



DIVISION OF
CORPORATION FINANCE

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

September 27, 2013

Via E-mail

Kenneth Londoner
Chairman and Chief Executive Officer
BioSig Technologies, Inc.
12424 Wilshire Boulevard, Suite 745
Los Angeles, CA 90025

**Re: BioSig Technologies, Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed September 11, 2013
File No. 333-190080**

Dear Mr. Londoner:

We have reviewed your registration statement and have the following 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 by amending your registration statement and providing the requested information. 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 registration statement and the information you provide in response to these comments, we may have additional comments.

Prospectus Cover

1. We note your revisions in response to prior comment 6. Please tell us what you intend as the difference between “privately negotiated prices” and “transactions that are not in the public market” in the second paragraph under your logo on the prospectus cover and on page 54.

Prospectus Summary, page 1

2. Please highlight in your prospectus summary the information provided in response to prior comment 18.

Risk Factors, page 2

3. We note your revised disclosure on page 17 concerning your research and development expenses for the six months ended June 30, 2013. Please revise your risk factor disclosure to address how the funding constraints you reference have impacted your product development.

We are obligated to develop and maintain..., page 13

4. Please refer to the Instructions to Regulation S-K, Item 308 and revise your disclosure concerning the December 31, 2013 date to reflect the correct fiscal year.

While we currently qualify as an “emerging growth company,” page 13

5. We note the last paragraph of your response to prior comment 3. Please tell us why the material that you circulated in connection with this offering in reliance on Section 5(d) of the Securities Act indicates that this is a private offering and refers to an offering of securities that are not being sold in connection with this offering.

Risks Related to our Series C Preferred Stock, page 14

6. Please provide us your analysis of whether your dividend obligation to your preferred stockholders presents a risk to investors purchasing common stock in this offering.

Our Series C Preferred Stock and our warrants, page 14

7. Please address that part of prior comment 8 that asked you to highlight in the risk factor the extent to which you historically have reduced the original conversion or exercise prices of outstanding securities.

Overview, page 21

8. We note your revision mentioned in response to prior comment 20. Please disclose the criteria that you used to determine that the changes were “significant” and “material” as you mention in the first bullet point on page 23.

Our Industry, page 23

9. Please tell us why you have revised your disclosure in the second paragraph in this section to remove discussion of the 2011 study and replaced it with 2010 information.

Treatment of Atrial Fibrillation..., page 24

10. Please ensure that the disclosure that you present is balanced. For example, given the information that you present in this section, it is unclear how investors would know of the limitations mentioned at the bottom of page 61 of the material that you attached to your response letter and the issues mentioned in the first paragraph on page 62 of that material.
11. Please clarify what you mean by “Mahapatra S.”

Initial Analysis, page 26

12. We note your response to prior comment 21; however, you did not tell us whether the recording from the “competitive” system represents a typical recording. Please address this aspect of the comment.

Strategic Alliances, page 27

13. Please expand your disclosure in the second paragraph to clarify when your collaboration with Dr. Natale and Dr. Di Biase occurred.

Intellectual Property, page 29

14. Please disclose the substance of your response to prior comment 25. In your revised disclosure, please clarify how you currently have rights to the technology if it has not yet been assigned to you. File all related agreements as exhibits to your registration statement.

Government Regulation, page 29

15. We note your revised disclosure in response to prior comment 26; however, you have not addressed the second sentence of the prior comment. Please disclose the implications in the event your belief concerning classification is incorrect, and add any material risk factors, as appropriate.

Biographical Information, page 32

16. We note your revised disclosure in response to prior comment 30 concerning Mr. Chaussy's past service as the chief financial officer for “small publicly traded” companies. To the extent that he held any of these positions during the past five years, please disclose the information required by Regulation S-K, Item 401(e)(1) and ensure that the period during which Mr. Chaussy worked for those entities is clear.

Security Ownership of Certain Beneficial Owners and Management, page 37

17. Please include the information in the tabular form indicated by Regulation S-K Item 403(b) for your management's beneficial ownership of your series A and B shares. In addition, show the effect of this offering on your disclosure in this section, including the automatic conversion mentioned in response to prior comment 49.

Selling Stockholders, page 39

18. Regarding your response to prior comment 41:
- Please explain to us how you determined the size of your public float. In this regard, we note the holdings of your officers and directors as disclosed in your beneficial ownership table. As appropriate, please provide us with a revised analysis concerning the relative size of the present offering.
 - Please clarify how the agreements described on page 49 and in footnote 17 to the selling stockholders table affect your analysis.
 - On page 15 of your response letter, you say that in August 2013 you issued securities for interest on notes that you say on page 13 were exchanged for shares and warrants in February 2013. Please clarify in your prospectus why the exchanged notes continue to earn interest, the interest rate, and the rate at which the interest was converted into shares.
19. Please reconcile the \$2.61 warrant exercise price mentioned in your response to prior comment 41 with the \$2.09 exercise price mentioned in the first paragraph of this section.
20. Please confirm that the table on page 40 reflects the same number of shares offered as does the fee table.

Rule 144 Shares, page 46

21. With a view toward clarification of your disclosure added in response to prior comment 52, please tell us when you believe your common equity can be resold pursuant to Rule 144.

Series C Preferred Stock, page 48

22. Refer to your disclosure that the holders of the Series C Preferred Stock vote together with your common stock on an as-converted basis, but may not vote the Series C stock in excess of 4.99% or 9.99% of your then outstanding shares. Please clarify when the 4.99% applies and when the 9.99% limitation applies. Also, please clarify which Series C stockholders will be unable to vote when the outstanding Series C represents more than the applicable percentage of common on an as-converted basis.

Plan of Distribution, page 54

23. Please expand your response to prior comment 58 to tell us the basis for your conclusion stated in the first sentence in that response.

Recent Sales of Unregistered Securities, page II-1

24. Please refer to prior comment 70, and provide us with a response that reconciles the information contained here with the information contained on pages F-21 and F-24.

Exhibits

25. Please refer to prior comment 71, and file the exhibits to Exhibit 10.5 and the schedules to Exhibit 10.6.

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 Act of 1933 and all applicable Securities 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.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

Kenneth Londoner
BioSig Technologies, Inc.
September 27, 2013
Page 6

You may contact Praveen Kartholy at (202) 551-3778 or Gary Todd at (202) 551-3605 if you have questions regarding comments on the financial statements and related matters. Please contact Joseph McCann at (202) 551-6262 or me at (202) 551-3617 with any other questions.

Sincerely,

/s/ Russell Mancuso

Russell Mancuso
Branch Chief

cc (via e-mail): Rick A. Werner, Esq.