

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington D.C. 20549

FORM 10-Q

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended: **September 30, 2016**

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from \_\_\_\_\_ to \_\_\_\_\_.

**XG SCIENCES, INC.**

(Exact name of registrant as  
specified in its  
charter)

**Michigan**

(State or other jurisdiction of  
incorporation or organization)

**333-209131**

(Commission File No.)

**20-4998896**

(I.R.S. Employer Identification  
No.)

**3101 Grand Oak Drive  
Lansing, MI 48911**

(Address of principal executive offices) (zip code)

**(517) 703-1110**

(Issuer Telephone number)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes  No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company filer. See definition of "accelerated filer" and "large accelerated filer" in Rule 12b-2 of the Exchange Act (Check one):

Large Accelerated Filer  Accelerated Filer  Non-Accelerated Filer  Smaller Reporting Company

Indicate by check mark whether the registrant is a shell company as defined in Rule 12b-2 of the Exchange Act. Yes  No

As of November 3, 2016, there were 1,236,673 shares outstanding of the registrant's common stock.

---

**XG SCIENCES, INC.**  
**FORM 10-Q**  
**SEPTEMBER 30, 2016**  
**INDEX**

<b>PART I</b>		
ITEM 1.	<a href="#"><u>FINANCIAL STATEMENTS</u></a>	4
ITEM 2.	<a href="#"><u>MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS</u></a>	14
ITEM 3.	<a href="#"><u>QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK</u></a>	24
ITEM 4.	<a href="#"><u>CONTROLS AND PROCEDURES</u></a>	24
<b>PART II</b>		
ITEM 1.	<a href="#"><u>LEGAL PROCEEDINGS</u></a>	24
ITEM 1A.	<a href="#"><u>RISK FACTORS</u></a>	24
ITEM 2.	<a href="#"><u>UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS</u></a>	25
ITEM 3.	<a href="#"><u>DEFAULTS UPON SENIOR SECURITIES</u></a>	25
ITEM 4.	<a href="#"><u>MINE SAFETY DISCLOSURES</u></a>	25
ITEM 5.	<a href="#"><u>OTHER INFORMATION</u></a>	25
ITEM 6.	<a href="#"><u>EXHIBITS</u></a>	26
	<a href="#"><u>SIGNATURES</u></a>	27

**FORWARD-LOOKING STATEMENTS**

The information in this Quarterly Report on Form 10-Q contains “forward-looking statements” and information within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”) relating to XG Sciences, Inc., a Michigan corporation and its subsidiary, XG Sciences IP, LLC, a Michigan corporation (collectively referred to as “we”, “us”, “our”, “XG Sciences”, “XGS”, or the “Company”), which are subject to the “safe harbor” created by those sections. These forward-looking statements include, but are not limited to, statements concerning our strategy, future operations, future financial position, future revenues, projected costs, prospects and plans and objectives of management. The words “anticipates,” “believes,” “estimates,” “expects,” “intends,” “may,” “plans,” “projects,” “will,” “would” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. These forward-looking statements involve known and unknown risks and uncertainties that could cause our actual results, performance or achievements to differ materially from those expressed or implied by the forward-looking statements, including, without limitation, the risks set forth on beginning on page 18 under the section entitled “Risk Factors” in our Post-Effective Amendment No. 2 (declared effective August 31, 2016) to the Existing Registration Statement No. 4 to our Registration Statement on Form S-1 (File No. 333-209131) as filed with the Securities and Exchange Commission (the “SEC”) on April 12, 2016, and declared effective on April 13, 2016.

