



May 1, 2014

VIA EDGAR

Division of Corporation Finance
Securities and Exchange Commission
Washington, D.C. 20549
Attention: Russell Mancuso

**Re: BioSig Technologies, Inc.
Registration Statement on Form S-1, originally filed July 22, 2013
File No. 333-190080, as amended (the "Registration Statement")**

Ladies and Gentlemen:

On behalf of BioSig Technologies, Inc. (the "Company"), transmitted herewith for filing is Amendment No. 5 to Form S-1 ("Amendment No. 5"), marked to show changes from Amendment No. 4 to Registration Statement on Form S-1 of the Company (File No. 333-190080), filed with the Securities and Exchange Commission (the "Commission") on March 28, 2014 ("Amendment No. 4"). We acknowledge receipt of the letter of comment dated April 11, 2014 (the "Comment Letter") from the staff (the "Commission Staff") of the Division of Corporation Finance of the Commission regarding the Registration Statement. The following are the Company's responses to the Comment Letter. The Company's responses are numbered to correspond to the Commission Staff's comments as numbered in the Comment Letter. For your convenience, each of the Commission Staff's comments contained in the Comment Letter have been restated below in their entirety, with the Company's corresponding response set forth immediately under such comment.

Fee Table

- 1. Please update the fee table to reflect the changes on the cover page of your prospectus.**

Response:

The Company has updated the fee table to reflect the additional shares being registered on Amendment No. 5 for which a filing fee has not already been paid.

Overview, page 1

- 2. Refer to the third paragraph of this section. In an appropriate section of your document, please clarify the nature of the dispute regarding the "status of [y]our technology."**

Response:

The Company has revised the disclosure on page 34 of Amendment No. 5 to indicate that Mr. Drachman alleged that all or a majority of the engineering documentation and technical files that Mr. Drachman believed to be necessary for the Company's product development and manufacturing had not been developed.

- 3. Please tell us where you believe your prospectus unambiguously informs investors of the development status of your proposed product, including a clear description of what you have developed to date and what material hurdles remain until you have completed development.**

Response:

The Company has revised the disclosure on pages 22-23 and 27-28 of Amendment No. 5 to include a discussion of the Company's proof of concept testing and its strategic plan with respect to the remaining milestones it must achieve prior to commercialization of its PURE EP System product. The Company believes that bullet-point section and subsequent discussion on pages 22-23 of Amendment No. 5 represents a clear description of what the Company has developed to date and what material hurdles remain until the Company has completed development of its PURE EP System product.

Technology and Development Plan, page 28

- 4. We note your response to prior comment 5 and your revised disclosures on pages 27-29. Please explain how a proof-of-concept study differs from the "more formal animal studies" that you reference on page 28. Also, please tell us the reasons for the delays reflected by the dates in this section compared to the dates in the second paragraph on page 27 of amendment 2 to your Form S-1; expand appropriate risk factors to clearly disclose actual delays that you have experienced.**

Response:

The Company has revised the disclosure on pages 23 and 28 of Amendment No. 5 to explain that the proof of concept study was intended to verify the technology, design and software supporting the PURE EP System, while the formal animal studies will be used to demonstrate the value of the PURE EP System to physicians and clinicians. The delays reflected by the dates in the Technology and Development Plan section as compared to the dates disclosed in Amendment Number 2 to the Company's Registration Statement on Form S-1 were caused a disruption to the Company's business caused by Mr. Drachman during his time serving as chief executive officer and president of the Company. Because Mr. Drachman, among other things, terminated most of the Company's employees and consultants, including the Company's engineering team, which was subsequently re-hired, the Company did not achieve the progress it had intended in the fourth quarter of 2013, which resulted in delays in the attainment of the Company's expected milestones. The Company has revised the disclosure in the risk factor entitled "We may be unable to develop our existing or future technology." on page 5 of Amendment No. 5, as well as the disclosure related to the milestones of the Company's product on page 28 of Amendment No. 5 to discuss this delay.

