities. The redeemable noncontrolling interests are measured at the greater of the amount that would be paid if settlement occurred as of the balance sheet date based on the

contractually defined redemption value and its carrying amount adjusted for net income (loss) attributable to the noncontrolling interest. Adjustments to the carrying value of the redeemable noncontrolling interest are recorded through retained earnings. During the years ended December 31, 2022, 2021 and 2020, carrying value adjustments were immaterial.

Business Combinations

The Company accounts for business combinations under the acquisition method of accounting. Accordingly, at the date of each acquisition, the Company measures the fair value of all identifiable assets acquired (including intangible assets), liabilities assumed and any remaining noncontrolling interests and allocates the amounts paid to all items measured. The fair value of identifiable intangible assets acquired is based on valuations that use information and assumptions determined by management and which consider management's best estimates of inputs and assumptions that a market participant would use.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and reported amounts of revenues and expenses during the reporting period.

Significant estimates and judgments made by management in preparing these financial statements include revenue recognition, allowances for doubtful accounts, write-downs for excess and obsolete inventory, estimated fair values used to record impairment charges related to intangible assets, goodwill, and other long-lived assets, amortization periods, expected future cash flows used to evaluate the recoverability of long-lived assets and to record intangible assets in business combinations, stock-based compensation expense, warranty allowances, restructuring and other related charges, contingent liabilities and the recoverability of the Company's net deferred tax assets.

Changes in estimates are recorded in the period in which they become known. The Company bases its estimates on historical experience and various other assumptions that it believes to be reasonable under the circumstances. Actual results may differ from management's estimates if these results differ from historical experience or other assumptions prove not to be substantially accurate, even if such assumptions were reasonable when made.

Subsequent Events Considerations

The Company considers events or transactions that occur after the balance sheet date but prior to the issuance of the financial statements to provide additional evidence for certain estimates or to identify matters that require additional disclosure. Subsequent events have been evaluated as required. The Company has evaluated all subsequent events and determined that, other than as reported herein, there are no material recognized or unrecognized subsequent events.

Cash and Cash Equivalents

Cash and cash equivalents primarily include cash on hand, money market funds and time deposits with original maturities of three months or less at the date of acquisition. Time deposits represent amounts on deposit in banks and temporarily invested in instruments with maturities of three months or less at the time of purchase. Certain of these investments represent deposits which are not insured by the Federal Deposit Insurance Corporation or any other government agency. Cash equivalents are carried at cost, which approximates fair value.

Short-term Investments

Short-term investments represent time and call deposits maturing within twelve months and with original maturities of greater than three months at the date of acquisition. Short-term investments are classified as available-for-sale and are reported at fair value. There were no unrealized gains (losses) recorded as of December 31, 2022, 2021 and 2020, as cost approximates current fair value.

Restricted Cash

Restricted cash is included as a component of cash, cash equivalents, and restricted cash on the Company's consolidated statement of cash flows. The Company has certain subsidiaries that are required by local laws and regulations to maintain restricted cash balances to cover future employee benefit payments. Restricted cash balances are classified as non-current unless, under the terms of the applicable agreements, the funds will be released from restrictions within one year from the balance sheet date. The

current and non-current portion of restricted cash is recorded within other current assets and other long-term assets, respectively, in the accompanying consolidated balance sheets.

Accounts Receivable, net

Accounts receivable have been reduced by an allowance for doubtful accounts. The allowance for doubtful accounts represents the Company's best estimate of the amount of probable credit losses in our accounts receivable. The Company's allowance is based on a number of factors, including an evaluation of customer credit worthiness, the age of the outstanding receivable, economic trends and historical experience. Provisions for doubtful accounts are recorded in selling, general and administrative expenses in the accompanying consolidated statements of income and comprehensive income.

Derivative Financial Instruments and Hedging Activities

All derivatives, whether designated in a hedging relationship or not, are recorded on the consolidated balance sheets at fair value. The accounting for changes in fair value of a derivative instrument depends on whether it has been designated and qualifies as part of a hedging relationship and further, on the type of hedging relationship. For those derivative instruments that are designated and qualify as hedging instruments, the Company must designate the hedging instrument, based on the exposure being hedged, as a fair value hedge, cash flow hedge, foreign currency hedge or a hedge of a net investment in a foreign operation. If a derivative is designated as a hedge, depending on the nature of the hedge, changes in the fair value of the derivative are either offset against the change in fair value of the hedged item through earnings or recognized in other comprehensive income until the hedged item is recognized in earnings. Derivatives that are not designated as hedges are recorded at fair value through earnings. The Company presents the cross-currency swap periodic settlements in investing activities and the interest rate swap periodic settlements in operating activities in the consolidated statements of cash flows. The Company records derivative assets and liabilities on a gross basis in the consolidated balance sheets.

Fair Value of Financial Instruments

The Company applies the following hierarchy to determine the fair value of financial instruments, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement. The levels in the hierarchy are defined as follows:

- *Level 1:* Inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.
- *Level 2:* Inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.
- *Level 3:* Inputs to the valuation methodology are unobservable and significant to the fair value measurement.

The valuation techniques that may be used by the Company to determine the fair value of Level 2 and Level 3 financial instruments are the market approach, the income approach and the cost approach. The market approach uses prices and other relevant information generated by market transactions involving identical or comparable assets or liabilities. The income approach uses valuation techniques to convert future amounts to a single present value based on current market expectations about those future amounts, including present value techniques, option-pricing models and the excess earnings method. The cost approach is based on the amount that would be required to replace the service capacity of an asset (replacement cost).

The Company's financial instruments consist primarily of cash equivalents, short-term investments, restricted cash, derivative instruments consisting of forward foreign exchange contracts, cross-currency interest rate swap agreements, commodity contracts, derivatives embedded in certain purchase and sale contracts, derivatives embedded within noncontrolling interests, accounts receivable, accounts payable, contingent consideration and long-term debt. The carrying amounts of the Company's cash equivalents, short-term investments and restricted cash, accounts receivable, borrowings under a revolving credit agreement and accounts payable approximate fair value because of their short-term nature. Derivative assets and liabilities are measured at fair value on a recurring basis.

The Company has evaluated the estimated fair value of financial instruments using available market information and management's estimates. The use of different market assumptions and/or estimation methodologies could have a significant effect on the estimated fair value amounts.

Concentration of Credit Risk

Financial instruments that subject the Company to credit risk consist of cash, cash equivalents, short-term investments, derivative instruments, accounts receivables and restricted cash. The risk with respect to cash, cash equivalents and short-term investments is minimized by the Company's policy of investing in short-term financial instruments issued by highly rated financial institutions. The risk with respect to derivative instruments is minimized by the Company's policy of entering into arrangements with highly rated financial institutions. The risk with respect to accounts receivables is minimized by the creditworthiness and diversity of the Company's customers. The Company performs periodic credit evaluations of its customers' financial condition and generally requires an advanced deposit for a portion of the purchase price. Credit losses have been within management's expectations and the allowance for doubtful accounts totaled \$5.3 million and \$4.2 million at December 31, 2022 and 2021, respectively. At December 31, 2022 and 2021, no single customer represented 10% or more of the Company's accounts receivable. For the years ended December 31, 2022, 2021 and 2020, no single customer represented 10% or more of the Company's total revenue.

Inventories

Components of inventory include raw materials, work-in-process, demonstration units and finished goods. Demonstration units include systems which are located in the Company's demonstration laboratories or installed at the sites of potential customers and are considered available for sale. Finished goods include in-transit systems that have been shipped to the Company's customers, but not yet installed and accepted by the customer. All inventories are stated at the lower of cost and net realizable value. Cost is determined principally by the first-in, first-out method for a majority of subsidiaries and by average-cost for certain other subsidiaries. The Company reduces the carrying value of its inventories for differences between cost and estimated net realizable value, taking into consideration usage in the preceding twelve months, expected demand, technological obsolescence and other information including the physical condition of demonstration inventories. The Company records a charge to cost of product revenue for the amount required to reduce the carrying value of inventory to net realizable value. Costs associated with the procurement of inventories, such as inbound freight charges and purchasing and receiving costs, are capitalized as part of inventory and are also included in the cost of product revenue line item within the consolidated statements of income and comprehensive income.

Property, Plant and Equipment

Property, plant and equipment are stated at cost less accumulated depreciation and amortization. Major improvements that extend the useful lives are capitalized while expenditures for maintenance, repairs and minor improvements are charged to expense as incurred. When assets are retired or otherwise disposed of, the assets and related accumulated depreciation and amortization are eliminated from the accounts and any resulting gain or loss is reflected in the consolidated statements of income and comprehensive income. Depreciation and amortization are calculated on a straight-line basis over the estimated useful lives of the assets as follows:

	Estimated Useful Life
Buildings	25 to 40 years
Machinery and equipment	3 to 10 years
Computer and fixtures	3 to 5 years
Furniture and fixtures	3 to 10 years
Leasehold improvements	Lesser of 15 years or the remaining lease term

Goodwill and Intangible Assets

Goodwill and indefinite-lived intangible assets are not amortized, but are evaluated for impairment on an annual basis, or on an interim basis when events or changes in circumstances indicate that the carrying value may not be recoverable. In assessing the recoverability of goodwill and indefinite-lived intangible assets, the Company must make assumptions regarding the estimated future cash flows, including forecasted revenue growth, to determine the fair value of these assets. If these estimates or their related assumptions change in the future, the Company may be required to record impairment charges against these assets in the reporting period in which the impairment is determined.

The Company tests goodwill for impairment at the reporting unit level, which is the operating segment or one level below an operating segment. The Company has the option of performing a qualitative assessment to determine whether further impairment testing is necessary before performing the quantitative assessment. If as a result of the qualitative assessment, it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, a quantitative impairment test will be required. Otherwise, no further testing will be required. If a quantitative impairment test is performed, the Company compares the fair values of the applicable reporting units with their aggregate carrying values, including goodwill. The Company determines the fair value of reporting units using a weighting of both the market and the income methodologies. Estimating the fair value of the reporting units requires significant judgment by management. If the carrying amount of a reporting unit exceeds the fair value of the reporting unit, an

impairment charge is recognized for the amount by which the carrying value amount exceeds the reporting unit's fair value up to the total amount of goodwill allocated to the reporting unit.

In process research and development, or IPR&D, acquired as part of business combinations under the acquisition method represents ongoing development work associated with enhancements to existing products, as well as the development of next generation products. IPR&D is initially capitalized at fair value as an intangible asset with an indefinite life and assessed for impairment on an annual basis, or when indicators of impairment are identified. When the IPR&D project is complete, it is reclassified as a finite-lived intangible asset and is amortized over its estimated useful life. If an IPR&D project is abandoned before completion or is otherwise determined to be impaired, the value of the asset or the amount of the impairment is charged to the consolidated statements of income and comprehensive income in the period the project is abandoned or impaired.

Intangible assets with a finite useful life are amortized on a straight-line basis over their estimated useful lives as follows:

	Estimated Useful Life
Existing technology and related patents	3 to 15 years
Customer relationships	5 to 15 years
Trade names	5 to 15 years

Impairment of Long-Lived Assets

Impairment losses are recorded on long-lived assets used in operations when indicators of impairment are present and the quoted market price, if available or the estimated fair value of those assets are less than the assets' carrying value and are not recoverable. Determination of recoverability is based on an estimate of undiscounted future cash flows resulting from the use of the asset and its eventual disposition. In the event that such cash flows are not expected to be sufficient to recover the carrying amount of the assets, the assets are written down to their fair values. Impairment losses are charged to the consolidated statements of income and comprehensive income for the difference between the fair value and carrying value of the asset.

Warranty Costs and Deferred Revenue

The Company typically provides a one-year parts and labor warranty with the purchase of equipment. The anticipated cost for this warranty is accrued upon recognition of the sale and is included as a current liability on the accompanying consolidated balance sheets. The Company's warranty reserve reflects estimated material and labor costs for potential product issues for which the Company expects to incur an obligation. The Company's estimates of anticipated rates of warranty claims and costs are primarily based on historical information. The Company assesses the adequacy of the warranty reserve on a quarterly basis and adjusts the amount as necessary. If the historical data used to calculate the adequacy of the warranty reserve is not indicative of future requirements, additional or reduced warranty reserves may be required.

The Company also offers to its customers extended warranty and service agreements extending beyond the initial warranty for a fee. These fees are recorded as deferred revenue and recognized ratably into income over the life of the extended warranty contract or service agreement.

Income Taxes

Deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between the financial statement carrying amounts and the income tax basis of assets and liabilities. A valuation allowance is applied against any net deferred tax asset if, based on the available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

The Company records liabilities related to uncertain tax positions in accordance with the guidance that clarifies the accounting for uncertainty in income taxes recognized in a Company's financial statements. This guidance prescribes a minimum recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. The Company includes accrued interest and penalties related to unrecognized tax benefits and income tax liabilities, when applicable, in income tax provision.

Customer Advances

The Company typically requires an advance deposit under the terms and conditions of contracts with customers. These deposits are recorded as a current or long-term liability until revenue is recognized on the specific contract in accordance with the Company's revenue recognition policy.

Revenue Recognition

The Company recognizes revenue in accordance with Accounting Standards Codification (“ASC”) 606, *Revenue from Contracts with Customers*. The key elements of ASC 606 are: 1) identifying a contract with the customer; 2) identifying the performance obligations in the contract; 3) determining the transaction price; 4) allocating the transaction price to the performance obligations in the contract; and 5) recognizing revenue when (or as) each performance obligation is satisfied.

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer. A contract’s transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. Some of the Company’s contracts have multiple performance obligations, most commonly due to providing additional goods or services along with a system, such as installation, accessories, parts and services. For contracts with multiple performance obligations, the Company allocates the contract’s transaction price to each performance obligation using the best estimate of the standalone selling price of each distinct good or service being provided to the customer. The Company’s best evidence of standalone selling price is its normal selling pricing and discounting practices for the specific product or service when sold on a standalone basis. Alternatively, when not sold separately, the Company may determine standalone selling price using an expected cost plus a margin approach.

The Company’s performance obligations are typically satisfied at a point in time, most commonly either on shipment, or customer acceptance. Certain performance obligations, such as maintenance contracts and extended warranty, are recognized over time based on the contractual obligation period. In addition, certain arrangements to provide more customized deliverables may be satisfied over time based on the extent of progress towards completion. For performance obligations recognized over time, revenue is measured by progress toward completion of the performance obligation that reflects the transfer of control. Typically, progress is measured using a cost-to-cost method based on cost incurred to date relative to total estimated costs upon completion as this best depicts the transfer of control to the customer. Application of the cost-to-cost method requires the Company to make reasonable estimates of the extent of progress toward completion and the total costs the Company expects to incur. Losses are recorded immediately when the Company estimates that contracts will ultimately result in a loss. Changes in the estimates could affect the timing of revenue recognition.

The Company includes costs incurred in connection with shipping and handling of products within selling, general and administrative costs. Amounts billed to customers in connection with these costs are included in total revenues. When control of the goods transfers prior to the completion of the Company’s obligation to ship the products to its customers, the Company has elected the practical expedient to account for the shipping services as a fulfillment cost. The Company expenses incremental costs of obtaining a contract as and when incurred if the expected amortization period is one year or less or the amount is immaterial. The Company excludes from the transaction price all taxes assessed by a governmental authority on revenue-producing transactions that are collected by the Company from a customer.

The Company recognizes revenue from systems sales upon transfer of control in an amount that reflects the consideration it expects to receive. Transfer of control generally occurs upon shipment, or for certain systems, based upon customer acceptance for a system once delivered and installed at a customer facility. For systems that include customer-specific acceptance criteria, the Company is required to assess when it can demonstrate the acceptance criteria has been met, which generally is upon successful factory acceptance testing or customer acceptance and evidence of installation. For systems that require installation and where system revenue is recognized upon shipment, the standalone selling price of installation is deferred until customer acceptance. Revenue from accessories and parts is generally recognized based on shipment. Service revenue is recognized as the services are performed or ratably over the contractual obligation and includes maintenance contracts, extended warranties, training, application support and on-demand services.

When products are sold through an independent distributor or a strategic distribution partner, the Company recognizes the system sale upon transfer of control which is typically on shipment. When the Company is responsible for installation, the standalone selling price of installation is deferred until customer acceptance. The Company’s distributors do not have price protection rights or rights of return; however, the Company’s products are typically warranted to be free from defect for a period of one year.

The Company requires an advance deposit based on the terms and conditions of contracts with customers for many of its contracts. Typically, revenue is recognized within one year of receiving an advance deposit. The Company does not have any material payment terms that extend beyond one year. There is minimal variable consideration included in the transaction price of the Company’s contracts.

Other revenues are primarily comprised of development arrangements recognized on a cost-plus-fixed-fee basis and licensing arrangements recognized either when the licenses are provided or ratably over the contract term depending on the nature of the arrangement.

Contract Assets and Liabilities

Contract assets represent unbilled receivables when revenue recognized exceeds the amount billed to the customer, and the right to payment is not just subject to the passage of time. Contract assets typically result from system revenue recorded where a portion of the transaction price is not billable until a future event, such as customer acceptance, or from contracts recognized on a cost-to-cost or cost-plus-fixed-fee basis as revenue exceeds the amount billed to the customer. Amounts may not exceed their net realizable value. Contract assets are generally classified as current.

Contract liabilities consist of customer advances, deferred revenue and billings in excess of revenue from contracts recognized on a cost-to-cost or cost-plus-fixed-fee basis. Contract liabilities are classified as current or long-term based on the timing of when the Company expects to recognize revenue. Contract assets and liabilities are reported in a net position on a contract-by-contract basis at the end of each reporting period.

Leases

The Company accounts for leases in accordance with ASC 842, *Leases*. At the inception of an arrangement, the Company determines whether the arrangement is or contains a lease based on the unique facts and circumstances present. Leases with a term greater than 12 months are recognized on the balance sheet as Right-of-use (“ROU”) assets with a corresponding lease liability. The Company has elected not to recognize on the consolidated balance sheets leases with an initial term of 12 months or less. Leases with an initial term of 12 months or less are directly expensed as incurred. Leases are classified as either operating or finance depending on the specific terms of the arrangement.

The Company’s leases mainly consist of facilities, office equipment, and vehicles. The majority of leases are classified as operating. The remaining lease term ranges from 2023 to 2039, with some leases including an option to extend the lease for varying periods of time or to terminate prior to the end of the lease term. Certain lease agreements contain provisions for future rent increases. Lease payments included in the measurement of the lease liability comprise fixed payments, future rent increases tied to an index or rate, and the exercise price of a Company option to purchase the underlying asset if the Company is reasonably certain to exercise the option. Future rent increases dependent on an index or rate are initially measured at the index or rate at the commencement date. The Company’s leases typically do not contain residual value guarantees.

At the commencement date, operating and finance lease liabilities, and their corresponding ROU assets, are recorded based on the present value of lease payments over the expected lease term. The lease term includes the non-cancelable period of the lease, plus any additional periods covered by either a Company option to extend (or not to terminate) the lease that the Company is reasonably certain to exercise, or an option to extend (or not to terminate) the lease controlled by the lessor. The interest rate implicit in lease contracts is typically not readily determinable, therefore an incremental borrowing rate is used to calculate the lease liability. The incremental borrowing rate is the rate incurred to borrow on a collateralized basis over a similar term an amount equal to the lease payments in a similar economic environment. Certain adjustments to the ROU asset may be required for items such as prepayments, lease incentives received or initial direct costs paid.

Shipping and Handling Costs

The Company includes costs incurred in connection with shipping and handling of products within selling, general and administrative expenses in the accompanying consolidated statements of income and comprehensive income. Shipping and handling costs were \$39.4 million, \$36.3 million and \$28.3 million in the years ended December 31, 2022, 2021 and 2020, respectively. Amounts billed to customers in connection with these costs are included in total revenues.

Research and Development

The Company commits substantial capital and resources to internal and collaborative research and development projects in order to provide innovative products and solutions to its customers. The Company conducts research primarily to enhance system performance and improve the reliability of existing products, and to develop revolutionary new products and solutions. Research and development costs are expensed as incurred and include salaries, wages and other personnel related costs, material costs and depreciation, consulting costs and facility costs.

