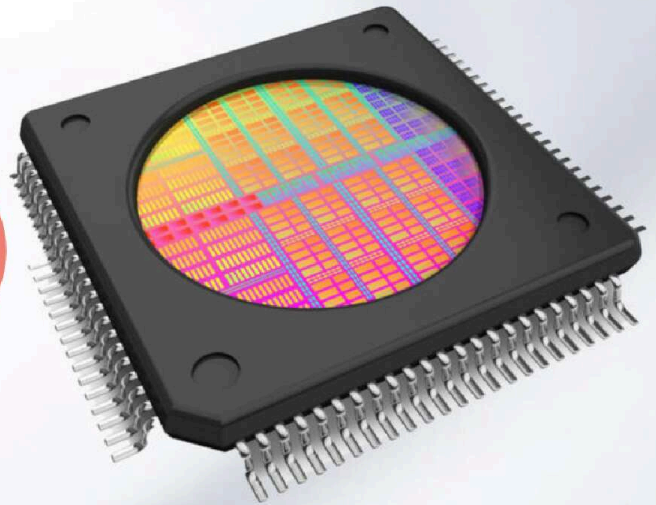


We're Evolving the Semiconductor Industry



RAYTON

Producing next generation materials to power the semiconductor industry

rayton.co Irvine California

Highlights

- 1 Awarded two patents for our semiconductor wafers and the processes required to manufacture them
- 2 Manufacturing process can yield up to 100 times the material as conventional methods
- 3 Our tech has the potential to reduce the price of next-generation electronic wafers by up to 25%

4

Backed by over 7,000 investors

Our Team



Andrew Yakub CEO, Chairman of the Board, Secretary, and Treasurer

Former founder/ CEO of ReGen America, UC Santa Barbara Physics BA graduate

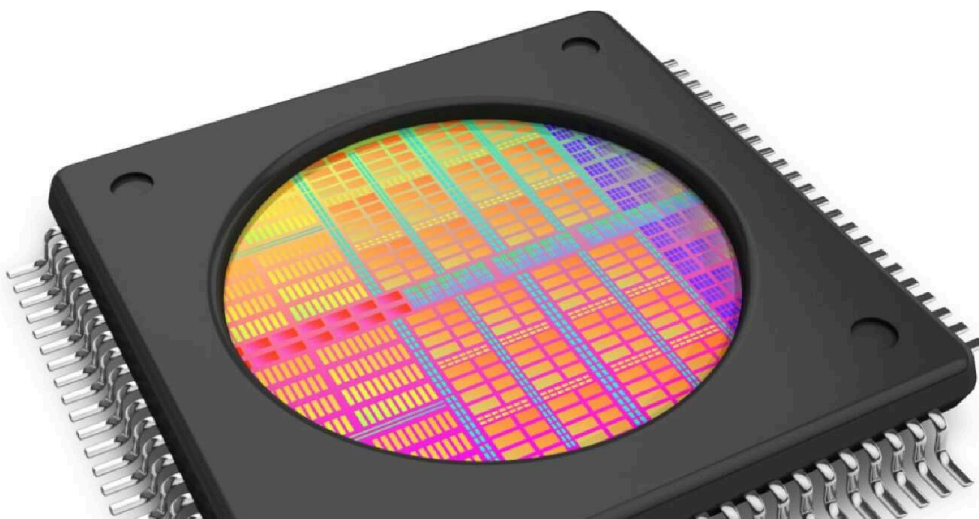


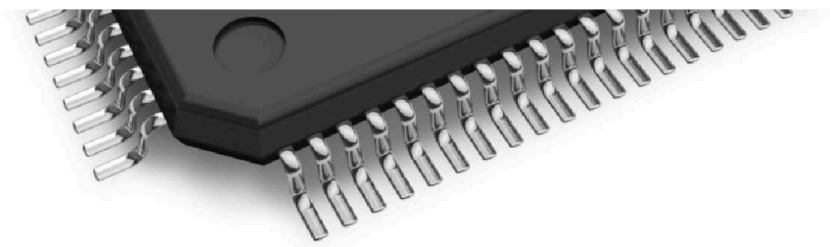
Dr. James Rosenzweig Director

UCLA professor, former UCLA Physics and Astronomy Department Chair, and a world-renowned researcher in particle beams with over 500 scientific publications. Fellow of the American Physical Society and winner of the International Free-electron Laser Prize

Why Rayton?

Using patented, particle accelerator-based technology, we are producing engineered wafers that can serve as the basis for next-generation electronics impacting industries such as automotive, aerospace, 5G, LED, and solar.





**The above image is CGI representation of a microchip.*

We believe we have now found a revolutionary new way of impacting multiple markets with our technology.