Patents, page 30

- 5. Please file as an exhibit to your registration statement the assignments mentioned in this section.**

Response:

The Company has filed the Patent Assignment as Exhibit 10.29 to Amendment No. 5.

- 6. We note your responses to prior comments 6 and 8 as well as your revised disclosures on page 30. Please revise to explain the differences between the October 2013 and December 2013 patent applications so that investors who may not be experts in your industry can understand what that each application covers. From your disclosure it should be clear why you believe the December 2013 application represents “core proprietary intellectual property”, while the October 2013 application does not. Your revised disclosure should also make clear (1) how an application related to “testing and training” differs from an application regarding “hardware and software” so that investors can understand the scope of what rights you have already been assigned and what remains to be assigned to you, and (2) what are the relevant “certain” products that you mention in the last sentence of the penultimate paragraph on page 1.**

Response:

The Company has revised the disclosure on pages 30-31 of Amendment No. 5 to expand upon the differences between the October 2013 patent application and the December 2013 patent application. The Company has also revised the disclosures on pages 1, 4 and 12 of Amendment No. 5 to clarify the nature of the “certain products” that the Company may be impaired from developing should it be required to transfer the October 2013 patent application to Mr. Drachman.

Executive Officers and Directors, page 34

- 7. We note your response to prior comment 9; however Regulation S-K, Item 401(e)(1) requires disclosure of principal occupations and employment during the past five years, including the name and principal business of any applicable corporations or other organizations. Therefore, it remains unclear how your disclosure satisfies the requirements of Item 401. It is also unclear how investors can adequately evaluate your disclosure about your CFO’s experience without this information. Please advise or revise.**

Response:

The Company has revised the disclosure on page 35 of Amendment No. 5 to provide additional details as to the nature of the consulting services that Mr. Chaussy provides through his wholly-owned entity, Anna & Co., Inc., and the types of companies for which he provides such services. Mr. Chaussy has provided services for dozens of small publicly reporting companies during the past five years and the Company believes that a description of the types of companies for which Mr. Chaussy provides services (“companies that lack sufficient resources to hire full-time employees to provide such [SEC reporting and compliance] services,” as stated in the revised disclosure) allows for more meaningful disclosure than stating the number of companies or the names of the companies for which Mr. Chaussy has provided services, which does not provide valuable information to investors beyond names and numbers. Instead, the Company believes that briefly describing Mr. Chaussy’s experience serving as a consultant providing services that support the chief financial officer and other financial professionals of publicly-reporting companies, and indicating that Mr. Chaussy services companies with limited financial resources, which is similar to the financial status of the Company, provides adequate and clear disclosure to investors.

- 8. Refer to your response to prior comment 2. Please tell us why you believe you need not provide disclosure regarding Dr. Drakulic pursuant to Regulation S-K Item 401(c) and to clarify your statement in the first sentence on page 38.**

Response:

Dr. Drakulic is no longer an employee of the Company and is only serving as a consultant to the Company. While Dr. Drakulic is a significant shareholder in the Company and made significant contributions to the Company in the past with respect to the development of the intellectual property underlying the Company's product, the Company believes that currently and in the future, Dr. Drakulic's contributions to the Company are, and will be, no more significant than the contributions of a number of other engineers employed by the Company or retained by the Company as consultants. Therefore, the Company does not believe that Dr. Drakulic would qualify as a significant employee of the Company, regardless of his status as a consultant, and, as such, the Company does not need to provide disclosure regarding Dr. Drakulic pursuant to Item 401(c) of Regulation S-K. In addition, the Company believes that the fact that Dr. Drakulic returned to the Company as a consultant without an employment agreement, as opposed to returning to the Company as an executive officer or even as an employee, serves as an indication of the nature of his current and future role with the Company, as compared to his former role as an executive officer of the Company.

