



DIVISION OF
CORPORATION FINANCE

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

August 16, 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.
Registration Statement on Form S-1
Filed July 22, 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.

Form S-1 Facing Page

1. We note your reference to recapitalizations in footnote 1. Please revise to reflect the language of Rule 416.
2. Please identify the subsection of Rule 457 of Regulation C you used to calculate your registration fee, and explain why you have referred to the price at which the shares are being offered as "estimated" when it is fixed.

Prospectus

3. Since you appear to qualify as an "emerging growth company," as defined in the Jumpstart Our Business Startups Act, please:
 - Disclose that you are an emerging growth company;
 - Describe how and when a company may lose emerging growth company status;

- Briefly describe the various exemptions that are available to you, such as exemptions from Section 404(b) of the Sarbanes-Oxley Act of 2002 and Section 14A(a) and (b) of the Securities Exchange Act of 1934; and
- State your election under Section 107(b) of the JOBS Act:
 - If you have elected to opt out of the extended transition period for complying with new or revised accounting standards pursuant to Section 107(b), include a statement that the election is irrevocable; or
 - If you have elected to use the extended transition period for complying with new or revised accounting standards under Section 102(b)(1), provide a risk factor explaining that this election allows you to delay the adoption of new or revised accounting standards that have different effective dates for public and private companies until those standards apply to private companies. Please state in your risk factor that, as a result of this election, your financial statements may not be comparable to companies that comply with public company effective dates. Include a similar statement in your critical accounting policy disclosures.

In addition, consider describing the extent to which any of these exemptions are available to you as a Smaller Reporting Company.

Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications. Similarly, please supplementally provide us with any research reports about you that are published or distributed in reliance upon Section 2(a)(3) of the Securities Act of 1933 added by Section 105(a) of the Jumpstart Our Business Startups Act by any broker or dealer that is participating or will participate in your offering.

4. In an appropriate section of your prospectus, please describe the various factors considered in determining the \$2.09 offering price as required by Regulation S-K Item 505.
5. In an appropriate section of your prospectus, please disclose clearly your net tangible book value per share. See Regulation S-K Item 506.

Prospectus Cover

6. It is unclear what you mean by “until a market develops” in the first sentence of the second paragraph. We note your reference to the OTC Bulletin Board later in that paragraph. If you mean that the selling shareholders will sell at a price of \$2.09 per share until your shares are quoted on the OTC Bulletin Board and thereafter at prevailing market prices or privately negotiated prices, please revise to clarify. Please also revise your “Offering Price” disclosure on page 1 and “Plan of Distribution” disclosure beginning on page 51 accordingly.

Risk Factors, page 2

7. Please tell us whether you intend to register your common stock under Section 12(g) of the Exchange Act before this Form S-1 is effective. If you do not intend to register your common stock under Section 12(g), please add a risk factor to explain the effect of the automatic reporting suspension in Section 15(d) of the Exchange Act as well as the inapplicability of the proxy rules and Section 16 of the Exchange Act.
8. Please add a risk factor to explain clearly the effect on common stockholders of the anti-dilution provisions in your other outstanding securities. Highlight in the risk factor the extent to which you historically have reduced the original conversion or exercise prices of outstanding securities.

Special Note, page 14

9. Please clarify your statement that your disclosure “may not be accurate indications . . .” You should not include disclosure in your filing that you do not believe is accurate.

Use of Proceeds, page 15

10. Because you have not registered the exercise of the warrants, please relocate your discussion of the use of the exercise proceeds from here and your prospectus cover to remove any implication that those funds are proceeds from the registered offering.

Results of Operations, page 17

11. Please explain the costs associated with the “beneficial conversion feature” of your Series C Preferred Stock described in the third paragraph on page 18.

General and Administrative Expenses, page 18

12. Your discussion of the change in general and administrative expenses does not explain a significant portion of the increase. Please provide a more complete discussion.

Liquidity and Capital Resources, page 19

13. Please include a discussion of the effect on your liquidity of your obligations to the holders of your Series C Preferred stock.