Everything you are doing right now involves some kind of semiconductor. Rayton is pushing the limits of cost-effective production for these materials. We plan to use our technology to create lower-cost Gallium Arsenide wafers for the semiconductor industry as a whole, which can be used in automotive, aerospace, 5G, LED, and solar applications.

The material we create serves as the foundation for all of these high-tech devices. Rayton intends to lower the cost of gallium arsenide material and then sell the wafers to the people who make these electronic devices.

Rayton has completed the Research and Development stage where we identified the implantation conditions and the recipe needed to make our wafers. We have successfully created a prototype wafer in the laboratory. We are entering the Beta Phase of operations where we plan to use the commercial-grade, high volume equipment to produce samples and are currently in pre-production. We will then begin ramping up to the production of 25 wafers per hour to enter Phase One of production.

UPDATE

We've officially reached the Beta Phase of our production process. This means we've received the world-class particle accelerator needed to move into a high-volume manufacturing phase. The particle accelerator is on site at Ryton's facility in Irvine, CA. This is a huge step forward in terms of production and revenue.



**The above image is Rayton's accelerator on-site at our Irvine facility.*

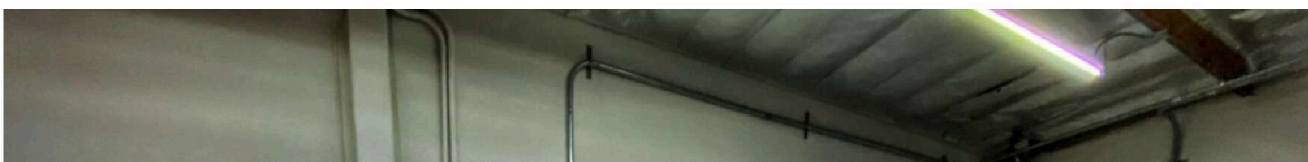
To paint a picture, the equipment, which came to our new Irvine, CA, headquarters in December, required a 10-ton forklift to move from the truck to the warehouse.





***The above images are of Rayton's accelerator's delivery.**

Once it was inside the warehouse, we then had to get it assembled and hooked up to high voltage power. It's critical that every single piece of this equipment is installed correctly, which requires diligence (and patience) on our part. The facility build out is well under way; however, there is still work to do in terms of being able to produce sample material. We need to finish commissioning the facility and testing/optimizing the equipment. This will be carried out over the next couple months.





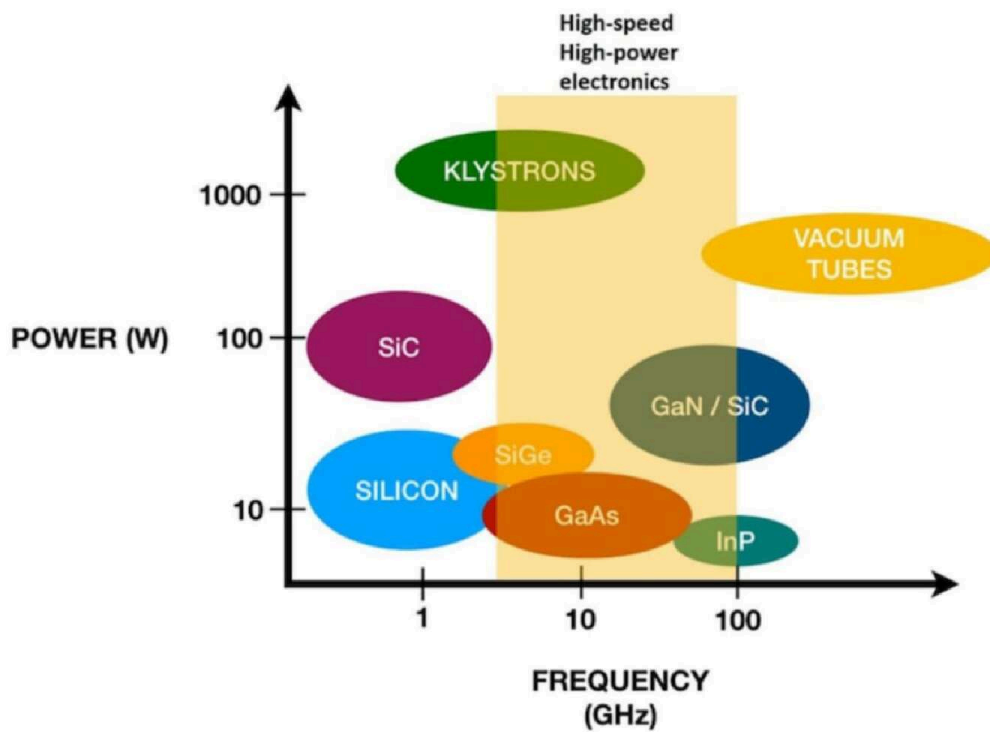
**The above image is Rayton's accelerator on-site at our Irvine facility.*

The Problem

Silicon semi conductors simply don't cut it anymore

Silicon has played an essential role in the semiconductor industry to-date. However, we are now entering an age where certain applications require more expensive semiconductor material than silicon. In the high-frequency and high-power regimes, silicon is not suited to play a strong role.