2013 and 2012 Summary Compensation Table, page 37

- 9. Please tell us how your disclosure that no salary was earned in 2013 by your former CEO is consistent with your disclosure under the heading "Employment Agreements."**

Response:

The Company has revised its disclosure on page 38 of Amendment No. 5 to indicate the Mr. Drachman was paid one payment under his employment agreement and that the remainder of the salary due to him is under dispute.

- 10. Please tell us why compensation information is not required for Dr. Drakulic pursuant to Regulation S-K, Item 402(m)(2) (iii). In this regard, we note the employment agreement filed as Exhibit 10.13 and the consulting arrangement you reference in response to prior comment 2. Also, with a view to disclosure pursuant to Regulation S-K, Items 101, 303 and 404, please tell us the material terms of your consulting arrangement with Dr. Drakulic.**
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Response:

The Company has revised its disclosure on pages 38-40 of Amendment No. 5 to include compensation information for Dr. Drakulic for 2012 and 2013.

Employment Agreements, page 37

11. Please reconcile your response to prior comment 2 with your disclosure in the first sentence on page 38.

Response:

The Company has revised its disclosure on page 39 of Amendment No. 5 to indicate that Dr. Drakulic and Ms. Mikolaitis returned to positions with the Company in November 2013 and January 2014, respectively, as consultants without employment contracts.

Selling Stockholders, page 44

12. Generally, it is inconsistent with Section 5 of the Securities Act to file a registration statement to resell securities underlying convertible or exercisable securities when the related initial registered sale of those convertible or exercisable securities is not complete. From your disclosure in the first paragraph of this section, it appears that you negotiated the conversion terms of the securities after this registration statement was filed. Please provide us your analysis of how this negotiation was consistent with Section 5. Cite in your response all authority on which you rely.

Response:

The Company believes that the terms of its Series C Preferred Stock were complete in all material respects as of the filing of the Company's original Registration Statement on Form S-1 filed with the Commission on July 22, 2013 (the "Initial Registration Statement") and that the amendment to the terms of the Series C Preferred Stock that was filed with the Delaware Secretary of State on March 27, 2014 (the "March 27 Filing") was a clarification of the rights of the holders of the Series C Preferred Stock.

Section 10(a) of the Series C Preferred Stock, as set forth on pages C-18 and C-19 of Exhibit 3.1 to the Company's Initial Registration Statement, as amended by subsequent amendments to the Company's Certificate of Incorporation, contemplates nine different "Triggering Events" that, if any such event occurs, will grant additional rights to the holders of the Series C Preferred Stock. The Triggering Events include (a) if the Company fails to complete a financing or a series of financing by February 12, 2014 that results in gross proceeds to the Company of at least \$3,000,000 at a valuation of the Company of at least \$30,000,000 (Section 10(a)(v)) (the "Financing Failure"), and (b) from and after the sooner of February 12, 2014 or 120 days after the effective date of the Company's Registration Statement, if the Company's common stock fails to be listed on a trading market for more than five trading days within a twelve month period (Section 10(a)(viii)) (the "Listing Failure").

Section 10(b) of the Series C Preferred Stock sets forth the additional rights that the holders of the Series C Preferred Stock may exercise upon the occurrence of a Triggering Event. The additional rights are (a) redeeming shares of the Series C Preferred Stock in cash for a redemption price above the original stated value of the Series C Preferred Stock, or (b) (i) redeeming shares of the Series C Preferred Stock in shares of the Company's common stock for a redemption price above the original stated value of the Series C Preferred Stock, (ii) increasing the dividend rate on the Series C Preferred Stock to 18% per annum, or (iii) only upon the occurrence of the Financing Failure, reducing the conversion price of the Series C Preferred Stock from \$2.09 to \$1.50.