Capitalized Software

Purchased software is capitalized at cost and is amortized over the estimated useful life, which is generally three years. Software developed for use in the Company’s products is expensed as incurred to research and development expense until technological feasibility is achieved. Subsequent to the achievement of technological feasibility, amounts are capitalizable; however, to date such amounts have not been material.

Advertising

The Company expenses advertising costs as incurred. Advertising expenses were \$19.3 million, \$13.8 million and \$9.7 million during the years ended December 31, 2022, 2021 and 2020, respectively.

Stock-Based Compensation

The Company recognizes stock-based compensation expense in the consolidated statements of income and comprehensive income based on the fair value of the share-based award at the grant date. The Company's primary types of share-based compensation are stock options, restricted stock awards and restricted stock units.

Compensation expense is amortized on a straight-line basis over the underlying vesting terms of the share-based award. Stock options to purchase the Company's common stock are periodically awarded to executive officers and other employees of the Company subject to a vesting period of three to four years. The fair value of each option award is estimated on the date of grant using the Black-Scholes option-pricing model.

The determination of the fair value of stock-based payment awards using the Black-Scholes model is affected by our stock price and a number of assumptions, including expected volatility, expected life, risk-free interest rates and expected dividends. Risk-free interest rates are based on the yield on zero-coupon U.S. Treasury securities for a period that is commensurate with the expected life assumption. Expected life is determined through a calculation based on historical experience. Expected volatility is based the Company's historical volatility results. Expected dividend yield is based on the estimated annualized dividend yield on our stock based on our history of paying dividends. The Company utilizes an estimated forfeiture rate derived from an analysis of historical data.

Assumptions regarding volatility, expected term, dividend yield and risk-free interest rates are required for the Black-Scholes model and are presented in the table below:

	2022	2021	2020
Risk-free interest rates	3.03 %	0.62 %	0.23 %
Expected life	4.4 years	4.4 years	5.1 years
Volatility	36 %	34 %	34 %
Expected dividend yield	0.32 %	0.20 %	0.37 %
Weighted-average fair value per share	\$ 19.68	\$ 21.69	\$ 12.08

Stock-based compensation for restricted stock awards and restricted stock units is expensed ratably over the vesting period based on the grant date fair value.

Earnings Per Share

Net income per common share attributable to Bruker Corporation shareholders is calculated by dividing net income attributable to Bruker Corporation, adjusted to reflect changes in the redemption value of the redeemable noncontrolling interest, by the weighted-average shares outstanding during the period. The diluted net income per share computation includes the effect of shares which would be issuable upon the exercise of outstanding stock options and the vesting of restricted stock, reduced by the number of shares which are assumed to be purchased by the Company under the treasury stock method. There was no redemption value adjustment of the redeemable noncontrolling interest for the years ended December 31, 2022, 2021 and 2020.

Post Retirement Benefit Plans

The Company recognizes the over-funded or under-funded status of defined benefit pension and other post retirement defined benefit plans as an asset or liability, respectively, in its consolidated balance sheets and recognizes changes in the funded status in the year in which the changes occur through other comprehensive income.

Other Comprehensive Income (Loss)

Other comprehensive income (loss) refers to revenues, expenses, gains and losses that are excluded from net income as these amounts are recorded directly as an adjustment to shareholders' equity, net of tax. The Company's other comprehensive income (loss) was composed of foreign currency translation adjustments, derivatives designated as hedging instruments and pension liability adjustments.

Foreign Currency Translation

Assets and liabilities of the Company's foreign subsidiaries, where the functional currency is the local currency, are translated into U.S. Dollars using the current exchange rate as of the consolidated balance sheet date and shareholders' equity is translated using historical rates. Revenues and expenses of foreign subsidiaries are translated at the average exchange rates in effect during the year. Adjustments resulting from financial statement translations are included as a separate component of shareholders' equity. Gains and losses resulting from translation of foreign currency monetary transactions are reported in interest and other income (expense), net in the consolidated statements of income and comprehensive income for all periods presented. The Company has certain intercompany foreign currency transactions that are deemed to be of a long-term investment nature. Exchange adjustments related to those transactions are made directly to a separate component of shareholders' equity.

Risks and Uncertainties

The Company is subject to risks common to its industry including, but not limited to, global economic conditions, (including increasing inflation), rapid technological change, government and academic funding levels, the impact of the COVID-19 coronavirus, geopolitical uncertainties, changes in commodity prices, spending patterns of its customers, protection of its intellectual property, availability of key raw materials and components and other supply chain challenges, compliance with existing and future regulation by government agencies and fluctuations in foreign currency exchange rates and interest rates.

The impact of the COVID-19 worldwide pandemic has been and will likely continue to be extensive in certain geographies and aspects of society. The pandemic has resulted in and will likely continue to result in significant disruptions to the global economy, global supply chains, as well as businesses and capital markets around the world.

Impacts to the Company's business since the beginning of the pandemic have included temporary closures of many of the Company's government and university customers and suppliers, disruptions or restrictions on employees' and customers' ability to travel, and delays in product installations or shipments to and from affected countries. In an effort to halt the outbreak of COVID-19, a number of countries, including the United States, implemented and some continue to implement, significant restrictions on travel, shelter in place or stay at home orders, and business closures. While many of these restrictions have loosened in certain jurisdictions, including the United States and Europe, some markets have returned and others may return to restrictions in the face of increases in new COVID-19 cases, particularly if additional or more contagious variants or subvariants of the virus emerge or spread. Many of the Company's employees in jurisdictions in which it has significant operations continue to work remotely. Much of the commercial activity in sales and marketing, and customer demonstrations and applications training, is still either being conducted remotely or postponed. Even where customers have re-opened their sites, some still operate at productivity levels that are below pre-pandemic levels in an effort to accommodate safety protocols and as a result of pandemic-related supply chain disruptions. Any resurgence of the virus or the emergence of new variants or subvariants of the virus, particularly any variants or subvariants which are more easily transmitted or which are resistant to existing vaccines, may require the Company or its customers to close or partially close operations once again. These travel restrictions, business closures and operating reductions at Bruker, customers, distributors, and/or suppliers have in the past adversely impacted and may continue to adversely impact the Company's operations worldwide, including the ability to manufacture, sell or distribute products, as well as cause temporary closures of foreign distributors, or the facilities of suppliers or customers. Global supply chains, including for semiconductor chips, components and raw materials such as copper, have been disrupted, causing shortages, which has impacted the Company's ability to manufacture or supply its products. The Company could also experience increased compensation expenses associated with employee recruiting and employee retention to the extent that employment opportunities continue to multiply post-pandemic, causing the search for and retention of talent to become more competitive. This disruption of the Company's employees, distributors, suppliers and customers has impacted and is continuing to impact the Company's global sales and operating results.

Further, while the Company is not currently subject to any vaccine mandate, any requirement to mandate COVID-19 vaccination of its workforce or require the Company's unvaccinated employees to be tested weekly could result in employee attrition and difficulty securing future labor needs and may have an adverse effect on future operations. The Company's policy continues to encourage its employees to be fully vaccinated against COVID-19.

The Company is continuing to monitor and assess the effects of the COVID-19 pandemic on its commercial operations in 2023. However, the Company cannot at this time accurately predict what effects these conditions will ultimately have on future operations due to uncertainties relating to the duration of the outbreak, including the impact of any resurgence of the virus or the continued emergence or spread of certain variants or subvariants, the effectiveness and availability of vaccines, (including to protect against any new variants or subvariants), the willingness of individuals to receive vaccines and boosters, and the length or severity of the travel restrictions, business closures, and other safety and precautionary measures imposed by the governments of impacted countries. The pandemic has also adversely affected the economies and financial markets of many countries, which has affected and likely will continue to affect demand for the Company's products and its operating results.

The Company may experience supply chain interruptions as a result of the COVID-19 pandemic, general global economic conditions, including inflation and the threat of a potential recession, a tighter labor market and other factors including natural events and disasters. Various factors, including increased demand for certain components and production delays, are contributing to shortages of certain components used in the Company's products and increased difficulties in the Company's ability to obtain a consistent supply of materials at stable pricing levels. Supply shortages and longer lead times for components used in the Company's products, including limited source components, has resulted and may continue to cause disruptions to the Company's production activities, which has had and may continue to have an adverse effect on the Company's financial condition or result of operations. These factors have impacted and may continue to impact the timing of the Company's revenue, and have also resulted, and may result in a delay of revenue, and an increase in manufacturing costs, all of which have adversely impacted and may continue to adversely impact the Company's operating results.

Additionally, geopolitical tensions, such as Russia's incursion into and ongoing war in Ukraine, ongoing conflicts between the United States and China, tariff and trade policy changes, economic sanctions, and increasing potential of conflict involving countries

in Asia that are critical to the Company's supply chain operations, such as Taiwan and China, have resulted in increasing global instability and create uncertainty for global commerce. In addition to experiencing adverse economic impacts resulting from economic sanctions on Russia, as well as the prospect of a reduction in natural gas exports from Russia and resulting market disruptions, such as higher prices for and reduced availability of key metals used in our products, the Company has ceased its Russian operations. Sustained or worsening global economic conditions and increasing inflation and geopolitical tensions have increased the Company's cost of doing business, impacted the Company's supply chain operations, caused certain of the Company's customers to reduce or delay spending and further intensified pricing pressures. Combined with increased inflation, potential energy shortages in Europe where we have significant operations and overall higher energy and transportation costs, these factors have affected and may continue to affect the Company's financial condition and result of operations.

The preparation of the consolidated financial statements requires the Company to make estimates, judgments and assumptions that may affect the reported amounts of assets, liabilities, equity, revenues and expenses and related disclosure of contingent assets and liabilities. On an ongoing basis the Company evaluates estimates, judgments and methodologies. Changes in estimates are recorded in the period in which they become known. The Company bases estimates on historical experience and on various other assumptions that they believe are reasonable, the results of which form the basis for making judgments about the carrying values of assets, liabilities and equity and the amount of revenues and expenses. The full extent to which the COVID-19 pandemic, global supply chain interruptions, higher energy costs and shortages, the global economy, including inflation and the threat of recession, and geopolitical instability will directly or indirectly impact future business, results of operations and financial condition, including sales, expenses, reserves and allowances, manufacturing, research and development costs and employee-related amounts, will depend on future developments that are highly uncertain, including as a result of new developments concerning the COVID-19 pandemic, global supply chain and various global conflicts. The Company has made estimates of the impact of COVID-19 within the financial statements and there may be changes to those estimates in future periods. Actual results may differ from management's estimates if these results differ from historical experience.

Loss Contingencies

Loss contingency provisions are recorded if the potential loss from any claim, asserted or unasserted, or legal proceeding related to patents, products and other matters, is considered probable and the amount can be reasonably estimated or a range of loss can be determined. These accruals represent management's best estimate of probable loss. Disclosure is provided when a loss is considered probable but the loss is not reasonably estimable and when a material loss is reasonably possible but not probable.

3. Recent Accounting Pronouncements

In March 2020, the FASB issued ASU No. 2020-04, *Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting* (“ASU 2020-04”), which provides temporary optional guidance to ease the potential burden in accounting for reference rate reform. The guidance provides optional expedients and exceptions for applying generally accepted accounting principles to transactions affected by reference rate reform if certain criteria are met. These transactions include: contract modifications, hedging relationships, and sale or transfer of debt securities classified as held-to-maturity. In January 2021, the FASB issued ASU 2021-01, *Reference Rate Reform (Topic 848): Scope*, to clarify that certain optional expedients and exceptions under the reference rate reform guidance for contract modifications and hedge accounting apply to derivatives that are affected by the discounting transition. Specifically, certain provisions in the reference rate reform guidance, if elected by an entity, apply to derivative instruments that use an interest rate for margining, discounting, or contract price alignment that is modified as a result of reference rate reform. This temporary guidance is effective for all entities as of March 12, 2020 through December 31, 2022. The Company elected to apply this guidance for all contract modifications or eligible hedging relationships during that time period subject to certain criteria. The adoption of this standard has not and is not expected to have a material impact on the Company's consolidated financial statements.

In October 2021, the FASB issued Accounting Standards Update (“ASU”) No. 2021-08, *Business Combinations (Topic 805)—Accounting for Contract Assets and Contract Liabilities from Contracts with Customers* to improve the accounting for acquired revenue contracts with customers in a business combination. The amendments require an entity (acquirer) recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with ASC 606. Previous guidance required an entity to recognize contract assets and contract liabilities at fair value as of the acquisition date. The amendments are effective for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years. Early adoption is permitted, including adoption in an interim period. The Company elected to early adopt ASU No. 2021-08 in the fourth quarter of 2021, and in accordance with the early adoption requirements in an interim period, has applied the provisions retrospectively to all acquisitions completed on or after January 1, 2021. The adoption of this ASU did not have a material impact on the Company's consolidated financial statements.

In December 2019, the FASB issued ASU 2019-12—*Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes*. The guidance simplifies the accounting for income taxes by removing certain exceptions within the current guidance; including the approach for intra-period tax allocation, the methodology for calculating income taxes in an interim period, and the recognition of deferred tax liabilities for outside basis differences. The amendment also improves consistent application by clarifying and amending existing guidance related to aspects of the accounting for franchise taxes and enacted changes in tax laws or rates and clarifies the accounting for transactions that result in a step up in the tax basis of goodwill. This guidance is effective for annual and interim periods beginning after December 15, 2020 and early adoption is permitted. The adoption of this ASU in 2021 did not have a material impact on the Company's consolidated financial statements.

4. Revenue

The following table presents the Company's revenues by Segment for the years ended December 31 (in millions):

	2022	2021	2020
Revenue by Segment:			
BSI BioSpin	\$ 696.7	\$ 691.0	\$ 600.0
BSI CALID	822.2	819.6	653.9
BSI Nano	787.0	697.5	556.1
BEST	237.1	223.8	189.5
Eliminations	(12.3)	(14.0)	(12.0)
Total revenue	<u>\$ 2,530.7</u>	<u>\$ 2,417.9</u>	<u>\$ 1,987.5</u>

Revenue for the Company recognized at a point in time versus over time is as follows for the years ended December 31 (in millions):

	2022	2021	2020
Revenue recognized at a point in time	\$ 2,204.7	\$ 2,104.7	\$ 1,726.7
Revenue recognized over time	326.0	313.2	260.8
Total revenue	<u>\$ 2,530.7</u>	<u>\$ 2,417.9</u>	<u>\$ 1,987.5</u>

Remaining Performance Obligations

Remaining performance obligations represent the aggregate transaction price allocated to a promise to transfer a good or service that is fully or partially unsatisfied at the end of the period. As of December 31, 2022, remaining performance obligations were approximately \$2,258.8 million.

Contract Balances

The timing of revenue recognition, billings and cash collections results in billed accounts receivable, notes receivables and unbilled receivables (contract assets) and deferred revenue, customer deposits and billings in excess of revenue recognized (contract liabilities) on the Company's consolidated balance sheets.

Contract assets—Most of the Company's long-term contracts are billed as work progresses in accordance with the contract terms and conditions, either at periodic intervals or upon achievement of certain milestones. Billing often occurs subsequent to revenue recognition, resulting in contract assets. Contract assets are generally classified as other current assets in the consolidated balance sheets. The balance of contract assets as of December 31, 2022 and December 31, 2021 was \$61.3 million and \$46.1 million, respectively.

Contract liabilities—The Company often receives cash payments from customers in advance of the Company's performance, resulting in contract liabilities. These contract liabilities are classified as either current or long-term in the consolidated balance sheet based on the timing of when revenue recognition is expected. The balance of contract liabilities as of December 31, 2022 and December 31, 2021 was \$471.7 million and \$430.8 million, respectively. The increase in the contract liability balance during the year ended December 31, 2022 is primarily a result of new performance obligations entered into during the period and delays in certain system installations due to supply chain and logistics challenges. Approximately \$289.4 million of the contract liability balance on December 31, 2021 was recognized as revenue during the year ended December 31, 2022.

5. Acquisitions

Pro forma financial information reflecting all acquisitions has not been presented because the impact, individually and collectively, on revenues and net income is not material. Amounts allocated to goodwill that are attributable to expected synergies are not expected to be deductible for tax purposes.

2022

In the year ended December 31, 2022, the Company completed various acquisitions that collectively complemented its existing product offerings of to the Company's existing businesses. The following table reflects the consideration transferred and the respective reportable segment for each of the 2022 acquisitions (in millions):

Segment	PreOmics GmbH BSI CALID	Optimal Industrial Automation and Technologies BSI BioSpin	Inscopix, Inc. BSI Nano
Consideration Transferred:			
Cash paid	\$ 52.1	\$ 40.3	\$ 101.5
Cash acquired	(16.0)	(6.2)	(12.1)
Fair value of hybrid financial instruments - founders	20.9	—	—
Fair value of redeemable noncontrolling interest - other shareholders	6.8	—	—
Fair value of contingent consideration	—	0.4	—
Working capital adjustment	—	—	0.6
Total consideration transferred	<u>\$ 63.8</u>	<u>\$ 34.5</u>	<u>\$ 90.0</u>
Allocation of Consideration Transferred:			
Accounts receivable	\$ 0.4	\$ 1.9	\$ 3.2
Inventories	0.6	—	2.5
Other current assets	0.7	0.8	0.9
Property, plant and equipment	1.3	0.1	0.5
Other assets	0.4	0.8	4.7
Intangible assets:			
Technology	12.5	5.9	26.6
Customer relationships	6.9	12.9	20.8
Backlog	—	1.1	—
Trade name	1.9	1.2	3.2
Goodwill	47.0	18.6	52.2
Liabilities assumed	(7.9)	(8.8)	(24.6)
Total consideration allocated	<u>\$ 63.8</u>	<u>\$ 34.5</u>	<u>\$ 90.0</u>

PreOmics GmbH

On January 18, 2022, the Company acquired a 74.15% interest in PreOmics GmbH, (“PreOmics”), a privately held company, for a purchase price of EUR 46.1 million (approximately \$52.1 million). PreOmics is a provider of sample preparation and automation solutions for proteomic analysis by mass spectrometry systems. PreOmics is located in Munich, Germany and was integrated into BSI CALID Segment.

Concurrent with the acquisition, the Company entered into an agreement with the noncontrolling interest holders that provides the Company with the right to purchase, and the noncontrolling interest holders with the right to sell, the remaining 25.85% of PreOmics for cash at a contractually defined redemption value for both the original founders and other shareholders of PreOmics, exercisable beginning in 2026. The fair value of these rights has been bifurcated into two financial instruments to separately account for the amounts attributable to the founders and the amount attributable to other shareholders.

The rights (embedded derivative) associated with the founders can be accelerated, at a discounted redemption value, upon certain events related to post combination employment services. As the options are tied to continued employment, the Company classified the hybrid instrument (noncontrolling interest with an embedded derivative) as a long-term liability on the consolidated balance sheet. The hybrid instrument associated with the founders is initially measured at fair value on the acquisition date. Subsequent to the acquisition, the carrying value of the hybrid instrument is remeasured to fair value with changes recorded to stock-based compensation expense in proportion to the requisite service period vested.

The rights associated with the other noncontrolling interest shareholders are contingently redeemable at the option. As redemption of the rights is contingently redeemable at the option of the noncontrolling interest shareholders, the Company classifies the carrying amount of the redeemable noncontrolling interest in the mezzanine section on the consolidated balance sheet, which is presented above the equity section and below liabilities. The redeemable noncontrolling interest is initially measured at fair value and subsequently at the greater of the amount that would be paid if settlement occurred as of the balance sheet date based on the contractually defined redemption value and its carrying amount adjusted for net income (loss) attributable to the noncontrolling interest. Adjustments to the carrying value of the redeemable noncontrolling interest are recorded through retained earnings.

The Company completed the fair value allocation during 2022. The amortization period for the intangible assets acquired is nine years for technology, and twelve years for the trade name and customer relationships.

Optimal Industrial Automation and Technologies

On April 1, 2022, the Company completed a share purchase agreement to acquire 100% of the outstanding stock of Optimal Industrial Technologies Limited ("OIT") and Optimal Industrial Automation Limited ("OIA"), collectively, "Optimal". The purchase price for the outstanding shares of Optimal was approximately GBP 30.7 million (approximately \$40.3 million) with the potential for additional contingent consideration of up to GBP 3.4 million (approximately \$4.5 million). OIA and OIT, provide industrial automation solutions and Process Analytical Technology (“PAT”) software and services to Life Sciences, Pharmaceutical, Chemical, Fast-Moving Consumer Goods, Power Generation and Food & Beverage customers around the globe. The Optimal Industrial Companies are closely related as OIA is a PAT software company, which develops and sells “turn-key industrial solution”, and OIT is a services company, which provides PAT expertise related to the software in addition to 24/7 integration support. Optimal is located in Bristol, England, and was integrated into the BSI BioSpin Segment. The Company accounted for the purchase of Optimal under the acquisition method.