Semiconductors such as gallium nitride, gallium arsenide, and silicon carbide (GaN, GaAs, and SiC) have better electronic properties than silicon and are currently used in the manufacturing of high-speed, high-power electronics. (1) However, the material costs for GaN, GaAs, and SiC are magnitudes higher than silicon.

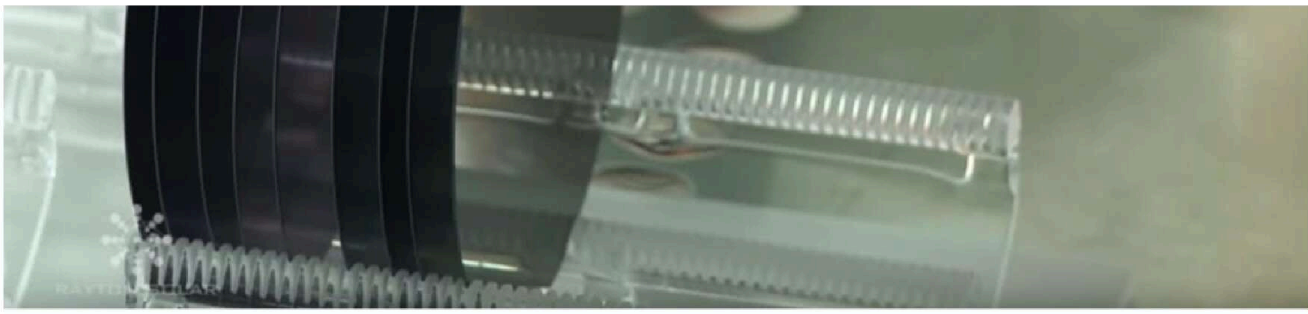


The Solution

A unique process to lower the cost of this revolutionary technology

Rayton has developed a unique technology that has the potential to reduce the price point for next-generation electronics by up to 25 percent. Because of this, Rayton can play a vital role in expediting the growth of 5G infrastructure, advanced automotive electronics, cellular technology, solar cells, and more. By lowering supply costs, Rayton achieves considerable market leverage, as we seek to supply all companies fabricating electronics on these advanced materials.





*This image is an example of a wafer that Rayton would use in its manufacturing process.

The Market

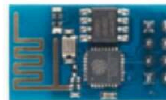
The markets for products created on our wafers are diverse and increasing in demand

In the fast-growing 5G network, high-power coupled with high-frequency transistors are necessary in transmission towers and mobile handsets. GaN is particularly well suited for such applications. Further, the high-speed receivers in cellular phones will likely be built on GaAs wafers. (2)

Power Amplifier⁷



Wifi Module⁸



Proximity Sensor⁶



Dot Projector for Facial Recognition



**Images are computer-generated demo versions.*

The high-speed and high-bandwidth requirements for the 5G cellular network will require the superior properties of GaAs and GaN. These materials are also used for a wide array of cellular components. In addition, they're necessary for many other products such as proximity sensors, Wi-Fi modules, flood illuminators, and dot projectors for facial recognition (VCSEL).