After February 12, 2014, the Financing Failure and the Listing Failure occurred. Certain holders of the Series C Preferred Stock indicated to the Company that they did not intend to exercise their redemption rights or increase the dividend rate under Section 10(b). Instead, as a result of the Financing Failure and the Listing Failure, such holders wanted the conversion price of the Series C Preferred Stock to be reduced from \$2.09 to \$1.50. As a result, the Company and the holders of the Series C Preferred Stock formalized the decision of such holders through the March 27 Filing, which indicated that upon the occurrence of a Triggering Event other than the Financing Failure and the Listing Failure, the holders of the Series C Preferred Stock have all of the rights as per the existing terms of the Series C Preferred Stock and upon the occurrence of the Financing Failure or the Listing Failure, the Company will automatically reduce the conversion price of the Series C Preferred Stock from \$2.09 to \$1.50. The March 27 Filing did not create any additional rights for the holders of the Series C Preferred Stock, but simply clarified the rights that the holders of the Series C Preferred Stock intended to avail themselves of, as indicated to the Company and extended those rights to all holders of the Series C Preferred Stock. The March 27 Filing did not create new terms or materially modify in any way the terms of the Series C Preferred Stock and, as such, the sales of the Series C Preferred Stock to the holders was complete as of the Company's filing of the Initial Registration Statement. Therefore, the Company's filing of the Initial Registration Statement registering for resale the shares of common stock issuable upon conversion of the Series C Preferred Stock was consistent with Section 5 of the Securities Act.

Certain Relationships and Related Party Transactions, page 55

- 13. Please update your disclosure concerning transactions with related persons. Please also show us how the transactions disclosed in this section are reconcilable to (1) the related party transactions reflected in your financial statements and (2) developments since the date of your financial statements.**

Response:

The Company has revised its disclosure on pages 56-57 of Amendment No. 5 to update all necessary disclosure concerning transactions with related persons, including those related party transactions reflected in the notes to the Company's financial statements.

Rule 144 Shares, page 56

14. Please show us how you determined the numbers disclosed in response to prior comment.

Response:

As a non-reporting issuer, the Company's securities are subject to a one year holding period for securities held by non-affiliates. The Company has held a number of closings of private placement transactions during the past year. On May 6, 2013, the Company issued to non-affiliates shares of its Series C Preferred Stock that are convertible into 124,669 shares of the Company common stock. On July 15, 2013, the Company issued to non-affiliates shares of its Series C Preferred Stock that are convertible into 239,340 shares of the Company's common stock. On January 31, 2014, the Company issued to non-affiliates 83,218 shares of its common stock. On April 4, 2014, the Company issued to non-affiliates 81,960 shares of its common stock. On April 30, 2014, the Company issued to non-affiliates 147,800 shares of its common stock. Upon the expiration of the one year holding period, the aforementioned securities will have satisfied the holding period requirements of Rule 144, assuming that the shares are not transferred in the interim and that none of the non-affiliate holders are affiliates of the Company after the expiration of the application one year holding period.

Series C Preferred Stock, page 57

15. Please clarify whether an arbitration award would be considered a judgment for purposes of clause (vii) in your disclosure in this section.

Response:

The Company has revised its disclosure on page 60 of Amendment No. 5 to clarify that an arbitration award would be considered a judgment for the purposes of the terms of the Company's Series C Preferred Stock. The Company has also revised its disclosure of page 4 of Amendment No. 5 to expand the risk factor that discusses the Company's arbitration with Mr. Drachman and its potential effect on the Company's Series C Preferred Stock.

Exhibits

16. The exhibits that you file pursuant to Regulation S-K Item 601(b)(10) should be complete, including all attachments. Please file the missing information from Exhibit 10.28. If you believe that you cannot file the missing information at this time due to other applicable laws, you may withdraw your registration statement and re-file when you are able to comply with the filing requirements.

Response:

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The Company has re-filed Exhibit 10.28 to Amendment No. 5., which includes the previously missing information from the exhibit.

Please direct any questions or comments concerning this response to the undersigned at (212) 659-4974.

Very truly yours,

/s/ Rick A. Werner

Rick A. Werner, Esq.

cc: Kenneth Londoner, BioSig Technologies, Inc.