The preliminary fair value allocation for Optimal included contingent consideration in the amount of GBP 0.3 million (approximately \$0.4 million), which represented the estimated fair value of future payments to the former shareholders of Optimal based on achieving revenue targets in 2022. The Company expects to complete the fair value allocation during the measurement period. The amortization period for the intangible assets acquired is ten years for the technology, between twelve years and fourteen years for the customer relationships, and thirteen years for the trade names. The Company expects to amortize backlog through the second quarter of 2023.

Inscopix, Inc.

On November 7, 2022, the Company completed a share purchase agreement to acquire 100% of the outstanding stock of Inscopix, Inc. ("Inscopix"). The purchase price for the outstanding shares of Inscopix was \$101.5 million. Inscopix is a private company founded in 2011 from Stanford University research that led to the invention of the miniscope. The innovation at the core of the Inscopix brain-mapping platform is the integration and miniaturization of the benchtop fluorescence microscope into a 2-gram device that can be mounted onto the head of a freely behaving animal to observe its brain activity. These miniscopes are empowering advances in neuroscience research and preclinical research for the development of transformational therapeutics. Inscopix is located in Mountain View, California and will be integrated into the BSI Nano Segment. The Company accounted for the purchase of Inscopix under the acquisition method.

The Company expects to complete the fair value allocation during the measurement period. The amortization period for the intangible assets acquired is ten years for the technology and customer relationships, and twelve years for the trade name.

In addition to the PreOmics, Optimal and Inscopix acquisitions in 2022, the Company completed various other acquisitions accounted for under the acquisition method that complemented the Company's existing product offerings. The following table reflects the consideration transferred and the respective reportable segment for these acquisitions (in millions):

Name of Acquisition	Date Acquired	Segment	Total Consideration	Cash Consideration
Prolab Instruments GmbH	January 17, 2022	BSI CALID	\$ 5.7	\$ 5.5
PepSep Holding ApS	February 1, 2022	BSI CALID	4.1	2.8
IonSense, Inc	April 5, 2022	BSI CALID	9.5	8.1
Neurensence, Inc.	November 30, 2022	BSI Nano	7.5	7.1
			<u>\$ 26.8</u>	<u>\$ 23.5</u>

In addition to the acquisitions noted above, in 2022 the Company completed minority strategic investments that complemented the Company's existing product offerings. The following table (in millions) reflects the consideration transferred and the respective reportable segment for the investments. For those investments accounted for under the alternative measurement these values also represent the carrying value at December 31, 2022. No impairments have been recognized on these investments.

Name	Acquisition / Investment	Financial Statement Classification	Date Acquired	Segment	Total Consideration	Cash Consideration
PrognomiQ, Inc	Investment	Other long-term assets	February 16, 2022	BSI CALID	\$ 12.0	\$ 12.0
Tofwerk, AG	Investment	Other long-term assets	April 28, 2022	BSI CALID	18.6	18.6
Kiyatec, Inc	Investment	Other long-term assets	November 23, 2022	BSI CALID	9.3	9.3
Other Investments	Investment	Other long-term assets	Various	BSI CALID	20.3	20.3
					<u>\$ 60.2</u>	<u>\$ 60.2</u>

Equity-method investments

The Company's investments in Tofwerk, AG and Eliptica Limited amount to an equity investment in common stock of 40% and 20%, respectively, and are accounted for using the equity-method of accounting. The Company accounts for the investments under the equity method if the Company has the ability to exercise significant influence, but not control, over an investee. Investments in equity-method investees are included within "Other long-term assets" in the consolidated balance sheets. The Company's proportional share of the earnings or losses as reported by equity-method investees are classified as "Equity in income of unconsolidated investees, net of tax" in the consolidated statements of income and comprehensive income. The Company regularly evaluates these investments, which are not carried at fair value, for other-than-temporary impairment. The Company records investments, including incremental investments, of shares in equity-method investees at cost. In the event the Company no longer has the ability to exercise significant influence over an equity-method investee, the Company would discontinue accounting for the investment under the equity method.

2023—Subsequent Event Acquisitions

On January 3, 2023, the Company acquired 100% of Biognosys, AG ("Biognosys") for CHF 75 million (approximately \$80.1 million). In connection with the acquisition, the Company issued and sold stock in Biognosys to the two founding shareholders representing a 2.8% ownership interest in Biognosys. The Company and the founding shareholders each have put/call rights associated with the minority interest.

On January 4, 2023, the Company acquired Acquirer Imaging GmbH and Deltabyte GmbH for EUR 7.2 million (approximately \$7.7 million).

2021

SCI Instruments

On August 24, 2021, the Company acquired SCI Instruments ("SCI"), a privately held company, for a purchase price of \$28.0 million with the potential for additional consideration of up to \$4.0 million based on revenue and gross margin achievements in the calendar years 2022 and 2023. SCI is a manufacturer of advanced metrology systems and analysis software and serves major companies in the semiconductor, optoelectronics, data storage, display, MEMS, and optical coating industries. SCI will be integrated into the BSI Nano Segment. The acquisition was accounted for under the acquisition method.

The fair value allocation included contingent consideration in the amount of \$1.0 million, which represented the estimated fair value of future payments to the former shareholders of SCI based on achieving revenue and gross margin targets for the calendar years 2022 and 2023. The Company completed the fair value allocation during 2022. The amortization period for the intangible assets acquired is ten years for the trade name and technology, and nine years for the customer relationships. The backlog intangible asset was fully amortized.

Molecubes NV

On November 17, 2021, the Company acquired Molecubes NV (“Molecubes”), a privately held company, for a purchase price of EUR 18.7 million (approximately \$21.1 million) with the potential for additional consideration of up to EUR 3.0 million (approximately \$3.4 million) based on revenue and gross margin achievements. Molecubes manufactures and sells preclinical imaging CUBES that enable researchers to perform high-performance SPECT/CT and PET/CT studies without the need for complex system handling. The acquisition was accounted for under the acquisition method.

The fair value allocation included contingent consideration in the amount of EUR 0.4 million (approximately \$0.4 million), which represented the estimated fair value of future payments to the former shareholders of Molecubes based on achieving revenue and gross margin targets in 2021 and 2022. The Company completed the fair value allocation during 2022. The amortization period for the intangible assets acquired is ten years for the trade name, technology, and customer relationships. The backlog intangible asset was fully amortized.

Segment	SCI Instruments BSI Nano	Molecubes NV BSI BioSpin
Consideration Transferred:		
Cash paid	\$ 28.0	\$ 21.1
Fair value of contingent consideration	1.0	0.4
Working capital adjustment	(0.6)	—
Total consideration transferred	\$ 28.4	\$ 21.5
Allocation of Consideration Transferred:		
Cash	\$ —	\$ 1.1
Accounts receivable	—	1.2
Inventories	1.0	1.5
Other current assets	—	0.3
Property, plant and equipment	—	0.1
Intangible assets:		
Technology	7.1	3.4
Customer relationships	6.4	2.4
Trade name	0.4	0.5
Backlog	1.2	0.1
Goodwill	12.6	14.1
Deferred taxes	—	(1.6)
Liabilities assumed	(0.3)	(1.6)
Total consideration allocated	\$ 28.4	\$ 21.5

In addition to the SCI and Molecubes acquisitions, in 2021 the Company completed various other acquisitions accounted for under the acquisition method that complemented the Company’s existing product offerings. The following table reflects the consideration transferred and the respective reportable segment for these acquisitions (in millions):

Name of Acquisition	Date Acquired	Segment	Total Consideration	Cash Consideration
Creative Instruments	July 1, 2021	BSI CALID	\$ 1.0	\$ 1.0
SVXR, Inc	September 9, 2021	BSI Nano	13.4	11.9
			\$ 14.4	\$ 12.9

In addition to the acquisitions noted above, in 2021 the Company completed minority strategic investments that complemented the Company's existing product offerings. The following table reflects the consideration transferred and the respective reportable segment for the acquisitions (in millions):

Name	Acquisition / Investment	Financial Statement Classification	Date Acquired	Segment	Total Consideration	Cash Consideration
Glycopath Inc.	Investment	Other long-term assets	February 18, 2021	BSI CALID	\$ 2.0	\$ 2.0
IonPath Inc.	Investment	Other long-term assets	March 18, 2021	BSI CALID	2.0	2.0
Olaris, Inc.	Investment	Other long-term assets	September 23, 2021	BSI BioSpin	0.5	0.5
					<u>\$ 4.5</u>	<u>\$ 4.5</u>

6. Allowance for Doubtful Accounts

The following is a summary of the components for allowance for doubtful accounts (in millions):

Balance at December 31, 2019	\$ 3.4
Additions	0.9
Deductions	<u>(1.3)</u>
Balance at December 31, 2020	3.0
Additions	2.2
Deductions	<u>(1.0)</u>
Balance at December 31, 2021	4.2
Additions	1.9
Deductions	<u>(0.8)</u>
Balance at December 31, 2022	<u>\$ 5.3</u>

7. Inventories

Inventories consisted of the following (in millions):

	2022	2021
Raw materials	\$ 300.9	\$ 218.7
Work-in-process	278.7	254.9
Finished goods	128.2	144.9
Demonstration units	92.3	91.6
Total Inventories	<u>\$ 800.1</u>	<u>\$ 710.1</u>

Finished goods include in-transit systems that have been shipped to the Company's customers but not yet installed and accepted by the customer. At December 31, 2022 and 2021, inventory-in-transit was \$41.1 million and \$49.5 million, respectively.

8. Property, Plant and Equipment, Net

The following is a summary of property, plant and equipment, net by major asset class (in millions):

	2022	2021
Land	\$ 36.6	\$ 34.1
Building and leasehold improvements	434.5	371.5
Machinery, equipment, software and furniture and fixtures	462.6	435.6
	<u>933.7</u>	<u>841.2</u>
Less accumulated depreciation and amortization	<u>(446.7)</u>	<u>(435.1)</u>
Property, plant and equipment, net	<u>\$ 487.0</u>	<u>\$ 406.1</u>

Depreciation expense, which includes the amortization of leasehold improvements, for the years ended December 31, 2022, 2021 and 2020 was \$51.6 million, \$51.8 million and \$44.7 million, respectively.

9. Goodwill and Intangible Assets

Goodwill

The following table sets forth the changes in the carrying amount of goodwill by segment (in millions):

	BSI BioSpin	BSI CALID	BSI Nano	BEST	Total
Balance at December 31, 2019	\$ 27.5	\$ 56.7	\$ 208.5	\$ 0.3	\$ 293.0
Current period additions/adjustments	—	—	13.7	—	13.7
Foreign currency impact	3.3	4.6	5.8	—	13.7
Balance at December 31, 2020	30.8	61.3	228.0	0.3	320.4
Current period additions/adjustments	12.8	0.6	16.6	—	30.0
Foreign currency impact	(1.2)	(4.0)	(5.7)	—	(10.9)
Balance at December 31, 2021	42.4	57.9	238.9	0.3	339.5
Current period additions/adjustments	18.6	55.3	58.0	—	131.9
Foreign currency impact	(3.2)	(5.8)	(4.8)	—	(13.8)
Balance at December 31, 2022	\$ 57.8	\$ 107.4	\$ 292.1	\$ 0.3	\$ 457.6

The Company has historically evaluated its goodwill for impairment annually as of December 31 or more frequently if impairment indicators arose in accordance with Accounting Standards Codification (“ASC”) Topic 350, “Intangibles - Goodwill and Other.” In the fourth quarter of 2022, the Company changed the date of its annual assessment of goodwill to October 1st for all reporting units. The change in testing date for goodwill is a change in accounting principle, which management believes is preferable as the new date of the assessment better aligns with the Company’s budgeting process and will create a more efficient and timely process surrounding the impairment tests. The change in the assessment date does not delay, accelerate or avoid a potential impairment charge. The Company has determined that it is impracticable to objectively determine projected cash flows and related valuation estimates that would have been used as of each October 1st of prior reporting periods without the use of hindsight. As such, the Company prospectively applied the change in annual goodwill impairment testing date from October 1, 2022. No impairment was recognized during the years ended December 31, 2022, 2021 or 2020.

As a result of the impact of the COVID-19 pandemic, the Company performed an interim impairment assessment of the goodwill balance as of March 31, 2020 using a combination of both quantitative and qualitative approaches. Based on this interim assessment, the Company concluded the fair values of each of the reporting units were significantly greater than their carrying amounts, and therefore, no impairment is required. The goodwill assessment was based on management’s estimates and assumptions, certain of which are dependent on external factors. No further triggering events were identified subsequent to March 31, 2020.

The Company has recorded \$3.1 million of accumulated impairment losses of goodwill as of December 31, 2022.

Intangible Assets

The following is a summary of intangible assets (in millions):

	2022			2021		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Existing technology and related patents	\$ 354.7	\$ (219.0)	\$ 135.7	\$ 310.4	\$ (206.8)	\$ 103.6
Customer relationships	192.3	(72.1)	120.2	156.1	(58.2)	97.9
Trade names	22.3	(7.4)	14.9	15.5	(5.8)	9.7
Other	1.0	(0.9)	0.1	1.8	(1.2)	0.6
Intangible assets	\$ 570.3	\$ (299.4)	\$ 270.9	\$ 483.8	\$ (272.0)	\$ 211.8

For the years ended December 31, 2022, 2021 and 2020, the Company recorded amortization expense of approximately \$37.1 million, \$37.4 million and \$35.8 million, respectively, in the consolidated statements of income and comprehensive income.

The estimated future amortization expense related to amortizable intangible assets is as follows (in millions):

2023	\$ 38.7
2024	36.4
2025	35.5
2026	33.0
2027	26.1
Thereafter	101.2
Total	\$ 270.9

10. Other Current Liabilities

The following is a summary of other current liabilities (in millions):

	2022	2021
Deferred revenue	\$ 152.2	\$ 138.4
Accrued compensation	136.1	132.0
Accrued warranty	24.7	23.8
Contingent consideration	8.1	5.2
Income taxes payable	85.5	75.1
Other taxes payable	18.5	15.4
Derivative liabilities	0.9	6.4
Operating leases	16.4	17.9
Legal and professional fees	14.2	12.8
Other accrued expenses	42.6	54.2
Other current liabilities	<u>\$ 499.2</u>	<u>\$ 481.2</u>

The following table sets forth the changes in accrued warranty (in millions):

Balance at December 31, 2019	\$ 21.1
Accruals for warranties issued during the year	19.2
Settlements of warranty claims	(21.1)
Foreign currency impact	1.1
Balance at December 31, 2020	<u>20.3</u>
Accruals for warranties issued during the year	23.4
Settlements of warranty claims	(19.0)
Foreign currency impact	(0.9)
Balance at December 31, 2021	<u>23.8</u>
Accruals for warranties issued during the year	12.9
Settlements of warranty claims	(10.9)
Foreign currency impact	(1.1)
Balance at December 31, 2022	<u>\$ 24.7</u>

11. Debt

The Company's debt obligations consist of the following (in millions):

	2022	2021
EUR notes (in U.S. Dollars) under the 2021 Note Purchase Agreement	\$ 160.6	\$ 170.7
CHF notes (in U.S. Dollars) under the 2021 Note Purchase Agreement	325.1	329.2
CHF notes (in U.S. Dollars) under the 2019 Note Purchase Agreement	321.9	325.9
U.S. Dollar notes under the 2019 Term Loan Agreement	293.3	299.2
U.S. Dollar notes under the 2012 Note Purchase Agreement	100.0	205.0
Unamortized debt issuance costs	(1.7)	(2.0)
Other loans	5.9	1.9
Total notes and loans outstanding	<u>1,205.1</u>	<u>1,329.9</u>
Finance lease obligations	14.1	4.3
Total debt	<u>1,219.2</u>	<u>1,334.2</u>
Current portion of long-term debt and finance lease obligations	(18.7)	(112.4)
Total long-term debt, less current portion	<u>\$ 1,200.5</u>	<u>\$ 1,221.8</u>

2021 Note Purchase Agreement

On December 7, 2021, the Company entered into a note purchase agreement, referred to as the 2021 Note Purchase Agreement, with a group of institutional accredited investors. Pursuant to the 2021 Note Purchase Agreement, the Company issued and sold CHF 300 million aggregate principal amount of 0.88% series A senior notes and EUR 150 million aggregate principal amount of 1.03%

series B senior notes due December 8, 2031, referred to as the 2021 Senior Notes. The obligations under the Note Purchase Agreement are unsecured and are fully and unconditionally guaranteed by certain of the Company's subsidiaries.

Interest on the 2021 Senior Notes is payable semi-annually on June 7 and December 7 of each year, commencing June 7, 2022. The Company may prepay some or all of the 2021 Senior Notes at any time in an amount not less than 10% of the aggregate principal amount of the 2021 Senior Notes then outstanding at a price equal to the sum of (a) the principal amount to be prepaid, plus accrued and unpaid interest, (b) any applicable "make-whole" amount, and (c) certain other fees and expenses. In the event of a change in control (as defined in the 2021 Note Purchase Agreement) of the Company, the Company may be required to prepay the 2021 Senior Notes at a price equal to 100% of the principal amount thereof, plus accrued and unpaid interest and certain other fees and expenses.

The 2021 Note Purchase Agreement contains customary affirmative and negative covenants, including, among others, restrictions on the Company's ability to incur liens, transfer or sell equity or assets, engage in certain mergers and consolidations, enter into transactions with affiliates, and engage or permit any subsidiary to engage in certain lines of business. The 2021 Note Purchase Agreement also includes customary representations and warranties and events of default.

Additionally, so long as any 2021 Senior Notes are outstanding, the Company may not permit (i) its leverage ratio (as determined pursuant to the 2021 Note Purchase Agreement) as of the end of any fiscal quarter to exceed 3.50 to 1.00 unless a material acquisition causes an adjusted leverage ratio to apply pursuant to the 2021 Note Purchase Agreement, (ii) its interest coverage ratio (as determined pursuant to the 2021 Note Purchase Agreement) as of the end of any fiscal quarter for any period of four consecutive fiscal quarters to be less than 2.50 to 1.00, or (iii) priority Debt at any time to exceed 15% of consolidated total assets (as determined pursuant to the 2021 Note Purchase Agreement).

2019 Transactions

On December 11, 2019, the Company entered into (1) a revolving credit agreement to establish a new revolving credit facility in the aggregate principal amount of \$600 million; (2) a term loan agreement to establish a new term loan facility in the aggregate principal amount of \$300 million; and (3) a note purchase agreement to issue and sell CHF 297 million aggregate principal amount of 1.01% senior notes due December 11, 2029.

The existing \$105 million 4.31% Series 2012A Senior Notes, Tranche C, was paid in January 2022, and the existing \$100 million 4.46% Series 2012A Senior Notes, Tranche D, due January 18, 2024, which the Company issued pursuant to a note purchase agreement dated January 18, 2012, remain in full force and effect.

Each of the revolving credit agreements, term loan agreement and note purchase agreements are described below.

2019 Revolving Credit Agreement

On December 11, 2019, the Company entered into a new credit agreement, referred to as the 2019 Revolving Credit Agreement. The 2019 Revolving Credit Agreement provides for a five-year revolving credit facility in the U.S. Dollar equivalent amount of \$600 million, comprised of sub-facilities for revolving loans, swing-line loans, letters of credit and foreign borrowings. The 2019 Revolving Credit Agreement also provides for an uncommitted incremental facility whereby, under certain circumstances, the Company may, at its option, increase the amount of the revolving facility or incur term loans in an aggregate amount not to exceed \$250 million. Loans under the 2019 Revolving Credit Agreement will be repayable in full at maturity and may also be prepaid at the Company's option in whole or in part without premium or penalty. Amounts borrowed under the 2019 Revolving Credit Agreement may be repaid and reborrowed from time to time prior to the maturity date. The obligations under the 2019 Revolving Credit Agreement are unsecured and are fully and unconditionally guaranteed by the Company and certain of its subsidiaries.