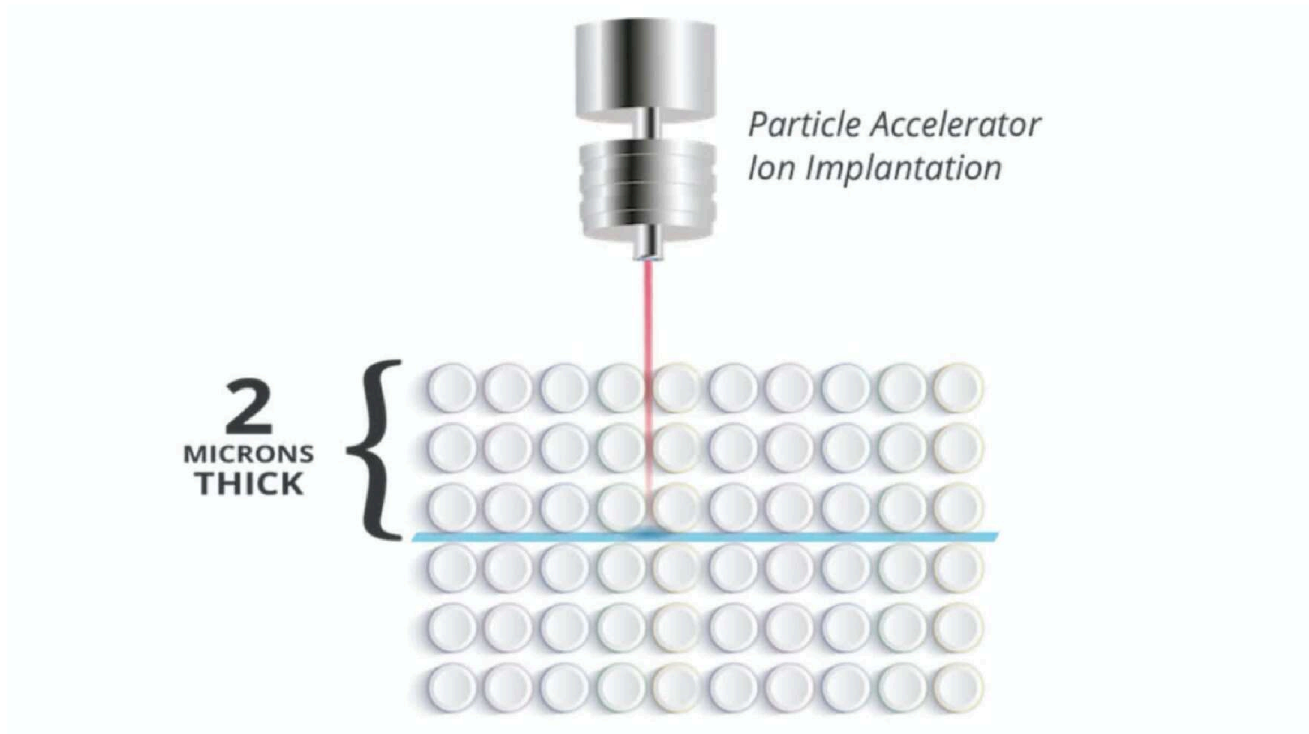
**Images are computer-generated demo versions.*

The wafers used for fabrication of all these components can seamlessly be replaced by our engineered wafers without any modification of downstream equipment. Thus, Rayton's end-product can be plugged into existing fabrication facilities, reducing material costs for those manufacturers.

There are additional high-potential growth markets that our engineered wafers will significantly impact. These include automotive, aerospace, LEDs, and solar. For instance, modern automotive technologies such as RADAR, LIDAR, 3D Imaging, blind-spot detection, and 5G-based 'vehicle-to-x' communication -- many of which are critical for autonomous vehicles -- rely upon devices built on GaAs wafers.

What we do

How Rayton Changes the Semiconductor Equation



**Images are computer-generated representations of Rayton's implantation process.*

Particle Accelerator Technology

We intend to use a high-current, high-voltage proton particle accelerator from Phoenix Laboratories to slice GaAs wafers, reducing waste by up to 50%. Our accelerator costs less and operates with less energy compared to competing particle accelerator methods. Because of this, our particle accelerator is capable of making up to 100 times as many wafers with the same amount of semiconductor material as our competitors use to make just one wafer. We have achieved a proof of concept wafer in the laboratory setting on non-commercial-grade equipment.

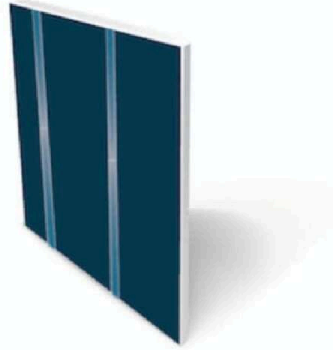
NORMAL SILICON WAFER

200
MICRONS
THICK



RAYTON SOLAR GaAs WAFER

2
MICRONS
THICK



**Images are computer-generated representations of our wafer product vs existing products. Not to scale.*

Manufacturing Efficiency

Diamond wire saws are currently the standard for cutting semiconductor materials for the electronics industry. This conventional method involves cutting the raw materials with a physical friction mechanic that wastes half the processed materials and cannot cut materials down to the two micron wafer thickness without significant yield loss or breakage.