Overview, page 21

14. Please file the consent of the representatives mentioned in the last sentence of the first paragraph on page 22 to your use of their opinion regarding the “positive results” in this prospectus.
15. Please reconcile your statement in the second paragraph on page 22 that ablation is becoming the first line of therapy for patients with arrhythmias with your statement in the second paragraph on page 24 that many physicians do not perform ablations because it has not been accepted as standard procedure.
16. Please describe the material terms of the relationships mentioned in the first paragraph on page 22, the last bullet point on page 22, and under the caption “Strategic Alliances” on page 27. Include the material obligations of the parties, the nature of the collaboration, when the relationship began, when the agreements expire, material termination provisions, and material compensation arrangements. Also clarify whether the relationships are continuous and ongoing. File the agreements governing the relationships as exhibits to your registration statement.

Our Industry, page 23

17. Please tell us how you determined that you have included the most recent data in your prospectus. We note for example your reference to 1999 and 2002 data at the top of page 24. Also tell us whether you commissioned any of the data disclosed in this section or elsewhere in your prospectus.

Our Products, page 25

18. Please clarify whether your proposed product is intended to be used in addition to existing hardware and software or as a replacement for existing hardware and software. If a replacement, please clarify what it is intended to replace and how you have or will obtain rights to the required intellectual property to perform the functions of the products that will be replaced.

Initial Analysis, page 26

19. Please clarify what you mean by “baseline wander” and “notch filter.”
20. Disclose the criteria that you used to determine that the change was “significant” as you mention in the second paragraph.
21. Refer to the first picture on page 26. Please tell us whether the recording from the “competitive” system represents the typical recording that current systems provide. Also, clarify what you mean by “ABLD.”

22. Please clarify how the last picture on page 26 demonstrates “confidence indexes.”

Competition, page 27

23. Please provide us support for your statement about the “main reasons” in the paragraph following the list of bullet points in this section.

Suppliers, page 28

24. We note your disclosure that you are building your proposed product from supplies that are available from others. However, in the last paragraph on page 25, you disclose that your system involves proprietary hardware, software and algorithms. Please clarify what is proprietary about your proposed product and how your supply arrangements are consistent with the claimed proprietary nature of the proposed product.

Intellectual Property, page 28

25. With a view toward clarified disclosure regarding your rights to the potential product you describe, please tell us who conceived of the proprietary elements of your proposed product, when this occurred, and how you have rights to that person’s concepts.

Government Regulation, page 28

26. Please clarify the basis for your belief that your proposed product will be classified as a Class II device. Disclose the implications for the length of the regulatory clearance process and the nature and extent of required studies if your belief is incorrect; add any material risk factors. In this regard, it is unclear what you mean by the term “nominally” in the context of the last sentence of the first paragraph under the heading “510(k) Clearance Process” on page 29 and whether you believe your device may fall into the category of significantly different devices that must go through the pre-market approval process.
27. Please provide us the basis for your statement regarding the length of time that the 501(k) clearance process “usually takes.” In this regard, please tell us why you believe that it is reasonable to represent to investors that you can complete trials in the fourth quarter of 2014 and obtain FDA marketing clearance by the end of 2014 as you disclose on page 27.

Executive Officers and Directors, page 31

28. Please disclose all information required by Regulation S-K Item 401(e)(2). For example, we note Mr. Londoner’s role with chatAND, Inc.

29. If Mr. Londoner's relationship with NewCardio extended beyond December 2007, please clarify your disclosure. Also if NewCardio or other entities named in this section had or were developing products involving electrophysiology studies, please clarify your disclosure accordingly.
30. Please include the information required by Regulation S-K Item 401 regarding the principal financial officer that you identify on the Signatures page of this Form S-1.
31. Refer to the awards mentioned in the last paragraph on page 31. With a view toward clarified disclosure, please tell us the criteria for selecting the award recipient, whether others also received the awards, and whether any consideration was provided to enter the contest or receive the award.
32. Please tell us the public medical device company on which Dr. Drakulic served as a member of the board of directors as suggested by the last sentence on page 31.