Borrowings under the 2019 Revolving Credit Agreement bear interest at a rate equal to, at the Company's option, (a) the London Interbank Offered Rate (LIBOR) applicable to the relevant currency, plus a margin ranging from 1.000% to 1.500%, based on the Company's leverage ratio, or (b) the highest of (i) the federal funds effective rate plus $\frac{1}{2}$ of 1%, (ii) the prime rate announced by Bank of America, N.A., and (iii) LIBOR, as adjusted, plus 1%, plus, in each case, a margin rate ranging from 0.100% to 0.500%, based on the Company's leverage ratio. The Company has also agreed to pay a quarterly facility fee based on the aggregate unused amount available under the 2019 Revolving Credit Agreement ranging from 0.100% to 0.200%, based on the Company's leverage ratio.

The 2019 Revolving Credit Agreement includes affirmative, negative and financial covenants and events of default customary for financings of this type. The negative covenants include, among others, restrictions on liens, indebtedness of the Company and its subsidiaries, asset and equity sales, dividends, and transactions with affiliates. The financial covenants include maximum leverage ratio and minimum interest coverage ratios of the Company, specifically, the Company's leverage ratio cannot exceed 3.5 and the interest coverage ratio cannot be less than 2.5. The events of default include, among others, payment defaults, defaults in the performance of affirmative and negative covenants, the inaccuracy of representations and warranties, bankruptcy and insolvency related events, certain ERISA events, material judgments, and the occurrence of a change of control.

The following is a summary of the maximum commitments and the net amounts available to the Company under the 2019 Revolving Credit Agreement and other lines of credit with various financial institutions located primarily in Germany and Switzerland that are unsecured and typically due upon demand with interest payable monthly (dollars in millions):

	Weighted Average Interest Rate	Total Amount Committed by Lenders	Outstanding Borrowings	Outstanding Letters of Credit	Total Committed Amounts Available
2019 Credit Agreement	0.15 %	\$ 600.0	\$ —	\$ —	\$ 600.0
Bank guarantees and working capital line	varies	130.7	—	130.7	—
Total revolving lines of credit		<u>\$ 730.7</u>	<u>\$ —</u>	<u>\$ 130.7</u>	<u>\$ 600.0</u>

2019 Term Loan Agreement

On December 11, 2019, the Company, together with certain of its subsidiaries, as borrowers, entered into a term loan agreement, referred to as Term Loan Agreement with a bank consortium. The Term Loan Agreement provides for a \$300 million seven-year term loan facility subject to terms and conditions substantially consistent with those provisions contained in the 2019 Revolving Credit Agreement. Loans under the Term Loan Agreement will be repayable in full at maturity, subject to scheduled amortization beginning in 2022, and may also be prepaid at the Company's option in whole or in part without premium or penalty. The obligations under the Term Loan Agreement are unsecured and are fully and unconditionally guaranteed by certain of the Company's subsidiaries.

Amounts outstanding under the Term Loan Agreement bear interest at a rate equal to, at the Company's option, (a) the U.S. Dollar London Interbank Offered Rate (USD LIBOR), plus a margin ranging from 1.000% to 1.500%, based on the Company's leverage ratio, or (b) the highest of (i) the federal funds effective rate plus $\frac{1}{2}$ of 1%, (ii) the prime rate announced by Bank of America, N.A., and (iii) USD LIBOR, as adjusted, plus 1%, plus a margin ranging from 0.100% to 0.500%, based on the Company's leverage ratio.

The other terms of the Term Loan Agreement are substantially similar to the terms of the 2019 Revolving Credit Agreement, including representations and warranties, affirmative, negative and financial covenants, and events of default.

2019 Note Purchase Agreement

On December 11, 2019, the Company entered into a note purchase agreement, referred to as the 2019 Note Purchase Agreement, with a group of institutional accredited investors. Pursuant to the 2019 Note Purchase Agreement, the Company issued and sold CHF 297 million aggregate principal amount of 1.01% senior notes due December 11, 2029, referred to as the 2019 Senior Notes. The obligations under the Note Purchase Agreement are unsecured and are fully and unconditionally guaranteed by certain of the Company's subsidiaries.

Interest on the 2019 Senior Notes is payable semi-annually on June 11 and December 11 of each year, commencing June 11, 2020. The 2019 Senior Notes are unsecured obligations of the Company and are fully and unconditionally guaranteed by certain of the Company's subsidiaries. The Company may prepay some or all of the 2019 Senior Notes at any time in an amount not less than 10% of the aggregate principal amount of the 2019 Senior Notes then outstanding at a price equal to the sum of (a) the principal amount to be prepaid, plus accrued and unpaid interest, (b) any applicable "make-whole" amount, and (c) certain other fees and expenses. In the event of a change in control (as defined in the 2019 Note Purchase Agreement) of the Company, the Company may be required to prepay the 2019 Senior Notes at a price equal to 100% of the principal amount thereof, plus accrued and unpaid interest and certain other fees and expenses.

The 2019 Note Purchase Agreement contains customary affirmative and negative covenants, including, among others, restrictions on the Company's ability to incur liens, transfer or sell equity or assets, engage in certain mergers and consolidations, enter into transactions with affiliates, and engage or permit any subsidiary to engage in certain lines of business. The 2019 Note Purchase Agreement also includes customary representations and warranties and events of default.

Additionally, so long as any 2019 Senior Notes are outstanding, the Company may not permit (i) its leverage ratio (as determined pursuant to the 2019 Note Purchase Agreement) as of the end of any fiscal quarter to exceed 3.50 to 1.00 unless a material acquisition causes an adjusted leverage ratio to apply pursuant to the 2019 Note Purchase Agreement, (ii) its interest coverage ratio (as determined pursuant to the 2019 Note Purchase Agreement) as of the end of any fiscal quarter for any period of four consecutive fiscal quarters to be less than 2.50 to 1.00, or (iii) priority Debt at any time to exceed 15% of consolidated total assets (as determined pursuant to the 2019 Note Purchase Agreement).

2012 Note Purchase Agreement

In January 2012, the Company entered into a note purchase agreement, referred to as the 2012 Note Purchase Agreement, with a group of accredited institutional investors. Pursuant to the 2012 Note Purchase Agreement, the Company issued and sold \$240.0 million of senior notes, referred to as the 2012 Senior Notes, which consist of the following:

- \$20 million 3.16% Series 2012A Senior Notes, Tranche A, due January 18, 2017;
- \$15 million 3.74% Series 2012A Senior Notes, Tranche B, due January 18, 2019;
- \$105 million 4.31% Series 2012A Senior Notes, Tranche C, due January 18, 2022; and
- \$100 million 4.46% Series 2012A Senior Notes, Tranche D, due January 18, 2024.

Principal amounts of Tranches A, B and C together with any accrued interest thereon were paid on their respective due dates in accordance with the 2012 Note Purchase Agreement.

Under the terms of the 2012 Note Purchase Agreement, interest is payable semi-annually on January 18 and July 18 of each year. The 2012 Senior Notes are unsecured obligations of the Company and are fully and unconditionally guaranteed by certain of the Company's direct and indirect subsidiaries. The 2012 Senior Notes rank pari passu in right of repayment with the Company's other senior unsecured indebtedness. The Company may prepay some or all of the 2012 Senior Notes at any time in an amount not less than 10% of the original aggregate principal amount of the 2012 Senior Notes to be prepaid, at a price equal to the sum of (a) 100% of the principal amount thereof, plus accrued and unpaid interest, and (b) the applicable make-whole amount, upon not less than 30 and no more than 60 days' written notice to the holders of the 2012 Senior Notes. In the event of a change in control of the Company, as defined in the Note Purchase Agreement, the Company may be required to prepay the Notes at a price equal to 100% of the principal amount thereof, plus accrued and unpaid interest.

The 2012 Note Purchase Agreement contains affirmative covenants, including, without limitation, maintenance of corporate existence, compliance with laws, maintenance of insurance and properties, payment of taxes, addition of subsidiary guarantors and furnishing notices and other information. The 2012 Note Purchase Agreement also contains certain restrictive covenants that restrict the Company's ability to, among other things, incur liens, transfer or sell assets, engage in certain mergers and consolidations and enter into transactions with affiliates. The 2012 Note Purchase Agreement also includes customary representations and warranties and events of default. In the case of an event of default arising from specified events of bankruptcy or insolvency, all outstanding 2012 Senior Notes will become due and payable immediately without further action or notice. In the case of payment events of defaults, any holder of 2012 Senior Notes affected thereby may declare all 2012 Senior Notes held by it due and payable immediately. In the case of any other event of default, a majority of the holders of the 2012 Senior Notes may declare all the 2012 Senior Notes to be due and payable immediately. Pursuant to the 2012 Note Purchase Agreement, so long as any 2012 Senior Notes are outstanding, the Company will not permit (i) its leverage ratio, as determined pursuant to the 2012 Note Purchase Agreement, as of the end of any fiscal quarter to exceed 3.50 to 1.00, (ii) its interest coverage ratio as determined pursuant to the 2012 Note Purchase Agreement as of the end of any fiscal quarter for any period of four consecutive fiscal quarters to be less than 2.50 to 1 or (iii) priority debt at any time to exceed 25% of consolidated net worth, as determined pursuant to the 2012 Note Purchase Agreement.

As of December 31, 2022, the Company was in compliance with the covenants of all debt agreements.

Annual maturities of notes and loans outstanding are as follows (in millions):

2023	\$	16.6
2024		115.7
2025		16.1
2026		248.7
2027		0.6
Thereafter		809.1
Total	\$	<u>1,206.8</u>

As of December 31, 2022, the Company has several cross-currency and interest rate swap agreements with a notional value of \$146.6 million of U.S. to Swiss Franc and a notional value of \$246.6 million of U.S. to Euro to hedge the variability in the movement of foreign currency exchange rates on portions of our Euro and Swiss Franc denominated net asset investments. These agreements qualify for hedge accounting and accordingly the changes in fair value of the derivative are recorded in other comprehensive income and remain in accumulated comprehensive income (loss) attributable to Bruker Corporation in shareholders' equity until the sale or substantial liquidation of the foreign operation. The difference between the interest rate received and paid under the interest rate and cross-currency swap agreements is recorded in interest and other income (expense) in the consolidated statements of income and comprehensive income. As a result of entering into these agreements, the Company lowered net interest expense by \$8.6 million and \$5.5 million during 2022 and 2021, respectively. The gains related to hedges of net asset investments in international operations that

were recorded within the cumulative translation adjustment section of other comprehensive income were \$58.0 million and \$36.4 million for the years ended December 31, 2022 and 2021, respectively. The losses related to hedges of net asset investments in international operations that were recorded within the cumulative translation adjustment section of other comprehensive income were \$47.1 million for the year ended December 31, 2020. The Company presents the cross-currency swap periodic settlements in investing activities and the interest rate swap periodic settlements in operating activities in the statement of cash flow.

In June 2022, the Company entered into the First Amendment to the 2019 Credit Agreement to modify certain contract definitions within the agreement. Primarily, the current London Interbank Offered Rate ("LIBOR") rates were changed to new alternative base rates for the respective currencies. As part of the change any related items, such as fall back rates and day conventions were also changed. No other material terms were modified with this agreement. In September 2022, the Company entered into the Second Amendment to the 2019 Term Loan Agreement and the Second Amendment to the 2019 Credit Agreement (collectively, the "Amendments"), to modify certain aspects of the 2019 Term Loan Agreement and 2019 Credit Agreement, respectively. The Amendments modify the reference rate thereunder from LIBOR to Secured Overnight Financing Rate ("SOFR"). There were no other changes to the 2019 Term Loan Agreement or 2019 Credit Agreement as a result of the Amendments. During 2022, the Company adopted the practical expedient for Reference Rate Reform related to its debt arrangements and as such, these amendments are treated as a continuation of the existing debt agreement and no gain or loss on the modification was recorded. The Company did not record any gains or losses on the conversion of the reference rate for Borrowings under the Term Loan Agreement from LIBOR to SOFR.

Interest expense for the years ended December 31, 2022, 2021 and 2020 was \$16.1 million, \$14.3 million and \$14.4 million, respectively.

12. Fair Value of Financial Instruments

The Company measures the following financial assets and liabilities at fair value on a recurring basis. The following tables set forth the Company's financial instruments and presents them within the fair value hierarchy using the lowest level of input that is significant to the fair value measurement (in millions):

December 31, 2022	Total	Quoted Prices in Active Markets Available (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Time deposits and money market funds	\$ 198.7	\$ 34.0	\$ 164.7	\$ —
Interest rate and cross-currency swap agreements	37.8	—	37.8	—
Forward currency contracts	0.6	—	0.6	—
Embedded derivatives in purchase and delivery contracts	0.1	—	0.1	—
Fixed price commodity contracts	0.6	—	0.6	—
Debt securities available for sale	10.5	—	—	10.5
Total assets recorded at fair value	<u>\$ 248.3</u>	<u>\$ 34.0</u>	<u>\$ 203.8</u>	<u>\$ 10.5</u>
Liabilities:				
Contingent consideration	\$ 9.6	\$ —	\$ —	\$ 9.6
Hybrid instruments liability	34.2	—	—	34.2
Liability awards	1.1	—	—	1.1
Interest rate and cross-currency swap agreements	12.2	—	12.2	—
Forward currency contracts	0.3	—	0.3	—
Long-term fixed interest rate debt	767.8	—	767.8	—
Total liabilities recorded at fair value	<u>\$ 825.2</u>	<u>\$ —</u>	<u>\$ 780.3</u>	<u>\$ 44.9</u>

December 31, 2021	Total	Quoted Prices in Active Markets Available (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Time deposits and money market funds	\$ 367.7	\$ —	\$ 367.7	\$ —
Short-term investments	100.0	—	100.0	—
Interest rate and cross-currency swap agreements	6.4	—	6.4	—
Forward currency contracts	0.7	—	0.7	—
Embedded derivatives in purchase and delivery contracts	0.2	—	0.2	—
Fixed price commodity contracts	0.4	—	0.4	—
Debt securities available for sale	1.2	—	—	1.2
Total assets recorded at fair value	<u>\$ 476.6</u>	<u>\$ —</u>	<u>\$ 475.4</u>	<u>\$ 1.2</u>
Liabilities:				
Contingent consideration	\$ 6.6	\$ —	\$ —	\$ 6.6
Hybrid instruments liability	15.6	—	—	15.6
Interest rate and cross-currency swap agreements	23.9	—	23.9	—
Forward currency contracts	0.3	—	0.3	—
Long-term fixed interest rate debt	1,043.3	—	1,043.3	—
Total liabilities recorded at fair value	<u>\$ 1,089.7</u>	<u>\$ —</u>	<u>\$ 1,067.5</u>	<u>\$ 22.2</u>

Derivative financial instruments are classified within level 2 because there is not an active market for each derivative contract. However, the inputs used to calculate the value of the instruments are obtained from active markets.

The Company measures certain assets and liabilities at fair value with changes in fair value recognized in earnings. Fair value treatment may be elected either upon initial recognition of an eligible asset or liability or, for an existing asset or liability, if an event triggers a new basis of accounting. The Company did not elect to remeasure any of its existing financial assets or liabilities and did not elect the fair value option for any financial assets or liabilities which originated during the year ended December 31, 2022 or 2021.

The fair value of the long-term fixed interest rate debt, which has been classified as Level 2, was based on market and observable sources with similar maturity dates. The remaining long-term debt has variable interest rates and the carrying value approximates fair value accordingly.

On a quarterly basis, the Company reviews its short-term investments to determine if there have been any events that could create an impairment. None were noted for the years ended December 31, 2022, 2021 and 2020.

Debt securities consist of investments in redeemable preferred stock. Debt securities are classified as either current or long-term investments based on their contractual maturities unless the Company intends to sell an investment within the next twelve months, in which case it is classified as current on the consolidated balance sheets. Debt securities are classified as available for sale and are carried at fair value.

Contingent consideration recorded within other current and other long-term liabilities represents the estimated fair value of future payments to the former shareholders as part of certain acquisitions. The contingent consideration is primarily based on the applicable acquired company achieving annual revenue and gross margin targets in certain years as specified in the relevant purchase and sale agreement. The Company initially values the contingent consideration on acquisition date by using a Monte Carlo simulation or an income approach method. The Monte Carlo method models future revenue and costs of goods sold projections and discounts the average results to present value. The income approach method involves calculating the earnout payment based on the forecasted cash flows, adjusting the future earnout payment for the risk of reaching the projected financials, and then discounting the future payments to present value by the counterparty risk. The counterparty risk considers the risk of the buyer having the cash to make the earnout payments and is commensurate with a cost of debt over an appropriate term.

The following table sets forth the changes in contingent consideration liabilities (in millions):

Balance at December 31, 2020	\$	4.3
Current period additions		2.6
Current period adjustments		0.2
Current period settlements		(0.4)
Foreign currency effect		(0.1)
Balance at December 31, 2021		6.6
Current period additions		3.6
Current period adjustments		5.6
Current period settlements		(5.9)
Foreign currency effect		(0.3)
Balance at December 31, 2022	\$	9.6

As part of the 2018 Mestrelab and 2022 PreOmics GmbH acquisitions, the Company entered into agreements with the noncontrolling interest holders that provide the Company with the right to purchase, and the noncontrolling interest holders with the right to sell, the remaining ownerships for cash at contractually defined redemption values. These rights (embedded derivatives) can be accelerated, at discounted redemption values, upon certain events related to post combination employment services. As the options are tied to continued employment, the Company classified the hybrid instruments (noncontrolling interests with an embedded derivatives) as liabilities on the consolidated balance sheet. Subsequent to the acquisitions, the carrying value of the hybrid instruments are remeasured to fair value with changes recorded to stock-based compensation expense in proportion to the respective requisite service period vested. During the year ended December 31, 2022, the Company acquired an additional 30% interest in Mestrelab for a purchase price of Euro 11.0 million (approximately \$11.6 million). The Company classified the hybrid instruments as Level 3 in the fair value hierarchy.

The following table sets forth the changes in hybrid instruments liability (in millions):

Balance at December 31, 2020	\$	13.9
Current period additions		2.7
Foreign currency effect		(1.0)
Balance at December 31, 2021		15.6
Current period additions		20.9
Current period adjustments		11.6
Current period settlements		(11.6)
Foreign currency effect		(2.3)
Balance at December 31, 2022	\$	34.2

13. Derivative Instruments and Hedging Activities

Interest Rate Risk

The Company's exposure to interest rate risk relates primarily to outstanding variable rate debt and adverse movements in the related market rates. Typically, the most significant component of the Company's interest rate risk relates to amounts outstanding under the 2019 Revolving Credit Agreement, the 2019 Term Loan and the 2021 Senior Notes.

Commodity Price Risk Management

The Company has arrangements with certain customers under which it has a firm commitment to deliver copper-based superconductors at a fixed price. In order to minimize the volatility that fluctuations in the price of copper have on the Company's sales of these commodities, the Company enters into commodity hedge contracts. As commodity contracts settle, gains (losses) as a result of changes in fair values are adjusted to the contracts with the customers through revenues.

Foreign Exchange Rate Risk Management

The Company generates a substantial portion of its revenues and expenses in international markets, principally Germany and other countries in the European Union and Switzerland, which subjects its operations to the exposure of exchange rate fluctuations. The impact of currency exchange rate movement can be positive or negative in any period. The Company periodically enters into foreign currency contracts in order to minimize the volatility that fluctuations in currency translation have on its monetary transactions. Under these arrangements, the Company typically agrees to purchase a fixed amount of a foreign currency in exchange

for a fixed amount of U.S. Dollars or other currencies on specified dates with maturities of less than twelve months, with some agreements extending to longer periods. These transactions do not qualify for hedge accounting and, accordingly, the instrument is recorded at fair value with the corresponding gains and losses recorded in the consolidated statements of income and comprehensive income.

In addition, the Company periodically enters into purchase and sales contracts denominated in currencies other than the functional currency of the parties to the transaction. The Company accounts for these transactions separately valuing the “embedded derivative” component of these contracts. The contracts, denominated in currencies other than the functional currency of the transacting parties, amounted to \$15.3 million and \$8.5 million for the purchase of products as of December 31, 2022 and 2021, respectively. There were no contracts denominated in currencies other than the functional currency of the transacting parties for the delivery of products as of December 31, 2022 and 2021, respectively. The changes in the fair value of these embedded derivatives are recorded in interest and other income (expense), net in the consolidated statements of income and comprehensive income.