ENGINEERED SUBSTRATES APPLICATIONS



Benefits of Rayton's engineered wafers



MORE FLEXIBILITY



PATENTED



MORE ROBUST



LOW-COST

enabled by Rayton's ion implantation technologies

ERAGE GALLIUM ARSENIDE
PRICE PER WAFER

\$100



RAYTON GALLIUM ARSENI
PRICE PER WAFER

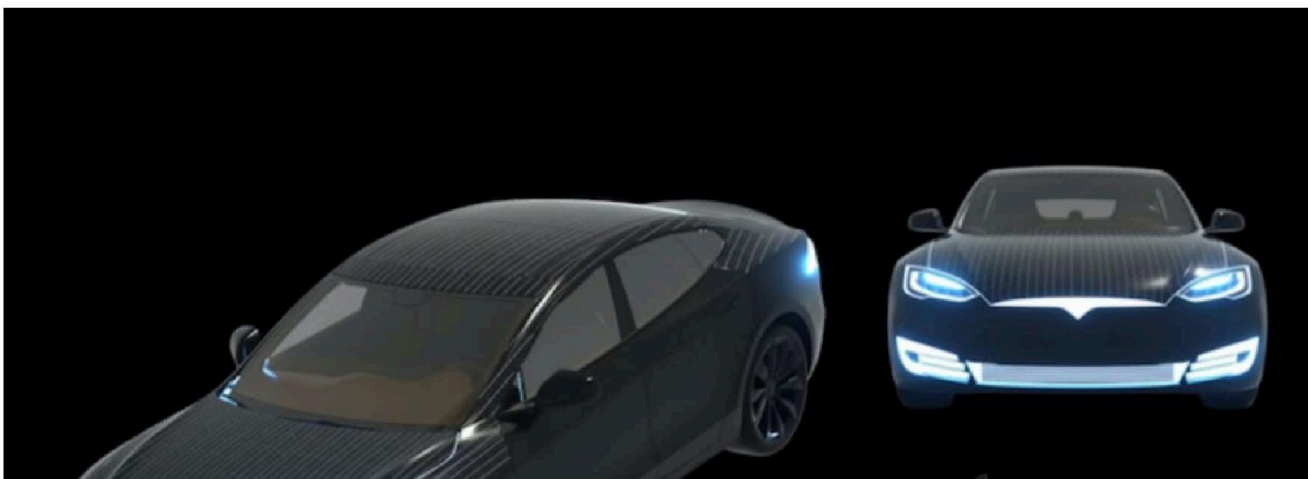
\$75

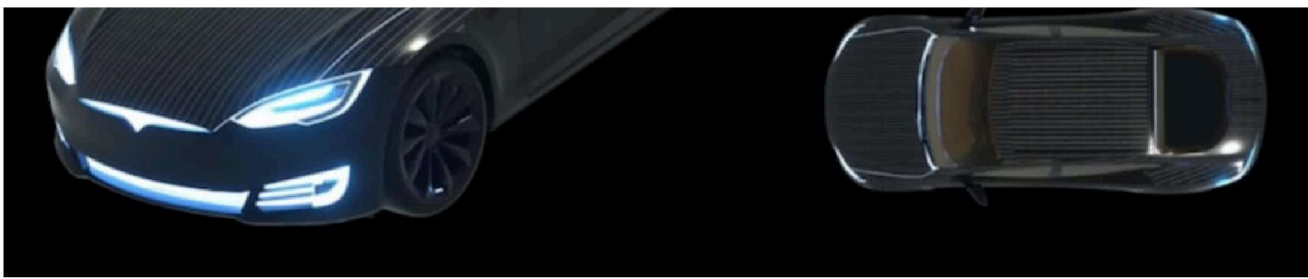
**Wafer images above are demo version. Not the Rayton wafer.*

Solar Applications

Cost-effective, highly efficient, and lightweight

Rayton intends to continue servicing the solar industry by providing a cost effective solution to high-efficient and light-weight solar cell manufacturing. The record for single junction solar cell efficiency is held by GaAs based solar cells at 28% while silicon solar cells average about 21% in production volumes. These high-efficient GaAs-based solar cells are made using Metal Organic Chemical Vapor Deposition (MOCVD) equipment. A GaAs wafer is placed in a reactive MOCVD chamber, and the solar cell is grown on top of this GaAs wafer. The initial GaAs wafer can be reused, but this step has proven to be a bottleneck in the process.





**Images are computer generated renderings. Product is not available on the market.*

Rayton believes that by bringing down the cost of this initial “building block” wafer, it will reduce the cost of the entire process and unlock these types of solar cells for commercial applications. Rayton plans to sell lower cost GaAs wafers to the companies who utilize MOCVD equipment for their products. There are applications of these high-efficient and light-weight solar cells which aid the world in transforming to a fully renewable source of energy.

Where Rayton fits in

Engineering state of the art GaAs wafers

Where does Rayton fit into the manufacturing vertical? We would buy GaAs wafers in bulk from producers like Freiberger, and Sumitomo. We would then conduct our process to lower the cost of the GaAs wafer. We would then sell our engineered GaAs wafers to the foundries like VPEC and IQE who grow devices on the wafers. They then sell these devices to the chipmakers who turn them into products used in the retail electronics we are all familiar with.

