



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

June 16, 2011

Via Email

Mr. Patrick G. Rooney
Chief Executive Officer
Positron Corporation
7715 Loma Ct., Suite A
Fishers, IN 46038

Re: Positron Corporation
Form 10-K/A for the Fiscal Year Ended December 31, 2009
Filed May 6, 2011
Form 10-K for the Year Ended December 31, 2010
Filed March 31, 2011
Form 10-Q for the Quarter Ended March 31, 2011
Filed May 16, 2011
File No. 000-24092

Dear Mr. Rooney:

We have reviewed your response filed May 12, 2011 and have the following additional comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by amending your filings, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filings and the information you provide in response to these comments, we may have additional comments.

Form 10-K/A for the Fiscal Year Ended December 31, 2009

Item 10. Directors, Executive Officers . . . , page 22

1. We reissue the first sentence of prior comment 1. We note that your response does not explain how you have complied with Regulation S-K Item 405, including specific citations to any authority on which you rely. We also note that your Form 10-K for the

fiscal year ended December 31, 2010 does not appear to include the information required by Item 405. Please advise or revise.

Item 11. Executive Compensation, page 25

2. Please tell us how your response to prior comment 2 reconciles your disclosure in the tables on pages 26 and 31 regarding the number of shares underlying options held by Patrick Rooney. We note that your table on page 26 indicates that Mr. Rooney has options to purchase 575,000 shares of common stock, your table on page 31 indicates that Mr. Rooney is beneficial owner of 5,075,000 shares that may be acquired pursuant to stock options, footnote (ee) on page 32 indicates that Mr. Rooney may acquire 700,000 Series B shares pursuant to options, and footnote (b) on page 31 indicates that each share of Series B converts into 100 shares of your common stock.

Form 10-K for the Year Ended December 31, 2010

Item 1. Business, page 3

3. We note your response to comment 3 in your letter dated December 20, 2010 that you “will revise [y]our future filings to describe the development of [y]our business in the last three years including any material reclassification, merger, consolidation, or purchase or sale of assets not in the ordinary course of business.” Please tell us where you have included this information. For example, please tell us where you describe:
 - your changed business model; for example, when did you shift from primary manufacturing and selling to primary service of your products and how is this consistent with your other disclosure;
 - your “remaining” Houston operations; for example, how have your Houston operations changed over the last three years;
 - the closure of your Canadian operations; and
 - your acquisition of Dose Shield.

Item 10. Directors, Executive Officers, and Corporate Governance, page 21

4. We note your revised disclosure in this section of your Form 10-K for the fiscal year ended December 31, 2009 and your response to comment 12 in your letter dated December 20, 2010. Please tell us why you did not disclose in this filing Patrick G. Rooney’s previous experience as founder, chief executive officer, president, chairman, or director at IMAGIN Molecular Corporation, Cipher Holding, Inc., Cipher Holding Corp., Cipher Multimedia, Inc., or Momentum Holdings Corporation and Corey N. Conn’s previous experience as co-founder, Vice President, and Chief Financial Officer of Cipher-Multimedia, Inc.

5. We note your disclosure that Joseph G. Oliverio has been director and chief executive officer of Imagin Molecular Corporation since August 18, 2006 and Corey N. Conn has been director and chief financial officer of Imagin Molecular Corporation since August 19, 2003. Please tell us how this disclosure is consistent with the disclosure in the first paragraph of “Resignation and Election of New Directors and Officers” on page 6 of the amended Form 10-Q for the fiscal quarter ended June 30, 2010 filed by Imagin Molecular Corporation.

Compensation of Directors, page 26

6. We note your disclosure that “[b]eginning January 22, 1999 through current date” non-employee directors were not separately compensated for their services. However, we note that the option awards granted to Sachio Okamura and Dr. Anthony C. Nicholls in the beneficial ownership table on page 27. Please tell us how those directors received those options and where you have made the appropriate disclosures pursuant to Regulation S-K Item 402(r)(iv) or Item 404.