The Company had the following notional amounts outstanding under foreign exchange contracts, cross-currency interest rate swap agreements and long-term debt designated as net investment hedges and the respective fair value of the instruments recorded in the consolidated balance sheets as follows (in millions):

	December 31, 2022		December 31, 2021	
	Notional (in USD)	Fair Value	Notional (in USD)	Fair Value
Derivatives designated as hedging instruments				
Interest rate cross-currency swap agreements				
Other current assets		\$ 14.8	\$	6.4
Other assets		23.0		—
Other current liabilities		—		(5.8)
Other long-term liabilities		(12.2)		(18.1)
	\$ 393.3	\$ 25.6	\$ 504.3	\$ (17.5)
Long-term debt				
Long-term debt	807.6	(17.0)	825.8	(35.1)
Total derivatives designated as hedging instruments	\$ 1,200.9	\$ 8.6	\$ 1,330.1	\$ (52.6)
Derivatives not designated as hedging instruments				
Forward currency contracts				
Other current assets	\$ 89.8	\$ 0.6	\$ 157.7	\$ 0.7
Other current liabilities	97.4	(0.3)	23.0	(0.3)
Embedded derivatives in purchase and delivery contracts				
Other current assets	15.3	0.1	8.5	0.2
Fixed price commodity contracts				
Other current assets	8.9	0.6	5.5	0.4
Total derivatives not designated as hedging instruments	\$ 211.4	\$ 1.0	\$ 194.7	\$ 1.0
Total derivatives	\$ 1,412.3	\$ 9.6	\$ 1,524.8	\$ (51.6)

The following is a summary of the gain (loss) included in the consolidated statements of income and comprehensive income related to the derivative instruments described above (in millions):

		Year Ended December 31,		
		2022	2021	2020
Derivatives not designated as hedging instruments				
Forward currency contracts	Interest and other income (expense), net	\$ (3.2)	\$ (5.5)	\$ 2.1
Embedded derivatives in purchase and delivery contracts	Interest and other income (expense), net	(0.1)	0.1	0.5
		(3.3)	(5.4)	2.6
Derivatives designated as cash flow hedging instruments				
Interest rate cross-currency swap agreements	Interest and other income (expense), net	0.1	(4.7)	(3.0)
Derivatives designated as net investment hedging instruments				
Interest rate cross-currency swap agreements	Interest and other income (expense), net	8.5	10.2	10.1
Total		<u>\$ 5.3</u>	<u>\$ 0.1</u>	<u>\$ 9.7</u>

		Year Ended December 31,		
		2022	2021	2020
Derivatives designated as cash flow hedging instruments				
Interest rate cross-currency swap agreements	Accumulated other comprehensive income, net of tax	\$ 21.2	\$ 15.0	\$ (20.4)
Derivatives designated as net investment hedging instruments				
Interest rate cross-currency swap agreements	Accumulated other comprehensive income, net of tax	9.1	25.6	(26.7)
Long-term debt	Accumulated other comprehensive income, net of tax	13.9	10.8	(28.7)
		23.0	36.4	(55.4)
Total		<u>\$ 44.2</u>	<u>\$ 51.4</u>	<u>\$ (75.8)</u>

14. Income Taxes

The domestic and foreign components of income before income taxes for the years ended December 31 (in millions):

	2022	2021	2020
Domestic	\$ (13.3)	\$ (15.4)	\$ (31.1)
Foreign	427.2	409.0	256.9
Total income before provision for income taxes	<u>\$ 413.9</u>	<u>\$ 393.6</u>	<u>\$ 225.8</u>

The components of the income tax provision for the years ended December 31 (in millions):

	2022	2021	2020
Current income tax expense (benefit):			
Federal	\$ (10.4)	\$ 1.0	\$ (0.5)
State	2.5	1.2	(0.5)
Foreign	135.3	118.0	85.4
Total current income tax expense	<u>127.4</u>	<u>120.2</u>	<u>84.4</u>
Deferred income tax expense (benefit):			
Federal	(3.1)	(7.8)	(4.9)
State	(1.7)	(2.5)	(1.0)
Foreign	(6.2)	3.1	(14.1)
Total deferred income tax benefit	<u>(11.0)</u>	<u>(7.2)</u>	<u>(20.0)</u>
Income tax provision	<u>\$ 116.4</u>	<u>\$ 113.0</u>	<u>\$ 64.4</u>

The income tax provision differs from the tax provision computed at the U.S. federal statutory rate due to the following significant components:

	2022	2021	2020
Statutory tax rate	21.0 %	21.0 %	21.0 %
Foreign tax rate differential	5.2 %	5.2 %	4.9 %
Permanent differences	1.1 %	1.2 %	2.0 %
U.S. tax on foreign earnings	(0.1) %	1.6 %	0.3 %
Stock compensation	(0.6) %	(2.5) %	(0.7) %
Mandatory repatriation	—	—	0.5 %
Tax contingencies	3.3 %	2.6 %	1.4 %
Change in tax rates	0.1 %	(0.1) %	0.1 %
Withholding taxes	—	—	(0.1) %
Repatriation of foreign earnings	0.2 %	(0.4) %	0.6 %
State income taxes, net of federal benefits	0.2 %	(0.4) %	(0.6) %
Research and development credits	(2.1) %	(0.9) %	(1.2) %
Other	(0.1) %	1.2 %	(0.7) %
Change in valuation allowance for unbenefited losses	(0.1) %	0.2 %	1.0 %
Effective tax rate	<u>28.1 %</u>	<u>28.7 %</u>	<u>28.5 %</u>

The tax effect of temporary items that give rise to significant portions of the deferred tax assets and liabilities are as follows (in millions):

	2022	2021
Deferred tax assets:		
Accrued expenses	\$ 4.4	\$ 0.3
Compensation	15.3	28.8
Section 174 capitalization	15.8	—
Disallowed interest carryforwards	9.1	9.3
Net operating loss carryforwards	21.9	23.5
Foreign tax and other tax credit carryforwards	20.3	21.4
Unrealized currency gain/loss	13.1	6.8
Inventory	1.9	—
Hedge unrealized FX gain/loss	—	12.5
Lease obligations	10.5	14.1
Other	4.8	2.4
Gross deferred tax assets	117.1	119.1
Less valuation allowance	(6.6)	(7.1)
Total deferred tax assets	110.5	112.0
Deferred tax liabilities:		
Accounts payable	7.7	—
Inventory	—	3.6
Hedge unrealized FX gain/loss	1.3	—
Deferred revenue	0.9	—
Fixed assets	10.1	6.1
Foreign patent reserves	2.9	4.4
Intangibles	53.8	32.6
Accrued expenses	1.3	0.5
Accrued withholding tax	7.9	6.7
Right-of-use asset	10.5	14.0
Other	—	0.2
Total deferred tax liabilities	96.4	68.1
Net deferred tax assets	\$ 14.1	\$ 43.9

The Company uses the liability method to account for income taxes. Under this method, deferred income taxes are recognized for the future tax consequences of differences between the tax and financial accounting bases of assets and liabilities at each reporting period. Deferred income taxes are based on enacted tax laws and statutory tax rates applicable to the period in which these differences are expected to affect taxable income. A valuation allowance is established when necessary to reduce deferred tax assets to the expected realizable amounts.

The Company can only recognize a deferred tax asset to the extent this it is “more likely than not” that these assets will be realized. Judgments around realizability depend on the availability and weight of both positive and negative evidence. Changes in the valuation allowance for deferred tax assets were as follows (in millions):

Balance at December 31, 2019	\$ 4.2
Increases recorded as part of acquisition purchase accounting	2.4
Balance at December 31, 2020	6.6
Increases recorded as an expense to income tax provision	0.5
Balance at December 31, 2021	7.1
Decrease recorded for state valuation allowance release	(0.5)
Balance at December 31, 2022	\$ 6.6

As of December 31, 2022, the Company had approximately \$65.8 million net operating loss carryforwards available to reduce state taxable income that are expected to expire at various times beginning in 2023. The Company also has approximately \$74.4 million of German Trade Tax and Corporate Income Tax net operating losses that are carried forward indefinitely. Additionally, the Company has \$15.2 million of other foreign net operating losses that are expected to expire at various times in the future. We had U.S. federal foreign tax credit carried forwards in the amount of \$5.2 million. We also had U.S. federal and state research and development tax credit of \$3.1 million and \$9.5 million respectively. Utilization of these credits and state net operating losses may be subject to annual limitations due to the ownership percentage change limitations provided by the Code Section 382 and similar state provisions. In the event of a deemed change in control under Code Section 382, an annual limitation on the utilization of net operating losses and

credits may result in the expiration of all or a portion of the net operating loss and credit carryforwards. Additionally, the Company has \$39.8 million of gross interest expense carryforward as provided by Code Section 163(j) that can be carried forward indefinitely.

At December 31, 2022 the Company recorded state income and foreign withholding taxes on the cash and liquid assets portion of the unremitted earnings and profits (E&P) of foreign subsidiaries expected to be repatriated from its foreign subsidiaries to the United States, except for amounts from certain subsidiaries, which the Company has asserted to be indefinitely reinvested. Specifically, the Company asserts that a total of \$2.5 billion of unremitted foreign earnings is indefinitely reinvested. This figure is comprised of \$1.7 billion in unremitted earnings as well as \$851 million of non-cash E&P in all jurisdictions not indefinitely reinvested. If this E&P is ultimately distributed to the United States in the form of dividends the Company would likely be subject to additional withholding tax. The Company estimates the amount of unrecognized deferred withholding taxes on the undistributed E&P to be approximately \$82.2 million at December 31, 2022.

The Company had gross unrecognized tax benefits, excluding interest, of approximately \$54.9 million as of December 31, 2022, that if recognized, would reduce the Company's effective tax rate. In the next twelve months it is reasonably possible that the Company will reduce its unrecognized tax benefits by an immaterial amount due to the expiration of statutes of limitations. A tabular reconciliation of the Company's gross unrecognized tax benefits is as follows (in millions):

Gross unrecognized tax benefits at December 31, 2019	\$	15.9
Gross increases—tax positions in prior periods		1.2
Gross increases—current period tax positions		5.6
Gross unrecognized tax benefits at December 31, 2020		22.7
Gross increases—tax positions in prior periods		17.8
Gross increases—current period tax positions		10.9
Gross unrecognized tax benefits at December 31, 2021		51.4
Gross decreases—tax positions in prior periods		(8.2)
Gross increases—current period tax positions		11.7
Gross unrecognized tax benefits at December 31, 2022	\$	54.9

The Company's policy is to include accrued interest and penalties related to unrecognized tax benefits and income tax liabilities, when applicable, in income tax expense. At December 31, 2022 and 2021, the Company had approximately \$4.2 million and \$3.1 million, respectively, of accrued interest and penalties related to uncertain tax positions included in other long-term liabilities in the consolidated balance sheets. The Company recorded expense of \$1.1 million and \$1.5 million for penalties and interest related to unrecognized tax benefits in the provision for income taxes during the years ended December 31, 2022 and 2021, respectively.

The Company files tax returns in the United States, which includes federal, state and local jurisdictions, and many foreign jurisdictions with varying statutes of limitations. The Company considers Germany, the United States and Switzerland to be its significant tax jurisdictions. The majority of the Company's earnings are derived in Germany and Switzerland. Accounting for the various federal and local taxing authorities, the statutory rates for 2022 were approximately 30.0% and 20.0% for Germany and Switzerland, respectively. The mix of earnings in those two jurisdictions resulted in an increase of 5.7% from the U.S. statutory rate of 21% in 2022.

The Company has been subject to tax examinations in Germany for the years 2009 through 2012 whereby the German tax authorities had imposed additional tax assessments for those years. Due to the nature of the additional tax assessments, the Company filed for competent authority relief from those assessments and reached a final resolution during the first quarter of 2022. In addition, the Company has been subject to tax examinations for the years 2013-2017 with Germany taxing authorities and 2013-2022 in various taxing authorities.

In 2020, the Company was granted an income tax holiday for our manufacturing facility in Malaysia. The tax holiday allows for tax-free operations through February 28, 2023, with the option to apply for a 5 year extension if certain conditions are met. This tax holiday had an immaterial impact to earnings per share for the year ended December 31, 2022.

In connection with the Tax Cuts and Jobs Act ("TCJA") of 2017, the Company recorded a toll charge liability of \$35.4 million. Of that amount, approximately \$14.2 million has already been paid as of December 31, 2022.

In July and August 2022, the CHIPS and Science Act, of CHIPS, and the Inflation Reduction Act, or IRA were signed into law. The IRA introduced tax provisions primarily focused on implementing a 15% corporate alternative minimum tax on global adjusted financial statement income of certain large corporations and 1% excise tax on share repurchases, which are both effective January 1, 2023. While we are still evaluating the impact of the provisions in the Inflation Reduction Act, we do not believe this legislation will have a material impact on our consolidated financial statements.

Under the Tax Cuts and Jobs Act of 2017, research and development costs are no longer fully deductible and are required to be capitalized and amortized for U.S. tax purposes effective January 1, 2022. The mandatory capitalization did not result in a material impact in the overall effective tax rate for the year ended December 31, 2022.

15. Leases

Operating lease cost is recognized over the lease term on a straight-line basis, while finance lease cost is amortized over the expected term on a straight-line basis. Variable lease cost not dependent on an index or rate is recognized when incurred and typically consists of amounts owed by the Company to a lessor that are not fixed, such as reimbursement for common area maintenance and utilities cost.

The components of lease expense were as follows (in millions):

	2022	2021	2020
Amortization of right-of-use assets	\$ 3.3	\$ 1.5	\$ 0.7
Interest on lease liabilities	0.6	0.1	0.1
Total finance lease cost	3.9	1.6	0.8
Operating lease cost	20.4	24.0	23.3
Short term lease cost	5.6	4.2	3.9
Variable lease cost	5.0	3.0	3.4
Sublease income	(1.7)	(2.0)	(1.9)
Total lease cost	\$ 33.2	\$ 30.8	\$ 29.5

Supplemental balance sheet information related to leases was as follows (dollars in millions):

	December 31,	
	2022	2021
Operating leases		
Operating lease assets, net	\$ 51.2	\$ 59.9
Other current liabilities	16.4	17.9
Operating lease liability—long term	34.8	41.8
	December 31,	
	2022	2021
Weighted average remaining lease term	4.6	5.1 years
Weighted average discount rate	1.8 %	1.6 %
	December 31,	
	2022	2021
Finance leases		
Property, plant and equipment, net	\$ 14.2	\$ 4.6
Current portion of long-term debt	2.4	1.7
Long-term debt	11.7	2.6
	December 31,	
	2022	2021
Weighted average remaining lease term	10.2	2.9 years
Weighted average discount rate	3.0 %	1.6 %

Supplemental cash flow information related to leases was as follows (in millions):

	2022	2021	2020
Cash paid for amounts included in the measurement of lease liabilities			
Operating cash flows from finance leases	\$ 0.6	\$ 0.1	\$ 0.1
Operating cash flows from operating leases	20.1	21.2	24.0
Financing cash flows from finance leases	3.3	1.6	0.9
Right-of-use assets obtained in exchange for lease liabilities			
Operating leases	\$ 22.8	\$ 21.2	\$ 24.3
Finance leases	13.6	2.7	2.6

Future lease payments under operating leases and finance leases as follows (in millions):

	Operating Leases	Finance Leases
Twelve months ending December 31:		
2023	\$ 16.5	\$ 2.7
2024	11.5	2.2
2025	8.6	1.6
2026	6.1	1.1
2027	3.4	0.9
Thereafter	5.1	7.2
Total undiscounted lease payments	51.2	15.7
Less: imputed interest	—	(1.6)
Total lease liabilities	\$ 51.2	\$ 14.1

16. Post Retirement Benefit Plans

Defined Contribution Plans

The Company sponsors various defined contribution plans that cover certain domestic and international employees. The Company may make contributions to these plans at its discretion. The Company contributed \$11.0 million, \$9.4 million and \$8.1 million to such plans in the years ended December 31, 2022, 2021 and 2020, respectively.

Defined Benefit Plans

Substantially all of the Company's employees in Switzerland, France, Japan and Thailand, as well as certain employees in Germany, are covered by Company-sponsored defined benefit pension plans. Retirement benefits are generally earned based on years of service and compensation during active employment. Eligibility is generally determined in accordance with local statutory requirements; however, the level of benefits and terms of vesting varies among plans.

The Company records pension service cost within cost of sales, selling, general and administrative, and research and development expenses while non-service related pension costs are recorded within interest and other income (expense), net in the consolidated statements of income and comprehensive income. The components of net periodic benefit costs included in the accompanying consolidated statements of income were as follows (in millions):

	2022	2021	2020
Components of net periodic benefit costs:			
Service cost	\$ 6.5	\$ 8.1	\$ 8.2
Interest cost	1.0	0.5	1.1
Expected return on plan assets	(1.7)	(1.8)	(2.5)
Settlement (gain) loss recognized	(0.3)	0.1	—
Amortization of prior service (credit) cost	(0.2)	0.9	1.2
Amortization of actuarial losses	2.2	2.6	3.5
Net periodic benefit costs	\$ 7.5	\$ 10.4	\$ 11.5

The Company measures its benefit obligation and the fair value of plan assets as of December 31st each year. The changes in benefit obligations and plan assets under the defined benefit pension plans, projected benefit obligation and funded status of the plans were as follows (in millions):

	2022	2021
Change in benefit obligation:		
Benefit obligation at beginning of year	\$ 253.9	\$ 275.2
Service cost	6.5	8.1
Interest cost	1.0	0.5
Plan participant contributions	5.1	5.2
Plan amendments	(2.9)	(10.9)
Plan settlements	(6.8)	(0.5)
Benefits paid	(2.1)	(6.4)
Actuarial gain	(48.8)	(5.4)
Premiums paid	(1.7)	(1.8)
Plan combinations / acquisitions	0.8	—
Impact of foreign currency exchange rates	(7.2)	(10.1)
Benefit obligation at end of year	197.8	253.9
Change in plan assets:		
Fair value of plan assets at beginning of year	147.8	150.5
Return on plan assets	2.5	(2.1)
Plan participant and employer contributions	11.9	12.4
Benefits paid	(2.1)	(6.4)
Plan settlements	(6.8)	(0.5)
Premiums paid	(1.7)	(1.8)
Plan combinations / acquisitions	0.4	—
Impact of foreign currency exchange rates	(1.7)	(4.3)
Fair value of plan assets at end of year	150.3	147.8
Net under-funded status	<u>\$ (47.5)</u>	<u>\$ (106.1)</u>

Plan amendments relate to further reductions in the mandatory and the supplementary conversion rates for the pension plan in Switzerland that will be effective in 2023 and in 2024, respectively. The accumulated benefit obligation for the defined benefit pension plans is \$168.6 million and \$225.8 million at December 31, 2022 and 2021, respectively. All defined benefit pension plans have an accumulated benefit obligation and projected benefit obligation in excess of plan assets at December 31, 2022 and 2021.

The following amounts were recognized in the accompanying consolidated balance sheets for the Company's defined benefit plans (in millions):

	2022	2021
Current liabilities	\$ (1.8)	\$ (1.8)
Non-current liabilities	(45.7)	(104.3)
Net benefit obligation	<u>\$ (47.5)</u>	<u>\$ (106.1)</u>

The following pre-tax amounts were recognized in accumulated other comprehensive income for the Company's defined benefit plans (in millions):

	2022	2021	2020
Reconciliation of amounts recognized in the consolidated balance sheets:			
Prior service cost (credit)	\$ 12.0	\$ 9.4	\$ (2.4)
Net actuarial gain (loss)	4.2	(50.1)	(56.6)
Accumulated other comprehensive gain (loss)	16.2	(40.7)	(59.0)
Accumulated contributions in excess of net periodic benefit cost	(63.7)	(65.4)	(65.7)
Net amount recognized	<u>\$ (47.5)</u>	<u>\$ (106.1)</u>	<u>\$ (124.7)</u>

The amount in accumulated other comprehensive income at December 31, 2022 expected to be recognized as amortization of net loss within net periodic benefit cost in 2023 is \$(0.4) million.