BULK WAFERS	ENGINEERED SUBSTRATE WAFER	FOUNDRIES (Epi Growth via MOCVD)	CHIP MAKERS & FABLESS	END PRODUCT
Xinxiang Shenzhou Crystal Technologies Co.	GaAs Substrate market at a CAGR of nearly 11% to more than \$650M by 2017	  <small>(II-VI Eniworks Division)</small>	 <small>Leading Global Semiconductor</small> <small>SEMICONDUCTORS</small>	 



About Our Fabrication Process

First, protons are accelerated within our particle accelerator and implanted a few microns deep into a semiconductor wafer (e.g. GaAs, SiC, or GaN). Second, the implanted wafer is bonded to a less expensive, compatible carrier wafer. For example, sapphire is a good option as the carrier wafer for GaAs bonding. Third, with a thermal annealing process, a thin layer of the semiconductor material is exfoliated from its original wafer, while maintaining the bond with the carrier wafer. This process can be used to produce an engineered wafer that has a device layer of a few microns on a carrier wafer. For instance, two-micron thick layers of GaAs on sapphire can be produced. The advantage of this process is that the original wafer can be reused more than 100 times which produces over 100 engineered wafers for each source wafer.



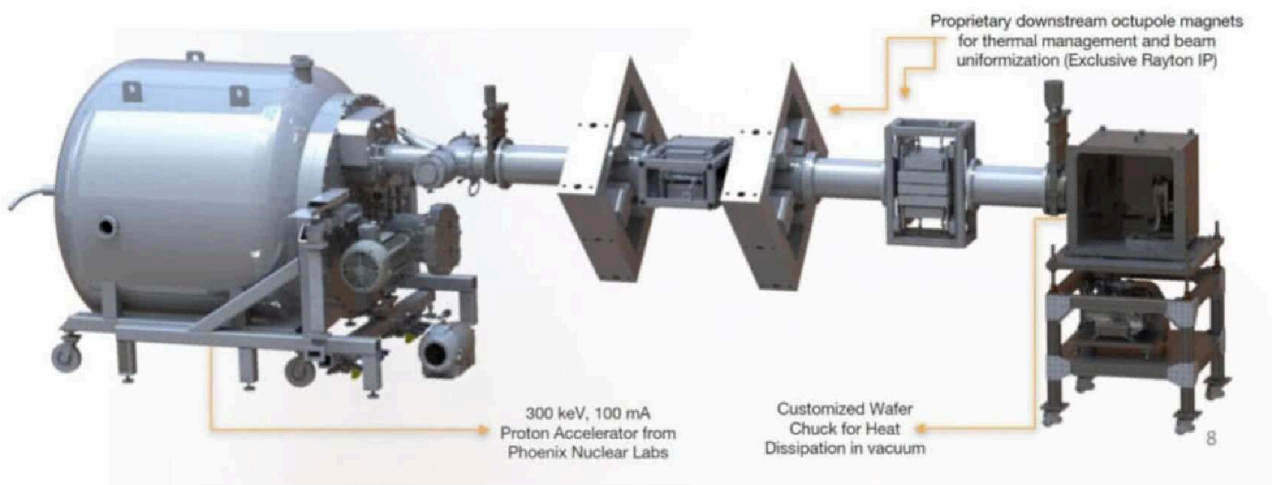


4 RECYCLE PARENT WAFER



**Images are computer generated renderings of the Rayton process*

Rayton's unique fabrication process makes use of a one-of-a-kind proton implanter jointly designed and built by Rayton and Phoenix Nuclear Labs.



**This image is a 3D-CAD rendering*

The high current of this proton implanter and a unique set of magnets to shape the proton beam allows for a potential throughput that is much higher than the current industry standard and can produce an estimated \$30M USD in annual revenue per production line. We believe Rayton will be well situated in the supply chain for the aforementioned high-speed, high-power electronics industry.

Specifically, we will fill the role of providing engineered substrates to epitaxy foundries and fabrication companies that will further develop the electronic components necessary for the 5G network, advanced automotive, cellular

components necessary for the 5G network, advanced automotive, cellular components, and other applications.

Our Roadmap



(300KeV proton implanter at Rayton's manufacturer's facility in Madison, WI)

Current Stage

Rayton plans to use this fundraising round for the advancement of our beta phase production. During this phase, Rayton will produce engineered wafers in-house to sample out to epitaxy and wafer foundries for high-speed high-power electronic components.

Then we hope to achieve the following: Once sales agreements are finalized, Rayton will plan to move onto single-line production. Once we are hopefully in a revenue stage, Rayton will plan to invest in more equipment to increase the throughput of the single accelerator line to reach the maximum production capability of the full-line production phase.