Executive Compensation, page 34

33. Please reconcile the 2011 CEO compensation in the table with your disclosure on page 18 regarding the CEO having waived compensation prior to 2012.
34. Please disclose when you granted the options mentioned in the first table on page 35.
35. Refer to your disclosure on page F-10 regarding shares issued for services provided by founders. Please provide us your analysis of whether those transactions should be reported in your Summary Compensation Table or in the disclosure required by Regulation S-K item 404.

Director Compensation, page 35

36. The first sentence of footnote 1 appears to indicate that the information in your table differs from the grant date fair value disclosure required by Regulation S-K Item 402(r)(2)(iv). Please clarify. In this regard:
 - please tell us why the compensation explained in footnote (5) is not reported in a "Stock Awards" column of the table complying with Item 402(r)(2)(iii).
 - please see Regulation S-K Item 402(n)(2)(v) and Instruction 1 to Item 402(n)(2)(v), and revise your table and footnotes on page 34 accordingly.

Security Ownership of Certain Beneficial Owners, page 36

37. Please tell us why the entity holding 3,606,250 shares mentioned in footnotes (4) and (12) is not named and included in the table as a beneficial owner of more than 5% of a class of your voting securities.

Selling Stockholders, page 38

38. Refer to the last sentence of the second paragraph in this section. Given that you are not eligible to rely on Rule 430B(b), please tell us the authority on which you rely to include additional selling stockholders in supplements or amendments.
39. Please disclose when the selling stockholders acquired the preferred stock and warrants related to the offered shares. Also disclose the amount that the selling stockholders paid for those preferred shares and warrants, and any changes to the exercise and conversion prices since you issued the securities.
40. If selling stockholders participated in financings during the past three years other than the transaction in which they acquired the preferred stock and warrants related to the offered shares, please disclose the nature and extent of that participation. Include the amount the selling shareholders paid per \$5000 preferred share.
41. Please provide us your analysis of whether this offering is on behalf of the issuer. Please refer to the Division of Corporation Finance's Securities Act Rules Compliance and Disclosure Interpretation 612.09 available on the Commission's web site.
42. For stockholders identified in both the table in this section and the table on page 37, the disclosed beneficial ownership should be the same in both tables. We note for example the difference in the beneficial ownership disclosed for Jonathan Steinhouse.
43. With a view toward clarified disclosure, please tell us whether any offered shares relate to dividends paid or payable on the preferred stock. Also, please tell us how you determined the number of shares to register for sale, showing your calculations.
44. Please disclose Alpha Capital Anstalt's rights under its agreements with you, including its right to expense reimbursement mentioned in exhibit 10.5.

Related Party Transactions, page 44

45. Please file as exhibits to your registration statement the agreements mentioned in this section.
46. Please describe the indemnity agreement you have entered into with director Seth Fischer.
47. Please quantify the interest rate on the November 21, 2012 note. Also disclose the amount of interest paid to related persons on that note and the bridge notes.
48. Please tell us why this section does not address the related party advances mentioned on pages F-3 and F-22.

Description of Securities, page 44

49. If the preferred stock will convert into common stock on the effective date of this registration statement, please say so clearly and directly; expand the first paragraph of this section to show the effect of the automatic conversion, including the effect on number of authorized and outstanding shares, on any dividends owed to the preferred stockholders, and on the number of common stockholders.
50. Please disclose in your prospectus the rights of Alpha Capital Anstalt included in your charter, and clarify which rights will terminate upon the automatic conversion of preferred stock on the effective date of this registration statement.
51. Please discuss the rights of holders mentioned in section 4.12 of exhibit 10.5.
52. Please provide the information required by Regulation S-K Item 201(a)(2)(ii) and (b)(1).

Series C Preferred Stock, page 46

53. Please tell us why you do not describe here the automatic conversion mentioned in the first paragraph on page F-20.
54. Please disclose the voting rights of the Series C stockholders; we note page C-9 of exhibit 3.1. Also, include in your prospectus a table of beneficial owners of more than 5% of your Series C preferred stock as required by Regulation S-K Item 403(a).
55. Please tell us how you determined the February 12, 2014 date in clause (vii) of the second paragraph. Also, please avoid presenting your disclosure in a long paragraph with embedded lists.