For the defined benefit pension plans, the Company uses a corridor approach to amortize actuarial gains and losses. Under this approach, net actuarial gains or losses in excess of ten percent of the larger of the projected benefit obligation or the fair value of plan assets are amortized over the average remaining service of active participants who are expected to receive benefits under the plans.

The following assumptions were used for defined benefit pension plans reflects the different economic environments within the various countries. The assumptions used to determine the net periodic benefit costs and the projected benefit obligations are as follows:

2022	Japan	France	Switzerland	Germany	Thailand
Annual discount rate—defined benefit obligation	0.9 %	3.8 %	2.4 %	3.9 %	3.7 %
Annual discount rate—defined benefit cost	0.4 %	1.0 %	0.4 %	0.8 %	2.5 %
Expected return on plan assets	— %	3.0 %	1.2 %	— %	— %
Expected rate of compensation increase	3.0 %	3.0 %	2.3 %	2.6 %	5.6 %
2021	Japan	France	Switzerland	Germany	Thailand
Annual discount rate—defined benefit obligation	0.4 %	1.0 %	0.4 %	0.8 %	— %
Annual discount rate—defined benefit cost	0.4 %	0.6 %	0.1 %	0.5 %	— %
Expected return on plan assets	— %	3.0 %	1.2 %	0.0 %	— %
Expected rate of compensation increase	3.0 %	2.0 %	1.0 %	2.6 %	— %
2020	Japan	France	Switzerland	Germany	Thailand
Annual discount rate—defined benefit obligation	0.4 %	0.6 %	0.1 %	0.5 %	— %
Annual discount rate—defined benefit cost	0.3 %	0.8 %	0.3 %	1.1 %	— %
Expected return on plan assets	— %	3.0 %	1.8 %	— %	— %
Expected rate of compensation increase	3.0 %	2.0 %	1.0 %	2.6 %	— %

To determine the expected long-term rate of return on pension plan assets, the Company considers current asset allocations, as well as historical and expected returns on various asset categories of plan assets. For the defined benefit pension plans, the Company applies the expected rate of return to a market-related value of assets, which stabilizes variability in assets to which the expected return is applied.

Asset Allocations by Asset Category

The fair value of the Company's pension plan assets by asset category and by level in the fair value hierarchy, is as follows (in millions):

	Total	Quoted Prices in Active Markets Available (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
December 31, 2022				
Plan Assets:				
Group BPCE Life (a)	\$ 0.1	\$ —	\$ —	\$ 0.1
Swiss Life Collective BVG Foundation (b)	150.2	—	—	150.2
Total plan assets	<u>\$ 150.3</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 150.3</u>
December 31, 2021				
Plan Assets:				
Group BPCE Life (a)	\$ 0.1	\$ —	\$ —	\$ 0.1
Swiss Life Collective BVG Foundation (b)	147.7	—	—	147.7
Total plan assets	<u>\$ 147.8</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 147.8</u>

- (a) The Company's pension plan in France is invested in a larger fund that invests in a variety of instruments. The assets are not directly dedicated to the French pension plan. The Group BPCE Life fund invests in debt securities of foreign corporations and governments, equity securities of foreign government funds and private real estate funds.

- (b) The Company's pension plan in Switzerland is outsourced to Swiss Life AG, an outside insurance provider. Under the insurance contract, the plan assets are invested in Swiss Life Collective BVG Foundation (the Foundation), which is an umbrella fund for which the retirement savings and interest rates are guaranteed a minimum of 1.0% on the mandatory withdrawal portion, as defined by Swiss law, and 0.25% on the non-mandatory portion starting 2023. The Foundation utilizes plan administrators and investment managers to oversee the investment allocation process, set long-term strategic targets and monitor asset allocations. The target allocations are 65% bonds, 2.5% cash, 7.5% equity investments and 25% real estate and mortgages. Should the Foundation yield a return greater than the guaranteed amounts, the Company, according to Swiss law, shall receive 90% of the additional return with Swiss Life AG retaining 10%. All investments and insurance risks are fully covered and there is a 100% capital and interest rate guarantee provided by Swiss Life. The withdrawal benefits and interest allocations are secured at all times by Swiss Life AG.

Contributions and Estimated Future Benefit Payments

For all of our plans except Switzerland, we do not have plan assets to payout benefit payments. Contributions are expected to be consistent with estimated benefit payments for the next fiscal year. The estimated future benefit payments are based on the same assumptions used to measure the Company's benefit obligation at December 31, 2022. The following benefit payments reflect future employee service as appropriate (in millions):

2023	\$	8.1
2024		8.3
2025		8.3
2026		8.3
2027		8.6
2028-2032		48.6

17. Commitments and Contingencies

Litigation and Related Contingencies

Lawsuits, claims and proceedings of a nature considered normal to its businesses may be pending from time to time against the Company. Third parties might allege that the Company or its collaborators are infringing their patent rights or that the Company is otherwise violating their intellectual property rights. The Company believes the outcome of pending proceedings, individually and in the aggregate, will not have a material impact on the Company's financial statements.

On September 25, 2019, in a complaint filed in the District Court of Düsseldorf, Germany, Carl Zeiss Microscopy GmbH, a subsidiary of Carl Zeiss AG (Zeiss), sued Luxendo GmbH (Luxendo), a subsidiary of Bruker Corporation, for infringement of a registered German utility model patent licensed to Zeiss pertaining to one specific Luxendo product category. Luxendo defended against these claims and, on December 14, 2021, obtained a decision by the German Patent and Trademark Office canceling the utility model. Zeiss' appeal against the cancellation was unsuccessful and, on December 19, 2022, Zeiss withdrew its complaint. Luxendo is entitled to reimbursement of its statutory fees in the infringement case as well as in the cancellation action.

A parallel European patent application, from which the utility model was derived, is pending in the European Patent Office (EPO). Luxendo filed third-party observations in the proceedings concerning the grant of the patent application. On March 25, 2022, the EPO communicated to the applicant that Luxendo's observations had merit and confirmed its position on October 14, 2022. A hearing regarding the EPO's concerns about patentability is scheduled for the second quarter of 2023. Luxendo is presently unable to predict the outcome of the EPO's evaluation of the patent application.

At December 31, 2022 and 2021, no material accruals have been recorded for potential contingencies.

Governmental Investigations

The Company is subject to regulation by national, state and local government agencies in the United States and other countries in which it operates. From time to time, the Company is the subject of governmental investigations often involving regulatory, marketing and other business practices. These governmental investigations may result in the commencement of civil and criminal proceedings, fines, penalties and administrative remedies which could have a material adverse effect on the Company's financial position, results of operations and/or liquidity.

At December 31, 2022 and 2021, no material accruals have been recorded for potential contingencies related to these matters. The Company does not expect additional losses to be incurred in excess of the amounts accrued.

Unconditional Purchase Commitments

The Company has entered into unconditional purchase commitments, in the ordinary course of business, that include agreements to purchase goods, services or fixed assets and to pay royalties that are enforceable and legally binding and that specify all significant terms including: fixed or minimum quantities to be purchased; fixed, minimum or variable price provisions; and the approximate timing of the transaction. Purchase commitments exclude agreements that are cancelable at any time without penalty. The majority of these commitments are expected to be settled during 2023.

Unconditional purchase commitments that are fixed and determinable are as follows (in millions):

2023	\$	343.1
2024		22.9
2025		3.7
2026		0.1
2027		7.4
Total	\$	<u>377.2</u>

License Agreements

The Company has entered into license agreements allowing it to utilize certain patents. If these patents are used in connection with a commercial product sale, the Company pays royalties on the related product revenues. Licensing fees for the years ended December 31, 2022, 2021 and 2020, were \$6.4 million, \$5.8 million and \$8.4 million, respectively, and are recorded in cost of product revenue in the consolidated statements of income and comprehensive income.

Letters of Credit and Guarantees

At December 31, 2022 and 2021, the Company had bank guarantees of \$130.7 million and \$116.4 million, respectively, related primarily to customer advances. These arrangements guarantee the refund of advance payments received from customers in the event that the merchandise is not delivered or warranty obligations are not fulfilled in compliance with the terms of the contract. These guarantees affect the availability of the Company's lines of credit.

Indemnifications

The Company enters into standard indemnification arrangements in the Company's ordinary course of business. Pursuant to these arrangements, the Company indemnifies, holds harmless, and agrees to reimburse the indemnified parties for losses suffered or incurred by the indemnified party. These parties are generally the Company's directors, officers, business partners or customers, in connection with any patent, or any copyright or other intellectual property infringement claim by any third party with respect to its products. The term of these indemnification agreements is generally perpetual any time after the execution of the agreement. The maximum potential amount of future payments the Company could be required to make under these agreements is unlimited. The Company believes the estimated fair value of these agreements is minimal based on historical experiences.

18. Earnings Per Share

The following table sets forth the computation of basic and diluted weighted average shares outstanding and net income per common share attributable to Bruker shareholders (in millions, except per share amounts):

	2022	2021	2020
Net income attributable to Bruker Corporation, as reported	<u>\$ 296.6</u>	<u>\$ 277.1</u>	<u>\$ 157.8</u>
Weighted average common shares outstanding:			
Weighted average common shares outstanding - basic	148.6	151.4	153.4
Effect of dilutive securities:			
Stock options, restricted stock awards and restricted stock units	0.8	1.5	1.2
Weighted average common shares outstanding - diluted	<u>149.4</u>	<u>152.9</u>	<u>154.6</u>
Net income per common share attributable to Bruker Corporation shareholders:			
Basic	<u>\$ 2.00</u>	<u>\$ 1.83</u>	<u>\$ 1.03</u>
Diluted	<u>\$ 1.99</u>	<u>\$ 1.81</u>	<u>\$ 1.02</u>

The following common share equivalents have been excluded from the computation of diluted weighted-average shares outstanding, as their effect would have been anti-dilutive (in millions of shares):

	2022	2021	2020
Stock options	0.1	—	0.2
Unvested restricted stock units	—	0.1	—

19. Shareholders' Equity

Share Repurchase Program

In May 2019, the Company's Board of Directors approved a share repurchase plan (the "2019 Repurchase Program") authorizing the purchase of the Company's common stock up to \$300.0 million from time to time, in amounts, at prices, and at such times as management deems appropriate, subject to market conditions, legal requirements and other considerations. The Company purchased a total of 555,602 shares at an aggregate cost of \$34.5 million under the 2019 Repurchase Program during the year ended December 31, 2021. The Company completed the 2019 Repurchase Program in April 2021, after reaching the maximum cumulative spend.

In May 2021, the Company's Board of Directors approved a share repurchase plan (the "2021 Repurchase Program") authorizing the purchase of the Company's common stock up to \$500.0 million from time to time over a two-year period, in amounts, at prices, and at such times as management deems appropriate, subject to market conditions, legal requirements and other considerations. The Company purchased a total of 4,215,094 shares at an aggregate cost of \$264.7 million during the year ended December 31, 2022. The Company purchased a total of 1,537,217 shares at an aggregate cost of \$118.9 million during the year ended December 31, 2021. The remaining authorization as of December 31, 2022 is \$116.6 million. At February 22, 2023, \$94.4 million remains for future purchase under the 2021 Repurchase Program.

Cash Dividends on Common Stock

Dividends are declared by the Company's Board of Directors ("Board") in accordance with the Company's dividend policy. Under the policy, the Company targeted a \$0.16 per share cash dividend per annum to the Company's shareholders payable in equal quarterly installments. Beginning in 2022, the Company is targeting a cash dividend to our shareholders in the amount of \$0.20 per share per annum, payable in equal quarterly installments.

Subsequent dividend declarations and the establishment of record and payment dates for such future dividend payments, if any, are subject to the Board's continuing determination that the dividend policy is in the best interests of the Company's shareholders. The dividend policy may be suspended or canceled at the discretion of the Board at any time. In February 2023, the Company announced that our Board had declared a quarterly dividend of \$0.05 per share that will be payable in March 2023.

Accumulated Other Comprehensive Income (Loss)

The following is a summary of the components of accumulated other comprehensive income (loss), net of tax (in millions):

	Foreign Currency Translation	Derivatives Designated As Hedging Instruments	Pension Liability Adjustment	Accumulated Other Comprehensive Income (Loss)
Balance at December 31, 2019	\$ 43.1	\$ (15.7)	\$ (52.9)	\$ (25.5)
Other comprehensive income (loss)	97.8	(75.8)	2.3	24.3
Realized gain on reclassification	—	—	4.9	4.9
Balance at December 31, 2020	140.9	(91.5)	(45.7)	3.7
Other comprehensive (loss) income	(77.8)	51.4	11.6	(14.8)
Realized gain on reclassification	—	—	2.9	2.9
Balance at December 31, 2021	63.1	(40.1)	(31.2)	(8.2)
Other comprehensive income (loss)	(66.2)	44.2	43.8	21.8
Realized gain on reclassification	—	—	1.2	1.2
Balance at December 31, 2022	<u>\$ (3.1)</u>	<u>\$ 4.1</u>	<u>\$ 13.8</u>	<u>\$ 14.8</u>

Stock Compensation Plans

On March 9, 2010, the Company's Board of Directors unanimously approved and adopted the Bruker Corporation 2010 Incentive Compensation Plan (the "2010 Plan"), and on May 14, 2010, the 2010 Plan was approved by the Company's shareholders. The 2010 Plan provided for the issuance of up to 8,000,000 shares of the Company's common stock. The 2010 Plan allowed a committee of the Board of Directors determined to be the Compensation Committee, to grant incentive stock options, non-qualified stock options and restricted stock awards. The Compensation Committee had the authority to determine which employees would receive the awards, the amount of the awards and other terms and conditions of any awards. Awards granted under the 2010 Plan typically were made subject to a vesting period of three to five years. As of December 31, 2022, 5,545,090 options and 570,011 restricted stock awards have been granted under the 2010 Plan. At December 31, 2022, 393,535 options were outstanding under the 2010 Plan.

In May 2016, the Bruker Corporation 2016 Incentive Compensation Plan (the "2016 Plan") was approved by the Company's shareholders. With the approval of the 2016 Plan, no further grants will be made under the 2010 Plan. The 2016 Plan provides for the issuance of up to 9,500,000 shares of the Company's common stock and permits the grant of awards of non-qualified stock options, incentive stock options, stock appreciation rights, restricted stock, unrestricted stock, restricted stock units, performance shares and performance units, as well as cash-based awards. The 2016 Plan is administered by the Compensation Committee. The Compensation Committee has the authority to determine which employees will receive awards, the amount of any awards, and other terms and conditions of such awards. Stock option awards granted under the 2016 Plan typically vest over a period of one to four years. As of December 31, 2022, 1,559,188 options and 2,391,596 restricted stock units have been granted under the 2016 Plan. At December 31, 2022, 780,090 options and 635,868 restricted stock units were outstanding under the 2016 Plan.

In June 2022, the Company's shareholders approved the 2022 Employee Stock Purchase Plan, under which eligible employees may contribute up to 10% of their earnings toward the semi-annual purchase of the Company's stock. The plan makes available 2,500,000 shares. Each plan enrollment period covers six months beginning June 1 and December 1 of each year. The purchase price per share of the Company's stock is equal to 90% of the lower of (1) the fair market value per share of the Company's stock on the first day of the applicable purchase period or (2) the fair market value per share of the Company's stock on the applicable purchase date, unless otherwise specified by the Plan Administrator before the start of any purchase period.

Members of the Company's Board of Directors receive an annual award of restricted stock units which vest over a one-year service period. Stock options to purchase the Company's common stock are periodically awarded to executive officers and other employees of the Company subject to a vesting period of three to four years. Restricted shares of the Company's common stock were periodically awarded to executive officers, directors and certain key employees of the Company, subject to service restrictions, which vested ratably over periods of one to four years. The restricted shares of common stock may not be sold or transferred during the restriction period. Restricted stock units of the Company's common stock are periodically awarded to executive officers, directors and certain employees of the Company which vest ratably over service periods of one to four years.

Stock-based Compensation

The following presents the impact of stock-based compensation expense on our consolidated statements of income (in millions):

	2022	2021	2020
Stock options	\$ 1.5	\$ 1.3	\$ 1.8
Restricted stock units	14.1	13.2	11.5
Employee Stock Purchase Plan	0.1	—	—
Total stock-based compensation	<u>\$ 15.7</u>	<u>\$ 14.5</u>	<u>\$ 13.3</u>

	2022	2021	2020
Cost of product revenue	\$ 1.1	\$ 2.2	\$ 2.0
Selling, general and administrative	13.3	10.1	9.3
Research and development	1.3	2.2	2.0
Total stock-based compensation	<u>\$ 15.7</u>	<u>\$ 14.5</u>	<u>\$ 13.3</u>

In addition to the awards above, the Company recorded stock-based compensation within other charges, net of \$12.0 million, \$2.7 million and \$2.6 million at December 31, 2022, 2021, and 2020, respectively, related to the Mestrelab and PreOmics acquisitions.

At December 31, 2022, the Company expects to recognize pre-tax stock-based compensation expense of \$3.2 million associated with outstanding stock option awards granted under the Company's stock plans over the weighted average remaining service period of 2.4 years. The Company also expects to recognize additional pre-tax stock-based compensation expense of \$30.9 million associated with outstanding restricted stock units granted under the Company's 2016 Incentive Compensation Plan over the weighted average remaining service period of 2.5 years.

Stock Option Awards

Stock option activity for the year ended December 31, 2022 is as follows:

	Number of Options	Weighted-Average Price Per Share	Weighted - Average Remaining Contractual Term (in Years)	Aggregate Intrinsic Value (in millions) (a)
Outstanding at December 31, 2021	1,355,152	\$ 30.98	4.1	\$ 71.9
Granted	73,365	65.43		
Exercised	(251,006)	23.26		
Forfeited/Expired	(3,886)	22.88		
Outstanding at December 31, 2022	<u>1,173,625</u>	<u>\$ 34.81</u>	<u>3.7</u>	<u>\$ 40.8</u>
Exercisable at December 31, 2022	<u>949,574</u>	<u>\$ 28.29</u>	<u>3.2</u>	<u>\$ 38.4</u>
Exercisable and expected to vest at December 31, 2022 (b)	<u>1,149,503</u>	<u>\$ 34.16</u>	<u>3.6</u>	<u>\$ 40.6</u>

- Represents the number of vested options at December 31, 2022, plus the number of unvested options at December 31, 2022 that are ultimately expected to vest based on our estimated forfeiture rate.
- The aggregate intrinsic value is calculated as the positive difference between the exercise price of the underlying options and the quoted price of our common stock on December 31, 2022.

The total intrinsic value of options exercised was \$10.7 million, \$35.7 million and \$6.1 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Restricted Stock Units

Restricted stock unit activity is presented below:

	Shares Subject to Restriction	Weighted- Average Grant Date Fair Value Per Share
Outstanding at December 31, 2021	654,470	\$ 53.44
Granted	291,015	63.01
Vested	(281,096)	47.61
Forfeited	(28,521)	57.30
Outstanding at December 31, 2022	635,868	\$ 60.23

The total fair value of restricted stock vested was \$17.7 million, \$27.1 million and \$15.0 million for the years ended December 31, 2022, 2021 and 2020, respectively.