Please refer to our Risk Factors in our Form C filing. The information discussed here includes future projections that cannot be guaranteed.

A breakdown of estimated costs and revenue for these three phases can be found below:

Beta Phase

The goal of our Beta phase is to hopefully bring us to a full proof-of-concept where we can begin marketing our product. The particle accelerator for producing engineered GaAs wafers is on site at Ryton's facility in Irvine, CA, allowing us to reach our Beta Phase of operations. Rayton does not currently manufacture GaAs wafers at high volume. Current manufacturing capabilities are for sample materials that can be used for testing purposes with potential customers. For example, a potential customer can be sent a Rayton wafer and then run it through their manufacturing lines and further upstream processes to make their devices and test them for quality assurance and performance metrics. Rayton intends to produce sample material by mid to late 2022. Once we have developed the full proof-of-concept and have generated interest from potential customers, additional capital investment will be required. We believe we would need to raise an additional \$14M for equipment and operations to manufacture at commercial scale.

The estimated timeline of our Beta Phase is 12 months beginning in Year 1 of our new plan, utilizing raised funds to achieve this phase. In creating our projections we assume that the company will be able to create sample materials with the funds available and we estimate operating costs during this phase to be approximately \$60K per month.

Phase One

We will need to buy additional semiconductor processing equipment to move into a high volume manufacturing phase which could bring us into revenue. We currently estimate that the Company will need about \$14M to get into a revenue phase that can generate approximately \$9M per year or 120,000 wafers per year. Again, please note these are projections and cannot be guaranteed.

The estimated timeline of Phase 1 is 12 months beginning in Year 2 and to achieve this goal we will also utilize raised funds. This means to enter this phase we will require additional fundraising to support this success. If we do not meet our funding goals, we will not be able to enter this phase. We estimate that we will be able to attain \$9M in gross revenue per year provided that the company is able to attain approximately \$10.12M in production equipment. We estimate that in this phase there will be \$1.965M in operating expenses and \$2.52M in COGS. This assumes \$100 per GaAs wafer with 100 uses per wafer and \$20 per wafer for the handle substrates. We assume 2 shifts per day at 8 hours per shift with 300 days of operation in the year. We assume that our wholesale price per wafer would be \$75. These are assumptions are based on our breakdown of the costs currently associated with our product and may vary in the future.

Phase Two

We need to add on the additional semiconductor processing equipment in order to increase the throughput of the full manufacturing line. By adding this additional equipment, we could increase to the maximum throughput attainable for one accelerator of 432,000 wafers per year. This could possibly generate an estimated \$32M per year in revenue. Expenditures on the capital equipment could be reduced through the lease or purchase of used equipment. Again, please note these are forward looking projections, please refer to our risk factors. These assumptions are based on the Company meeting Beta Phase and Phase One successfully. If we do not achieve these phases, Phase Two may not exist in the

same capacity.

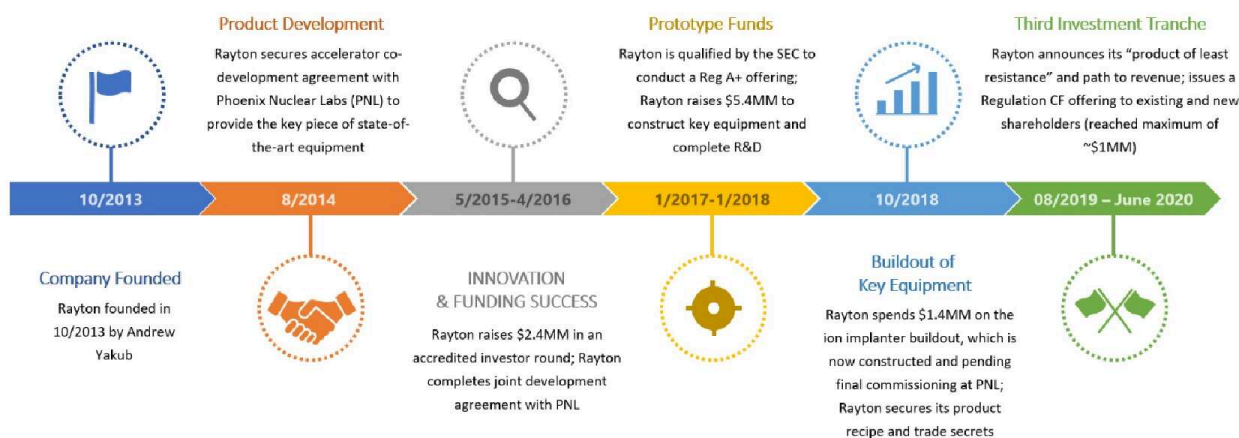
The estimated timeline of Phase 2 is 12 months beginning in Year 3, utilizing a combination of raised funds and company revenue to achieve these goals. We have based our assumptions on the following: we estimate that we will be able to attain \$32M in gross revenue in Year 3 provided that the company is able to attain approximately \$15.5M in additional production equipment. We estimate that in this phase there will be \$5.197M in operating expenses and \$9.072M in COGS. This assumes \$100 per GaAs wafer with 100 uses per wafer and \$20 per wafer for the handle substrates. We assume 2 shifts per day at 8 hours per shift with 300 days of operation in the year. We assume that our wholesale price per wafer would be \$75. Please note, these numbers are subject to change and cannot be guaranteed. Our assumptions are based on our analysis of the industry for GaAs wafers and the current need in the market. They are also based on our ability to increase production to scale, if these events do not occur there may be different results.