Security Ownership of Certain Beneficial Owners (a), page 27

7. We note your disclosure in footnote (d) on page 31 of your amended Form 10-K for the fiscal year ended December 31, 2009 of the shares beneficially owned by IMAGIN Diagnostic Centres, Inc. that are issuable upon conversion of Series B Preferred Stock and exercise of warrants. We note that you did not include similar disclosure in footnote (d) of page 27 of this filing. Please tell us whether IMAGIN Diagnostic Centres, Inc. owns 366,900,200 shares of your common stock directly or whether some of these shares may be acquired upon conversion of Series B Preferred Stock or exercise of warrants.

Security Ownership of Directors . . . , page 27

8. We note your response to prior comment 5. Please provide us the information required by Regulation S-K Item 403(b). Please ensure that you:
- include the total number of shares beneficially owned and the percent of the class owned for each class of equity securities, including your common shares, Series B shares, and Series S shares;
 - include an explanation of the number of common shares each beneficial owner would hold upon full conversion of Series B and Series S shares; and
 - reconcile your disclosure in the table of the “Title of Class” with your disclosure in the footnotes that your table includes Series B shares that may be acquired pursuant to option awards.

Please also confirm that you will provide all information required by Regulation S-K Item 403 in future filings.

Item 13. Certain Relationships and Related Transactions . . . , page 28

9. Please tell us, and revise future filings to clarify, the name of the related person and the basis upon which the person is related for the transactions disclosed in the first and third paragraph of this section.

Financial Statements, page 40

Note 1. Description of Business and Summary of Significant Accounting Policies, page 49

-Revenue Recognition, page 51

10. We note your disclosure here that prior to July 1, 2010 that you recognized revenue from system contracts and other nuclear devices when all significant costs have been incurred and the system has been shipped to the customer and *in certain cases* after installation is complete. However, in your response to comment 13 in your letter dated March 3, 2011, you stated that you recognized revenue on the medical machines sold after delivery, installation and a signed acceptance of the unit by the customer. Please clarify for us what you mean by the phrase “in certain cases” in your disclosure in the filing. Revise your future filings to clearly disclose when you recognized revenue for the sale of your products prior to July 1, 2010. Provide us with a proposed sample of your disclosure.
11. We note your response to comment 15 within your response letter dated March 3, 2011. Please revise your future filings to include a disclosure similar to the one provided within your response that relates to your application of 605-25 of the FASB Accounting Standards Codification.

Note 4. Deposits-Attrius® Systems, page 54

12. We note your response to prior comment 11 as well as your disclosures here and on page 54 of your March 31, 2011 Form 10-Q. Please address the following:
- You state that you believe that you have general inventory risk since the inventory is shipped from the facility in China on an “ex works” basis and that you assume “risks.” Please explain to us in more detail how the terms of your purchase agreements for the product (e.g., “ex works”) impacts when you take title of the product. Discuss the general location where NPMS delivers the product to fulfill the “ex works” shipping (e.g., on the loading dock). Also discuss who is responsible for selecting the shipping carrier and who is responsible for discharging the carrier to pick up the products. Refer to the guidance in Topic 605-45-45-5 and 45-12 of the FASB Accounting Standards Codification.

- Your response still does not address whether or not you have discretion in your supplier. As previously requested, please explain to us if you have discretion in your supplier selection. Refer to the guidance in Topic 605-45-45-10 of the FASB Accounting Standards Codification. Explain how you considered this in your evaluation of whether to recognize revenue gross or net.

Form 10-Q for the Quarter Ended March 31, 2011

Exhibit 32.2

13. We note that your certification furnished pursuant to Rule 13a-14(b) of the Exchange Act refers to the Form 10-Q for the fiscal year ending March 31, 2010. Please amend your filing to include a currently signed and dated certification that references the appropriate quarterly report. The amendment should include the entire filing with the revised certification.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Mr. Patrick G. Rooney
Positron Corporation
June 16, 2011
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You may contact Tara Harkins, Staff Accountant, at (202) 551-3639 or me at (202) 551-3643 if you have any questions regarding comments on the financial statements and related matters. Please contact Aslynn Hogue, Staff Attorney, at (202) 551- 3841, or Tim Buchmiller, Reviewing Attorney, at (202) 551- 3635 if you have questions on any other comments. In this regard, do not hesitate to contact Martin James, Senior Assistant Chief Accountant, at (202) 551-3671.

Sincerely,

/s/ Kevin L. Vaughn

Kevin L. Vaughn
Accounting Branch Chief