20. Other Charges, Net

The components of other charges, net were as follows (in millions):

	2022	2021	2020
Acquisition-related expenses, net	\$ 19.3	\$ 6.1	\$ 2.4
Professional fees incurred in connection with investigation matters and other legal matters	2.4	1.1	5.9
Information technology transformation costs	3.0	2.8	2.5
Restructuring charges	3.9	4.8	12.0
Long-lived asset impairments	0.3	(0.5)	2.1
Other	0.8	—	—
Other charges, net	\$ 29.7	\$ 14.3	\$ 24.9

Restructuring Initiatives

Restructuring charges for the years ended December 31, 2022, 2021 and 2020 included charges for various other programs which were recorded in the accompanying consolidated statements of income and comprehensive income as follows (in millions):

	2022	2021	2020
Cost of revenues	\$ 0.9	\$ 3.4	\$ 3.8
Other charges, net	3.9	4.8	12.0
	\$ 4.8	\$ 8.2	\$ 15.8

The following table sets forth the changes in the restructuring reserves (in millions):

	Total	Severance	Exit Costs	Provisions for Excess Inventory
Balance at December 31, 2019	\$ 4.6	\$ 2.2	\$ 0.1	\$ 2.3
Restructuring charges	15.8	13.6	2.0	0.2
Cash payments	(10.0)	(8.0)	(2.0)	—
Non-cash adjustments	(1.0)	(0.5)	0.7	(1.2)
Foreign currency impact	0.4	0.3	—	0.1
Balance at December 31, 2020	\$ 9.8	\$ 7.6	\$ 0.8	\$ 1.4
Restructuring charges	8.2	5.3	1.5	1.4
Cash payments	(10.3)	(9.3)	(1.0)	—
Non-cash adjustments	(1.1)	—	(1.0)	(0.1)
Foreign currency impact	(0.2)	(0.1)	—	(0.1)
Balance at December 31, 2021	\$ 6.4	\$ 3.5	\$ 0.3	\$ 2.6
Restructuring charges	4.8	2.4	2.3	0.1
Cash payments	(7.8)	(5.4)	(2.4)	—
Non-cash adjustments	(1.4)	—	—	(1.4)
Foreign currency impact	(0.2)	(0.1)	—	(0.1)
Balance at December 31, 2022	<u>\$ 1.8</u>	<u>\$ 0.4</u>	<u>\$ 0.2</u>	<u>\$ 1.2</u>

21. Interest and Other Income (Expense), Net

The components of interest and other income (expense), net were as follows (in millions):

	2022	2021	2020
Interest and other income	\$ 4.1	\$ 0.9	\$ 3.2
Interest expense	(16.1)	(14.3)	(14.4)
Exchange losses on foreign currency transactions	(5.8)	(4.1)	(8.0)
Pension components	(1.0)	(2.2)	(3.3)
Interest and other income (expense), net	<u>\$ (18.8)</u>	<u>\$ (19.7)</u>	<u>\$ (22.5)</u>

22. Business Segment Information

The Company has four reportable segments, BSI BioSpin, BSI CALID, BSI Nano and BEST, as discussed in Note 1 to the consolidated financial statements.

Selected reportable segment information is presented below (in millions):

	2022	2021	2020
Revenue:			
BSI BioSpin	\$ 696.7	\$ 691.0	\$ 600.0
BSI CALID	822.2	819.6	653.9
BSI Nano	787.0	697.5	556.1
BEST	237.1	223.8	189.5
Eliminations (a)	(12.3)	(14.0)	(12.0)
Total revenue	<u>\$ 2,530.7</u>	<u>\$ 2,417.9</u>	<u>\$ 1,987.5</u>
Operating Income:			
BSI BioSpin	\$ 167.1	\$ 158.2	\$ 121.6
BSI CALID	196.0	227.2	152.2
BSI Nano	113.0	73.4	23.6
BEST	31.3	22.2	6.2
Corporate, eliminations and other (b)	(74.7)	(67.7)	(55.3)
Total operating income	<u>\$ 432.7</u>	<u>\$ 413.3</u>	<u>\$ 248.3</u>

(a) Represents product and service revenue between reportable segments.

(b) Represents corporate costs and eliminations not allocated to the reportable segments.

Total assets by segment are as follows (in millions):

	2022	2021
Assets:		
BSI BioSpin, BSI CALID, BSI Nano & Corporate	\$ 3,508.4	\$ 3,560.5
BEST	111.1	97.9
Eliminations and other (a)	(7.7)	(8.4)
Total assets	<u>\$ 3,611.8</u>	<u>\$ 3,650.0</u>

(a) Assets not allocated to the reportable segments and eliminations of intercompany transactions.

The Company is unable, without unreasonable effort or expense to disclose the amount of total assets by the BSI BioSpin, BSI CALID and BSI Nano Segments as well as the Corporate function and further, the Company's chief operating decision maker does not receive any asset information by operating segment.

Total capital expenditures and depreciation and amortization by segment are presented below (in millions):

	2022	2021	2020
Capital Expenditures:			
BSI BioSpin	\$ 14.5	\$ 36.6	\$ 43.0
BSI CALID	33.9	24.7	16.1
BSI Nano	20.2	16.8	10.6
Corporate	9.1	4.7	17.4
BEST	51.5	9.2	10.1
Total capital expenditures	<u>\$ 129.2</u>	<u>\$ 92.0</u>	<u>\$ 97.2</u>
Depreciation and Amortization:			
BSI BioSpin	\$ 22.6	\$ 21.3	\$ 18.0
BSI CALID	20.7	19.8	17.0
BSI Nano	35.6	37.4	35.7
Corporate	3.9	4.3	4.0
BEST	6.0	6.3	5.7
Total depreciation and amortization	<u>\$ 88.8</u>	<u>\$ 89.1</u>	<u>\$ 80.4</u>

Revenue and long-lived assets (including property, plant and equipment, net and operating lease right of use assets) by geographical area are as follows (in millions):

	2022	2021	2020
Revenue:			
United States	\$ 696.1	\$ 601.0	\$ 455.9
Germany	247.4	262.6	244.9
Rest of Europe	591.9	658.1	519.8
China	396.5	357.6	313.5
Rest of Asia Pacific	408.4	371.5	315.6
Other	190.4	167.1	137.8
Total revenue	<u>\$ 2,530.7</u>	<u>\$ 2,417.9</u>	<u>\$ 1,987.5</u>
Long-lived assets:			
United States	\$ 58.8	\$ 51.3	\$ 61.3
Germany	309.6	244.0	227.8
Rest of Europe	141.0	141.5	144.7
Asia Pacific	22.1	22.6	22.1
Other	6.7	6.6	7.1
Total long-lived assets	<u>\$ 538.2</u>	<u>\$ 466.0</u>	<u>\$ 463.0</u>

23. Related Parties

On February 26, 2020, the Company acquired land and buildings at 15 Fortune Drive and 44 Manning Road, both in Billerica MA, for a total purchase price of \$12.3 million. Each property was owned by a trust controlled equally by Bruker's President & CEO, Frank Laukien, and his half-brother, Dirk D. Laukien. Both properties acquired are adjacent to Bruker's headquarters building at 40 Manning Road, a property already owned by the Company. BSI BioSpin formerly leased the property at 15 Fortune Drive and will continue to occupy the property for the foreseeable future. The property at 44 Manning Road, which is currently fully leased to unrelated third parties, provides for potential expansion of Bruker operations in the future.

The purchase price was allocated between the two properties as follows: \$5.6 million for 15 Fortune Drive and \$6.7 million for 44 Manning Road. The price for each property was established based on an independent third-party appraisal. The Audit Committee of the Board reviewed, voted on and approved this related party transaction in accordance with Bruker's Related Persons Transactions Policy and the Audit Committee charter.

ITEM 9 CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

We have established disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”)) that are designed to provide reasonable assurance that information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC and to ensure that such information is accumulated and communicated to management, including our Chief Executive Officer (principal executive officer) and Chief Financial Officer (principal financial officer), to allow timely decisions regarding required disclosures. Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our disclosure controls and procedures as of December 31, 2022. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective at a reasonable assurance level as of December 31, 2022.

Management’s Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2022, based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control—Integrated Framework* (2013). Based on this evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2022.

We excluded Prolab Instruments GmbH, PreOmics GmbH, PepSep Holding ApS, Optimal Industrial Automation and Technologies, IonSense, Inc., Inscopix, Inc., and Neurescence, Inc. from our assessment of internal control over financial reporting as of December 31, 2022 because they were acquired by the Company in business combinations during 2022. The total assets and total revenues of the acquired entities collectively represent 1.5% and 1.1%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2022.

PricewaterhouseCoopers LLP, our independent registered public accounting firm has audited the effectiveness of our internal control over financial reporting as of December 31, 2022, as stated in their report which is included herein.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2022 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B OTHER INFORMATION

None.

ITEM 9C DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10 DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The full text of our code of conduct, which applies to our Principal Executive Officer, Principal Financial Officer, Principal Accounting Officer and Board of Directors is published on our Investor Relations website at www.brucker.com. We intend to disclose future amendments to certain provisions of our Code, or waivers of such provisions granted to executive officers and directors, on the website within four business days following the date of such amendment or waiver.

The information required by this item of Form 10-K is incorporated by reference to our definitive proxy statement (which will be filed with the SEC pursuant to Regulation 14A under the Exchange Act) relating to our 2023 Annual Meeting of Shareholders.

ITEM 11 EXECUTIVE COMPENSATION

The information required by this item of Form 10-K is incorporated by reference to our definitive proxy statement (which will be filed with the SEC pursuant to Regulation 14A under the Exchange Act) relating to our 2023 Annual Meeting of Shareholders.

ITEM 12 SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED SHAREHOLDER MATTERS

The information required by this item of Form 10-K is incorporated by reference to our definitive proxy statement (which will be filed with the SEC pursuant to Regulation 14A under the Exchange Act) relating to our 2023 Annual Meeting of Shareholders.

ITEM 13 CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this item of Form 10-K is incorporated by reference to our definitive proxy statement (which will be filed with the SEC pursuant to Regulation 14A under the Exchange Act) relating to our 2023 Annual Meeting of Shareholders.

ITEM 14 PRINCIPAL ACCOUNTANT FEES AND SERVICES

Our independent registered public accounting firm is PricewaterhouseCoopers LLP, New York, NY, PCAOB ID 238.

The information required by this item of Form 10-K is incorporated by reference to our definitive proxy statement (which will be filed with the SEC pursuant to Regulation 14A under the Exchange Act) relating to our 2023 Annual Meeting of Shareholders.

PART IV

ITEM 15 EXHIBITS, FINANCIAL STATEMENTS AND SCHEDULES

(a) **Financial Statements and Schedules**

(1) **Financial Statements**

The financial statements required by this item are filed as part of this report under Item 8—Financial Statements and Supplementary Data.

(2) **Financial Statement Schedules**

The financial statements required by this item are filed as part of this report under Item 8—Financial Statements and Supplementary Data.

(3) **Exhibits**

(b) **List of Exhibits**

EXHIBIT INDEX

Exhibit Number	Description	Incorporated by Reference	
		Form	Filing Date
3.1	Restated Certificate of Incorporation of Bruker Corporation	Form 10-K	March 27, 2020
3.2	Amended and Restated Bylaws of Bruker Corporation	Form 10-Q	August 8, 2020
4.1	Specimen Stock Certificate Representing Shares of Common Stock of Bruker Corporation	Form 10-K	March 1, 2017
4.2	Description of the Registrant's Securities registered pursuant to Section 12 of the Securities Exchange Act of 1934	Form 10-K	March 27, 2020
10.1†	Bruker Corporation 2010 Incentive Compensation Plan	Schedule 14A	April 14, 2010
10.2†	Bruker Corporation 2010 Incentive Compensation Plan Form of Incentive Stock Option Agreement	Form 10-Q	August 9, 2010
10.3†	Bruker Corporation 2010 Incentive Compensation Plan Form of Non-Qualified Stock Option Agreement	Form 10-Q	August 9, 2010
10.4†	Bruker Corporation 2010 Incentive Compensation Plan Form of Restricted Stock Agreement	Form 10-Q	August 9, 2010
10.5†	Bruker Corporation 2016 Incentive Compensation Plan	Schedule 14A	April 22, 2016
10.6†	Bruker Corporation 2016 Incentive Compensation Plan Form of Incentive Stock Option Agreement	Form 10-Q	August 9, 2019
10.7†	Bruker Corporation 2016 Incentive Compensation Plan Form of Non-Qualified Stock Option Agreement	Form 10-Q	August 9, 2019
10.8†	Bruker Corporation 2016 Incentive Compensation Plan Form of Restricted Stock Unit Agreement	Form 10-Q	August 9, 2019
10.9†	Bruker Corporation 2016 Incentive Compensation Plan Form of Director Restricted Stock Unit Agreement	Form 10-K	March 1, 2017
10.10†	Bruker Corporation Employee Stock Purchase Plan	Form S-8	June 3, 2022
10.11	Amended and Restated Credit Agreement, dated as of May 24, 2011, by and among the Company, Bruker AXS GmbH, Bruker Daltonik GmbH, Bruker Optik GmbH, Bruker Physik GmbH, Bruker BioSpin Invest AG, Bruker	Form 8-K	May 25, 2011

BioSpin AG and Bruker BioSpin International AG, the other foreign subsidiary borrowers from time to time party thereto, the lenders from time to time party thereto, Deutsche Bank Securities Inc., Commerzbank Ag, New York, Grand Cayman And Stuttgart Branches and RBS Citizens, National Association, as Co-Documentation Agents, Bank of America, N.A. as Syndication Agent and JPMorgan Chase Bank, N.A., as Administrative Agent

10.12*	<u>Note Purchase Agreement, dated January 18, 2012</u>	Form 8-K	January 19, 2012
10.13	<u>First Amendment to the Note Purchase Agreement, date January 18, 2012</u>	Form 10-Q	August 7, 2020
10.14†	<u>Bruker Corporation 2019 Short-Term Incentive Compensation Program</u>	Form 8-K	February 21, 2019
10.15†**	<u>Bruker Corporation 2022 Short-Term Incentive Compensation Program</u>		
10.16†	<u>Offer Letter, dated June 4, 2018, by and between the Company and Gerald N. Herman</u>	Form 10-Q	August 9, 2018
10.17†	<u>Contract of Employment, dated May 1, 2018, by and between the Company and Falko Busse</u>	Form 10-Q	August 9, 2018
10.18†	<u>Employment Offer Letter Agreement, dated June 25, 2012, by and between the Company and Juergen Srega</u>	Form 10-Q	May 9, 2013
10.19†	<u>Managing Director Employment Contract, dated as of June 28, 2012, by and between Bruker Daltonik GmbH and Juergen Srega, as amended pursuant to the Supplement to the Managing Director Employment Contract, dated as of December 12, 2019</u>	Form 10-K	March 27, 2020
10.20†	<u>Form of Indemnification Agreement of Officers and Directors</u>	Form 8-K	February 11, 2019
10.21	<u>Credit Agreement, dated December 11, 2019, by and among the Company and certain of its subsidiaries as borrowers, Deutsche Bank Securities Inc. and Wells Fargo Bank, National Association, as Co-Syndication Agents, Citizens Bank, N.A., Credit Suisse (Switzerland) Ltd., TD Bank, N.A. and U.S. Bank National Association, as Co-Documentation Agents, Bank of America, N.A., as Administrative Agent, Swing Line Lender and Issuing Bank, and the several banks or other financial institutions or entities from time to time party thereto as lenders</u>	Form 8-K	December 12, 2019
10.22	<u>Term Loan Agreement, dated December 11, 2019, by and among the Company and certain of its subsidiaries, and Bank of America, N.A. as Administrative Agent, TD Bank, N.A. and the other banks or other financial institutions or entities from time to time party thereto as lenders</u>	Form 8-K	December 12, 2019
10.23	<u>Note Purchase Agreement dated as of December 11, 2019</u>	Form 8-K	December 12, 2019
10.24	<u>First Amendment to the Note Purchase Agreement, dated as of December 11, 2019</u>	Form 10-Q	August 7, 2020
10.25	<u>First Amendment to Term Loan Agreement, dated as of May 12, 2021</u>	Form 10-Q	August 5, 2021
10.26	<u>Note Purchase Agreement dated as of December 7, 2021</u>	Form 8-K	December 8, 2021
10.27	<u>First Amendment to Credit Agreement, dated December 11, 2019, by and among the Company and certain of its subsidiaries as borrowers, Deutsche Bank Securities Inc. and Wells Fargo Bank, National Association, as Co-Syndication Agents, Citizens Bank, N.A., Credit Suisse (Switzerland) Ltd., TD Bank, N.A. and U.S. Bank National Association, as Co-Documentation Agents, Bank of America, N.A., as Administrative Agent, Swing Line Lender and Issuing Bank, and the several banks or other financial institutions or entities from time to time party thereto as lenders</u>	Form 10-Q	August 5, 2022
10.28	<u>Second Amendment to Credit Agreement dated December 11, 2019, by and among the Company and certain of its subsidiaries as borrowers, Deutsche Bank Securities Inc. and Wells Fargo Bank, National Association, as Co-Syndication Agents, Citizens Bank, N.A., Credit Suisse (Switzerland) Ltd., TD</u>	Form 10-Q	November 4, 2022

[Bank, N.A. and U.S. Bank National Association, as Co-Documentation Agents, Bank of America, N.A., as Administrative Agent, Swing Line Lender and Issuing Bank, and the several banks or other financial institutions or entities from time to time party thereto as lenders](#)

- 10.29 [Second Amendment to Term Loan Agreement dated December 11, 2019, by and among the Company and certain of its subsidiaries, and Bank of America, N.A. as Administrative Agent, TD Bank, N.A. and the other banks or other financial institutions or entities from time to time party thereto as lenders](#)
- 21.1 ** [Subsidiaries of the Company](#)
- 23.1 ** [Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm](#)
- 24.1 ** [Power of attorney \(included on signature page hereto\)](#)
- 31.1 ** [Certification by Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002](#)
- 31.2 ** [Certification by Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002](#)
- 32.1 ** [Certification by Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002](#)
- 101.INS ** Inline XBRL Instance Document
- 101.SCH ** Inline XBRL Taxonomy Extension Schema Document
- 101.CAL ** Inline XBRL Taxonomy Extension Calculation Linkbase Document
- 101.DEF ** Inline XBRL Taxonomy Extension Definition Linkbase Document
- 101.LAB ** Inline XBRL Taxonomy Extension Label Linkbase Document
- 101.PRE** Inline XBRL Taxonomy Extension Presentation Linkbase Document
- 104** The cover page from the Company's Annual Report on Form 10-K for the year ended December 31, 2022 has been formatted in Inline XBRL (included in Exhibit 101)

Form 10-Q November 4, 2022

* Certain portions have been omitted pursuant to an order granting confidential treatment and have been filed separately with the Securities and Exchange Commission.

† Designates management contract or compensatory plan or arrangement.

** Filed or furnished herewith.

No other instruments defining the rights of holders of long-term debt of the registrant or its subsidiaries have been filed as Exhibits because no such instruments met the threshold materiality requirements under Regulation S-K. The registrant agrees, however, to furnish a copy of any such instruments to the Commission upon request.

ITEM 16 FORM 10-K SUMMARY

Not Applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

BRUKER CORPORATION

Date: February 28, 2023

By: /s/ FRANK H. LAUKIEN, PH.D.

Name: Frank H. Laukien, Ph.D.