Reminder: The above information includes forward looking statements regarding the Company's business. Please refer to our Risk Factors in our Form C for further details. There is no guarantee the Company will ever meet these projections and the information above includes estimates based on current data, actual results not guaranteed.

Company Timeline



Rayton has had a history of success fund raising and completing R&D, and has made major progress in product development and in perfecting its manufacturing process

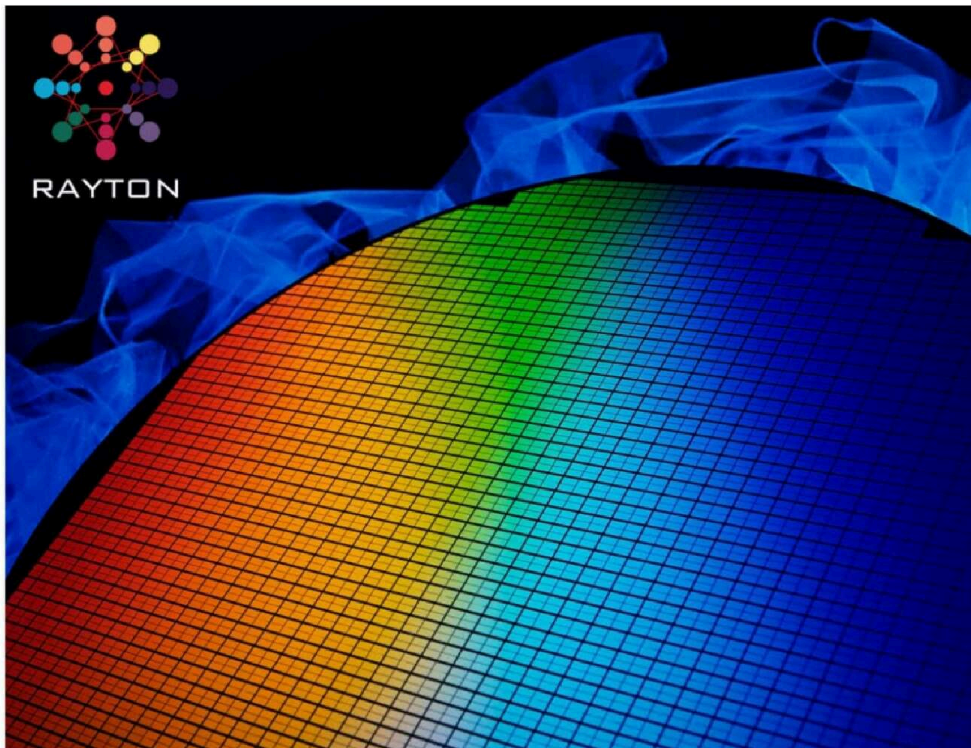


Why Invest?

Let's make history together

Your investment will help Rayton to develop a full proof-of-concept, which will, in turn, allow us to begin marketing our product. Looking forward; by diversifying the applications of our products, we will be able to strengthen ourselves for market entry.

Solar will continue to be a product at our roots, and we will continue to service the high-efficiency solar cell industry. We believe that initially bringing down the cost of GaAs wafers will have a ripple effect in bringing down the overall cost of GaAs-based solar cells.



**Image is computer-generated rendering.*

The markets for our product are diverse and increasing in demand. The GaAs wafer market was \$316.49M in 2019 and growing with a 7.2% compound annual growth rate (8). The overall GaAs device market is expected to grow to \$22

growth rate (9) and revenue that is expected to grow to \$1 billion by 2026 (9). We would like to enter this market with a “product zero” engineered GaAs wafer that we believe can be sold to the market at up to a twenty-five percent (25%) discount to competitive prices.

Our technology is positioned to have a major impact in many industries. We are getting closer every single day. We have the machine, we have the patents, and we have the process flow. We are making history as one of the first democratically-funded technology companies.

Join the 7,000 other shareholders who invested in Rayton and become part of this groundbreaking next-generation technology.