Warrant, page 47

56. Please clearly describe here the warrants mentioned in the third paragraph on page F-30.

Five-Year Amendment Warrants, page 47

57. Please replace the term “certain” with specific disclosure regarding the amendments and the relevant holders of the preferred stock.

Plan of Distribution, page 51

58. Refer to the last sentence on page 52. If lack of state registration or qualification creates material liquidity risks, please add an appropriate risk factor to your prospectus.

Change in Our Public Accounting Firm, page 53

59. Tell us how termination of the prior auditor on May 28, 2013 is retroactive to December 31, 2012. In that regard, we see that the audit report is dated after the date of termination and it is unclear how the termination date is other than May 28, 2013.
60. Please revise the first sentence of the third paragraph to fully address disagreements and reportable events from inception through May 28, 2013, the date you informed the prior auditor of their termination.
61. Please tell us about the substance of the disagreement with the prior auditor. Tell us whether your actual accounting for the instruments differs from that recommended by the prior auditor, and, if so, the basis in GAAP for your ultimate accounting determination.

Financial Statements

Balance Sheet, page F-3

62. Please disclose the amortization method and life assigned to the capitalized financing cost asset.

Note 1. Summary of Significant Accounting Policies, page F-7

Stock-Based Compensation, page F-9

63. Please revise to disclose the substance of your accounting policy for non-employee stock compensation. The reference to the FASB Codification is not sufficiently descriptive.

Note 8. Redeemable Preferred Stock, page F-12

64. Please revise to explain how you accounted for the difference between the proceeds and carrying amounts of the preferred shares. If the asset titled “deferred financing costs” is related to this difference, please clarify in your filing.

Note 9. Stockholder Equity, page F-14

65. In the absence of a public market for your common shares, here and in Note 10, please disclose the actual per share fair values utilized in determining stock based compensation on the dates of the described transactions. Please also describe the factors management considered in arriving at those fair values. Further, please also apply this comment to the disclosures about equity transactions described in the notes to your interim financial statements. In that there is no quoted market price for your equity, it appears that you should also provide critical accounting policy disclosure in MD&A that explains how you

determine the fair value of your common and preferred shares and that describes the judgments and uncertainties that underlie your fair value determinations.

Unaudited Financial Statements for the Quarter Ended March 31, 2013

General

66. Please update the financial statements when required by Article 8-08 of Regulation S-X.

Note 8. Series C 9% Redeemable Preferred Stock, page F-31

67. Please disclose how you computed the beneficial conversion feature on the Series C Preferred Stock and disclose the basis for the amortization period.
68. With regards to the 1,069,377 warrants issued in connection with the sale of Series C Preferred Stock, we note that these warrants contain “certain defined anti-dilutive and future cashless provisions.” Please expand your disclosure to more fully describe these provisions as well as any other significant terms of the warrant agreement.
69. We see that you entered into a registration rights agreement in connection with the sale of the Series C preferred stock. Please add accounting policy disclosure that describes the accounting for registration rights agreements. Refer to FASB ASC 825-20.

Recent Sales of Unregistered Securities, page II-1

70. Please show us how you reconcile the disclosure here with the information on page F-5, F-21 and F-24. Also, for each transaction that you claim was exempt from registration based on Regulation D, please tell us the date on which you filed the Form D.

Exhibits

71. Please note that, except for documents that you file in compliance with Regulation S-K Item 601(b)(2), the exhibits to your registration statement should include all schedules and attachments. Please file the schedules missing from exhibits 10.3-10.6 and the attachment missing from exhibit 16.1.
72. To the extent there is a delay in requesting effectiveness of your registration statement, or there is any change, other than typographical, made to the financial statements, or there have been intervening events since the prior filing that are material to the company, please provide a currently dated and signed consent from your independent accountants with the next amendment.

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.

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 Sally Brammell at (202) 551-3779 or me at (202) 551-3528 with any other questions.

Sincerely,

/s/ Russell Mancuso

Russell Mancuso
Branch Chief

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