Title: *President, Chief Executive Officer and Chairman*

We, the undersigned officers and directors of Bruker Corporation, hereby severally constitute and appoint Frank H. Laukien, Ph.D. to sign for us and in our names in the capacities indicated below, the report on Form 10-K filed herewith and any and all amendments to such report, and to file the same, with all exhibits thereto and other documents in connection therewith, in each case, with the Securities and Exchange Commission, and generally to do all such things in our names and on our behalf in our capacities consistent with the provisions of the Securities Exchange Act of 1934, as amended, and all requirements of the Securities and Exchange Commission.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Name	Title	Date
<u>/S/ FRANK H. LAUKIEN, PH.D.</u> Frank H. Laukien, Ph.D.	President, Chief Executive Officer and Chairman (Principal Executive Officer)	February 28, 2023
<u>/S/ GERALD N. HERMAN</u> Gerald N. Herman	Executive Vice President and Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	February 28, 2023
<u>/S/ BONNIE H. ANDERSON</u> Bonnie H. Anderson	Director	February 28, 2023
<u>/S/ CYNTHIA M. FRIEND, PH.D.</u> Cynthia Friend, Ph.D.	Director	February 28, 2023
<u>/S/ MARC A. KASTNER, PH.D.</u> Marc A. Kastner, Ph.D.	Director	February 28, 2023
<u>/S/ WILLIAM A. LINTON</u> William A. Linton	Director	February 28, 2023
<u>/S/ Philip Ma</u> Philip Ma	Director	February 28, 2023
<u>/S/ JOHN ORNELL</u> John Ornell	Director	February 28, 2023
<u>/S/ RICHARD A. PACKER</u> Richard A. Packer	Director	February 28, 2023
<u>/S/ ADELENE Q. PERKINS</u> Adelene Q. Perkins	Director	February 28, 2023
<u>/S/ HERMANN REQUARDT, PH.D.</u> Hermann Requardt, Ph.D.	Director	February 28, 2023
<u>/S/ ROBERT ROSENTHAL, PH.D.</u> Robert Rosenthal, Ph.D.	Director	February 28, 2023

SUBSIDIARIES OF BRUKER CORPORATION

Name of Subsidiary	Jurisdiction of Incorporation
Acuity Spatial Genomics, Inc. (33)	Delaware, U.S.A.
Advanced Diagnostic Solutions (Pty) Ltd. (31)	South Africa
Agapetus GmbH (23)	Austria
Alicona Imaging GmbH (24)	Austria
Anasys Instruments Corporation (8)	California, U.S.A.
Biocetra AS (21)	Norway
Bruker (Beijing) Scientific Technology Co., Ltd. (11)	China
Bruker (Malaysia) SDN. BHD. (10)	Malaysia
Bruker Arabia Limited (23)	Saudi Arabia
Bruker Austria GmbH (4)	Austria
Bruker AXS GmbH (3)	Germany
Bruker AXS Holdings, Inc.	Delaware, U.S.A.
Bruker AXS LLC (8)	Delaware, U.S.A.
Bruker AXS Ltd. (42)	United Kingdom
Bruker Belgium S.A./N.V. (26)	Belgium
Bruker BioSpin Corporation	Massachusetts, U.S.A.
Bruker BioSpin GmbH (15)	Germany
Bruker BioSpin MRI GmbH (7)	Germany
Bruker Business Support Center sp. Z.o.o. (32)	Poland
Bruker Daltonics GmbH & Co., KG (17)	Germany
Bruker Daltonics Ltd. (18)	United Kingdom
Bruker Daltonik GmbH (16)	Germany
Bruker Detection Corporation (18)	Massachusetts, U.S.A.
Bruker do Brasil Ltda. (4)	Brazil
Bruker EAS GmbH (1)	Germany
Bruker Energy & Supercon Technologies, Inc.	Delaware, U.S.A.
Bruker Espanola S.A. (10)	Spain
Bruker Finance BV (18)	Netherlands
Bruker France S.A.S. (10)	France
Bruker Handheld LLC	Delaware, U.S.A.
Bruker Holdings BV (18)	Netherlands
Bruker India Scientific PVT, Ltd. (19)	India
Bruker Invest AG (9)	Switzerland
Bruker Italia S.r.l. (10)	Italy
Bruker Japan K.K. (10)	Japan
Bruker JV UK Ltd. (41)	United Kingdom
Bruker Korea Co. Ltd. (10)	Korea
Bruker Ltd. (10)	Russia
Bruker Ltd. (10)	Canada
Bruker Mexicana S.A. de C.V. (5)	Mexico
Bruker Microbiology Technology (Beijing) Co., Ltd (36)	China
Bruker Nano GmbH (4)	Germany
Bruker Nano, Inc. (27)	Arizona, U.S.A.
Bruker Nederland B.V. (10)	Netherlands
Bruker Nordic AB (18)	Sweden
Bruker Nordic Denmark, Branch of Bruker Nordic AB (39)	Denmark
Bruker Optics GmbH & Co. KG (35)	Germany
Bruker Optics Verwaltungs GmbH (35)	Germany
Bruker Optik Holding GmbH (18)	Germany
Bruker OST LLC (1)	Delaware, U.S.A.
Bruker Polska Sp. Z.o.o. (4)	Poland
Bruker Portugal Unipessoal LDA (10)	Portugal
Bruker PTY Ltd. (10)	Australia
Bruker s.r.o. (34)	Czech Republic

Name of Subsidiary	Jurisdiction of Incorporation
Bruker Scientific Instruments Hong Kong Co., Ltd. (10)	Hong Kong
Bruker Scientific Israel Ltd. (10)	Israel
Bruker Scientific LLC	Delaware, U.S.A.
Bruker Singapore Pte. Ltd. (10)	Singapore
Bruker South Africa (Pty) Ltd. (4)	South Africa
Bruker Switzerland AG (10)	Switzerland
Bruker Switzerland AG, Thailand Branch (23)	Thailand
Bruker Taiwan Co. Ltd. (18)	Taiwan
Bruker Technologies Ltd. (12)	Israel
Bruker Turkey Teknolojik Sistemler Ticaret Ltd. Sirketi (10)	Turkey
Bruker UK Ltd. (10)	United Kingdom
Bruker Verwaltungs GmbH (17)	Germany
Bruker-Physik GmbH (14)	Germany
Canopy Biosciences LLC (8)	Delaware, U.S.A.
Core Diagnostics Inc. (29)	California, U.S.A.
Gauss Fusion GmbH (40)	Germany
Hain LifeScience E.A. Ltd. (21)	Kenya
Hain LifeScience GmbH (34)	Germany
Hain Lifescience UK Limited (21)	United Kingdom
Hydrostatic Extrusions Ltd. (1)	United Kingdom
InCoaTec GmbH (4)	Germany
Inscopix Neuroscience, Inc. (25)	Canada
Inscopix, Inc. (8)	California, U.S.A.
InVivo Biotech Svx GmbH (34)	Germany
Lifescience Solutions Africa (Pty) Ltd. (21)	South Africa
Luxendo GmbH (10)	Germany
Merlin Diagnostika GmbH (34)	Germany
Mestrelab Research S.L. (22)	Spain
Molecubes, Inc. (13)	Delaware, U.S.A.
Molecubes, NV (10)	Netherlands
Neurescense, Inc. (6)	Canada
Optimal Industrial Automation Limited (10)	United Kingdom
Optimal Industrial Technologies Limited (10)	United Kingdom
PepSep ApS (34)	Denmark
PMOD Technologies LLC (23)	Switzerland
Precision Diagnostics, Inc. (28)	Delaware, U.S.A.
PreOmics GmbH (37)	Germany
PreOmics Inc. (38)	Delaware, U.S.A.
Prolab Instruments GmbH (10)	Switzerland
Research Instruments GmbH (2)	Germany
SAS Biocentric (21)	France
SmartTip BV (30)	Netherlands
Vutara LLC (8)	Delaware, U.S.A.
XGLabs S.r.l. (20)	Italy
Zellkraft Werk GmbH (28)	Germany

- (1) These entities are wholly owned subsidiaries of Bruker Energy & Supercon Technologies, Inc.
- (2) This entity is 52.49% owned by Bruker Energy & Supercon Technologies, Inc. and 47.51% owned by third parties.
- (3) This entity 90% owned by Bruker AXS Holdings, Inc. and 10% owned by Bruker Corporation.
- (4) These entities are wholly owned subsidiaries of Bruker AXS GmbH.
- (5) This entity is 99.9% owned by Bruker AXS GmbH and 0.1% owned by Bruker AXS LLC.
- (6) This entity is wholly owned by Bruker Ltd.
- (7) This entity is 89.9% owned by Bruker-Physik GmbH and 10.1% owned by Bruker Invest AG.
- (8) These entities are wholly owned subsidiaries of Bruker Nano, Inc.
- (9) This entity is 90% owned by Bruker BioSpin Corporation and 10% owned by Bruker Corporation.
- (10) These entities are wholly owned subsidiaries of Bruker Invest AG.
- (11) This entity is wholly owned subsidiary of Bruker Singapore Pte. Ltd.
- (12) This entity is wholly owned subsidiary of Bruker Scientific Israel Ltd.
- (13) This entity is wholly owned by Molecubes NV.
- (14) This entity is 50.5% owned by Bruker BioSpin Corporation, 24.75% owned by Bruker Daltonik GmbH and 24.75% owned by Bruker Optik Holding GmbH.

- (15) This entity is wholly owned by Bruker-Physik GmbH
 - (16) This entity is 90% owned by Bruker Scientific LLC and 10% owned by Bruker Corporation.
 - (17) These entities are wholly owned subsidiaries of Bruker Daltonik GmbH.
 - (18) These entities are wholly owned subsidiaries of Bruker Scientific LLC.
 - (19) This is 70.41% owned by Bruker Invest AG, 22.27% owned by Bruker AXS GmbH and 7.32% owned by Bruker Daltonik GmbH.
 - (20) This entity is wholly owned subsidiary of Bruker Italia S.r.l.
 - (21) These entities are wholly owned by Hain LifeScience GmbH.
 - (22) This entity is 80.97% owned by Bruker Switzerland AG and 19.03% owned by third parties.
 - (23) These entities are wholly owned by Bruker Switzerland AG.
 - (24) These entities are wholly owned by Agapetus GmbH.
 - (25) This entity is wholly owned by Inscopix, Inc.
 - (26) This entity is 99.99% owned by Bruker Invest AG and 0.01% owned by Bruker Switzerland.
 - (27) This entity is wholly owned by Bruker AXS Holdings, Inc.
 - (28) These entities are wholly owned by Canopy BioScience LLC.
 - (29) This entity is wholly owned by Precision Diagnostics, Inc.
 - (30) This is wholly owned by Bruker Nederland BV.
 - (31) This entity is 50% owned by Hain Lifescience GmbH and 50% owned by Bruker South Africa (Pty) Ltd.
 - (32) This entity is wholly owned by Bruker Finance BV.
 - (33) This entity is 93.1% owned by Bruker Nano, Inc. and 2.1% owned by third parties.
 - (34) These entities are wholly owned by Bruker Daltonics GmbH & Co., KG.
 - (35) These entities are wholly owned by Bruker Optik Holding GmbH.
 - (36) This entity is wholly owned by Merlin Diagnostika GmbH.
 - (37) This entity is 74.15% owned by Bruker Daltonics GmbH & Co., KG and 25.85% by third parties.
 - (38) This entity is wholly owned by PreOmics GmbH.
 - (39) This entity is wholly owned by Bruker Nordic AB.
 - (40) This entity is wholly owned by Bruker EAS GmbH.
 - (41) This entity is wholly owned by Bruker UK Ltd.
 - (42) This entity is 50% owned by Bruker Invest AG and 50% owned by Bruker UK Ltd.
-

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-265396, 333-211686, 333-167333, 333-150430, 333-137090, 333-107294 and 333-47836) of Bruker Corporation of our report dated February 28, 2023 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts

February 28, 2023

CERTIFICATION

I, Frank H. Laukien, certify that:

1. I have reviewed this annual report on Form 10-K of Bruker Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2023

By: /s/ FRANK H. LAUKIEN, PH.D.

Frank H. Laukien, Ph.D.
President, Chief Executive Officer and Chairman
(Principal Executive Officer)

CERTIFICATION

I, Gerald N. Herman, certify that:

1. I have reviewed this annual report on Form 10-K of Bruker Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2023

By: /s/ GERALD N. HERMAN

Gerald N. Herman
Executive Vice President and Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Bruker Corporation (the “Company”) on Form 10-K for the year ended December 31, 2022, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), each of the undersigned, Frank H. Laukien, President, Chief Executive Officer and Chairman of the Board of Directors of the Company, and Gerald N. Herman, Executive Vice President and Chief Financial Officer of the Company, certifies, pursuant to 18 U.S.C. section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of his knowledge:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 28, 2023

By: /s/ FRANK H. LAUKIEN, PH.D.

Frank H. Laukien, Ph.D.
President, Chief Executive Officer and Chairman
(Principal Executive Officer)

Date: February 28, 2023

By: /s/ GERALD N. HERMAN

Gerald N. Herman
Executive Vice President and Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)



BRUKER CORPORATION
RECONCILIATION
OF GAAP TO NON-GAAP
FINANCIAL MEASURES

Bruker Corporation
RECONCILIATION OF GAAP TO NON-GAAP FINANCIAL MEASURES
(unaudited and in millions, except per share data)

Reconciliation of Non-GAAP Operating Income, Non-GAAP Profit Before Tax,
Non-GAAP Net Income and Non-GAAP Earnings Per Share

	Three Months Ended December 31,		Three Months Ended December 31,	
	2022	2021	2022	2021
GAAP operating income	\$ 131.0	\$ 125.4	\$ 432.7	\$ 413.3
<i>Non-GAAP adjustments:</i>				
Restructuring costs	0.4	3.0	4.8	8.2
Acquisition-related costs	4.3	3.0	19.7	6.9
Purchased intangible amortization	9.6	10.2	37.1	37.4
Other costs	3.6	2.2	11.3	4.4
<i>Total Non-GAAP adjustments:</i>	17.9	18.4	72.9	56.9
Non-GAAP operating income	\$ 148.9	\$ 143.8	\$ 505.6	\$ 470.2
Non-GAAP operating margin	21.0%	21.0%	20.0%	19.4%
Non-GAAP interest & other expense, net	(10.0)	(5.9)	(20.4)	(19.7)
Non-GAAP profit before tax	138.9	137.9	485.2	450.5
Non-GAAP income tax provision	(28.6)	(47.4)	(134.4)	(126.1)
<i>Non-GAAP tax rate</i>	20.6	34.4	27.7	28.0
Minority interest	(0.9)	(0.3)	(1.9)	(3.5)
Non-GAAP net income attributable to Bruker	109.4	90.2	348.9	320.9
Weighted average shares outstanding (diluted)	147.9	152.5	149.4	152.9
Non-GAAP earnings per share	\$ 0.74	\$ 0.59	\$ 2.34	\$ 2.10

Reconciliation of GAAP Interest and Other Income (Expense),
net to Non-GAAP Interest and Other Income (Expense), net

	Three Months Ended December 31,		Three Months Ended December 31,	
	2022	2021	2022	2021
GAAP interest and other income (expense), net	\$ (10.0)	\$ (5.9)	\$ (18.8)	\$ (19.7)
<i>Non-GAAP adjustments:</i>				
Strategic investments related adjustments	—	—	(1.6)	—
Non-GAAP interest and other income (expense), net	(10.0)	(5.9)	(20.4)	(19.7)

Reconciliation of GAAP Tax Rate to Non-GAAP Tax Rate

	Three Months Ended December 31,		Three Months Ended December 31,	
	2022	2021	2022	2021
GAAP tax rate	19.3%	36.4%	28.1%	28.7%
<i>Non-GAAP adjustments:</i>				
Tax impact of non-GAAP adjustments	1.7%	-1.6%	-1.8%	-0.8%
Other discrete items	-0.4%	-0.4%	1.4%	0.1%
<i>Total non-GAAP adjustments:</i>	1.3%	-2.0%	-0.4%	-0.7%
Non-GAAP tax rate	20.6%	34.4%	27.7%	28.0%

Reconciliation of GAAP Earnings Per Share to Non-GAAP Earnings Per Share (Diluted)

	Three Months Ended December 31,		Three Months Ended December 31,	
	2022	2021	2022	2021
GAAP earnings per share (diluted)	\$ 0.66	\$ 0.50	\$ 1.99	\$ 1.81
<i>Non-GAAP adjustments:</i>				
Restructuring costs	—	0.02	0.03	0.05
Acquisition-related costs	0.03	0.02	0.13	0.05
Purchased intangible amortization	0.07	0.06	0.25	0.24
Other costs	0.01	0.02	0.06	0.04
Income tax rate differential	(0.03)	(0.03)	(0.12)	(0.09)
<i>Total non-GAAP adjustments:</i>	0.08	0.09	0.35	0.29
Non-GAAP earnings per share (diluted)	\$ 0.74	\$ 0.59	\$ 2.34	\$ 2.10

Reconciliation of Non-GAAP Return on Invested Capital (ROIC)

	FY 2022	FY 2021
Non-GAAP operating income	\$ 505.6	\$ 470.2
Less: non-GAAP income tax provision	(134.4)	(126.1)
Non-GAAP operating income after tax	\$ 371.2	\$ 344.1
Average total invested capital		
Average long-term debt	\$ 1,213.0	\$ 1,034.3
Average current portion of long-term debt	65.6	57.3
Average total shareholders' equity	1,108.3	1,029.6
Less: average cash and cash equivalents	(856.9)	(875.0)
<i>Average total invested capital</i>	\$ 1,530.0	\$ 1,246.2
Return on invested capital (ROIC)	24.3%	27.6%

Reconciliation of Non-GAAP EBITDA

	Three Months Ended December 31,		Three Months Ended December 31,	
	2022	2021	2022	2021
Non-GAAP net income attributable to Bruker	\$ 109.4	\$ 90.2	\$ 348.9	\$ 320.9
Non-GAAP adjustments:				
Interest Expense, net ¹	3.2	3.4	13.3	13.5
Non-GAAP Income Tax Provision (from above)	28.6	47.4	134.4	126.1
GAAP Depreciation Expense	14.1	12.8	50.2	51.6
Amortization Expense ²	—	—	0.7	0.1
<i>Total Non-GAAP adjustments:</i>	45.9	63.6	198.6	191.3
Non-GAAP EBITDA	\$ 155.3	\$ 153.8	\$ 547.5	\$ 512.2
<i>Non-GAAP EBITDA Margin</i>	21.9%	22.5%	21.6%	21.2%

¹ GAAP Interest Expense, net

² GAAP Amortization Expense - with purchased intangible amortization already adjusted out of non-GAAP net income

Reconciliation of GAAP Reported Revenue Growth to Organic Revenue Growth

	Three Months Ended December 31,		Three Months Ended December 31,	
	2022	2021	2022	2021
	Total Bruker		Total Bruker	
GAAP revenue as of prior comparable period	\$ 683.5	\$ 627.5	\$ 2,417.9	\$ 1,987.5
Non-GAAP adjustments:				
Acquisitions and divestitures	11.6	1.8	34.3	8.1
Organic	60.8	71.6	246.5	379.0
Currency	(47.5)	(17.4)	(168.0)	43.3
<i>Total Non-GAAP adjustments:</i>	24.9	56.0	112.8	430.4
GAAP revenue	\$ 708.4	\$ 683.5	\$ 2,530.7	\$ 2,417.9
<i>Revenue growth</i>	3.6%	8.9%	4.7%	21.7%
<i>Organic revenue growth</i>	8.9%	11.4%	10.2%	19.1%

Executive Management

Frank H. Laukien, Ph.D.
President & Chief Executive Officer

Gerald N. Herman
Executive Vice President &
Chief Financial Officer

Mark R. Munch, Ph.D.
President of Bruker Nano Group
& Corporate Executive Vice
President

Juergen Srega
President, Bruker CALID Group

Falko Busse, Ph.D.
President, Bruker BioSpin Group

Burkhard Prause, Ph.D.
President, Bruker Energy &
Supercon Technologies (BEST)

Corporate & Investor Information

Corporate Headquarters:
Bruker Corporation
40 Manning Road
Billerica, Massachusetts 01821

Common Stock Listing:
Common stock of Bruker Corporation
is traded on Nasdaq under the symbol
"BRKR"

Investor Relations:
Justin Ward
investor.relations@bruker.com

Secretary:
Brent Alldredge

Legal Counsel:
Morgan, Lewis & Bockius LLP
One Federal Street
Boston, Massachusetts 02110

**Independent Registered Public
Accounting Firm:**
PricewaterhouseCoopers LLP
101 Seaport Boulevard
Boston, MA 02210

Transfer Agent:
American Stock Transfer & Trust Company
6201 15th Avenue,
Brooklyn, NY 11219

Board of Directors

Frank H. Laukien, Ph.D.
President, Chief Executive
Officer, Chairman,
Bruker Corporation

Bonnie H. Anderson
Co-Founder and Chairwoman,
Veracyte, Inc.

Cynthia M. Friend, Ph.D.
President & CEO, the Kavli Foundation
Director of the Energy Frontier
Research Center for Sustainable
Catalysis, Harvard University

Marc A. Kastner, Ph.D.
Former Dean of MIT School of Science
Adjunct Professor of Physics,
Stanford University Former
President of theScience
Philanthropy Alliance

William A. Linton, Ph.D.
Chairman & Chief Executive Officer,
Promega Corporation

Philip Ma, Ph.D.
Founder & Chief Executive Officer,
PrognomiQ Inc

John Ornell
Former Chief Financial Officer,
Waters Corporation

Richard A. Packer
Primary Executive Officer,
Healthcare Business Unit,
Asahi Kasei Corporation

Adelene Q. Perkins
Chair & Chief Executive Officer,
Infinity Pharmaceuticals, Inc

Hermann Requardt, Ph.D.
Former Chief Executive Officer,
Siemens Healthcare

Robert J. Rosenthal, Ph.D.
Chairman & Former Chief Executive Officer
Taconic Biosciences, Inc.

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