**XG SCIENCES, INC.**  
**CONDENSED CONSOLIDATED BALANCE SHEETS**

	<u>September 30,</u> <u>2016</u>	<u>December 31,</u> <u>2015</u>
	<u>(unaudited)</u>	
<b>ASSETS</b>		
<b>CURRENT ASSETS</b>		
Cash	\$ 637,504	\$ 1,060,224
Accounts receivable, less allowance for doubtful accounts of \$10,000 at September 30, 2016 and December 31, 2015	58,458	54,413
Inventories	226,599	229,034
Other current assets	295,093	194,096
	<u>1,217,654</u>	<u>1,537,767</u>
Total current assets		
<b>PROPERTY, PLANT AND EQUIPMENT, NET</b>	<b>3,153,234</b>	<b>3,753,248</b>
<b>RESTRICTED CASH FOR LETTER OF CREDIT</b>	<b>195,425</b>	<b>195,206</b>
<b>INTANGIBLE ASSETS, NET</b>	<b>455,587</b>	<b>411,789</b>
<b>TOTAL ASSETS</b>	<b>\$ 5,021,900</b>	<b>\$ 5,898,010</b>
<b>LIABILITIES AND STOCKHOLDERS' DEFICIT</b>		
<b>CURRENT LIABILITIES</b>		
Accounts payable and other liabilities	\$ 1,184,343	\$ 704,177
Short-term promissory notes	379,600	497,324
Current portion of capital lease obligations	247,229	178,487
Total current liabilities	<u>1,811,172</u>	<u>1,379,988</u>
<b>LONG TERM LIABILITIES</b>		
Long term portion of capital lease obligations	190,938	354,483
Derivative liability - warrants	7,843,076	8,235,163
Total long term liabilities	<u>8,034,014</u>	<u>8,589,646</u>
<b>TOTAL LIABILITIES</b>	<b>9,845,186</b>	<b>9,969,634</b>
<b>STOCKHOLDERS' DEFICIT</b>		
Series A convertible preferred stock, 3,000,000 shares authorized, 1,822,116 and 1,800,696 shares issued and outstanding, liquidation value of \$21,865,392 and \$21,608,376 at September 30, 2016 and December 31, 2015, respectively	21,548,926	21,291,912
Series B Preferred Stock, 1,500,000 shares authorized, 269,987 shares issued and outstanding, liquidation value of \$4,319,792 at September 30, 2016 and December 31, 2015	3,651,533	3,651,533
Common stock, no par value, 25,000,000 shares authorized, 1,224,298 and 836,544 shares issued and outstanding at September 30, 2016 and December 31, 2015, respectively	11,128,617	8,565,225
Additional paid in capital	6,208,741	5,791,074
Accumulated deficit	<u>(47,361,103)</u>	<u>(43,371,368)</u>
Total stockholders' deficit	<u>(4,823,286)</u>	<u>(4,071,624)</u>
<b>TOTAL LIABILITIES AND STOCKHOLDERS' DEFICIT</b>	<b>\$ 5,021,900</b>	<b>\$ 5,898,010</b>

See notes to unaudited condensed consolidated financial statements.

**XG SCIENCES, INC.**  
**CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS**  
**FOR THE THREE AND NINE MONTHS ENDED SEPTEMBER 30, 2016 AND 2015 (unaudited)**

	<u>For the Three Months Ended</u> <u>September 30,</u>		<u>For the Nine Months Ended</u> <u>September 30,</u>	
	<u>2016</u>	<u>2015</u>	<u>2016</u>	<u>2015</u>
<b>REVENUES</b>				
Product sales	\$ 88,856	\$ 38,295	\$ 230,635	\$ 156,608
Grants	50,111	80,967	208,475	299,879
Licensing revenue	25,000	25,000	75,000	75,000
Total revenue	<u>163,967</u>	<u>144,262</u>	<u>514,110</u>	<u>531,487</u>
<b>COST OF GOODS SOLD</b>				
Direct costs	44,344	24,848	101,397	77,516
Unallocated manufacturing expenses	323,051	447,872	1,071,000	1,264,432
Total cost of goods sold	<u>367,395</u>	<u>472,720</u>	<u>1,172,397</u>	<u>1,341,948</u>
<b>GROSS LOSS</b>	<u>(203,428)</u>	<u>(328,458)</u>	<u>(658,287)</u>	<u>(810,461)</u>
<b>OPERATING EXPENSES</b>				
Research and development	231,312	359,340	866,668	1,135,326
Sales, general and administrative	896,650	997,404	2,618,252	3,133,375
Total operating expenses	<u>1,127,962</u>	<u>1,356,744</u>	<u>3,484,920</u>	<u>4,268,701</u>
<b>OPERATING LOSS</b>	<u>(1,331,390)</u>	<u>(1,685,202)</u>	<u>(4,143,207)</u>	<u>(5,079,162)</u>
<b>OTHER INCOME (EXPENSE)</b>				
Incentive refund and interest income	24,197	28,996	72,423	80,624
Interest expense	(56,013)	(583,980)	(241,011)	(1,640,668)
Gain (loss) from change in fair value of derivative liability – warrants	108,056	(414,858)	340,669	(143,845)
Loss on disposal of equipment	(18,609)	-	(18,609)	-
Total other income (expense)	<u>57,631</u>	<u>(969,842)</u>	<u>153,472</u>	<u>(1,703,889)</u>
<b>NET LOSS</b>	<u>\$ (1,273,759)</u>	<u>\$ (2,655,044)</u>	<u>\$ (3,989,735)</u>	<u>\$ (6,783,051)</u>
<b>WEIGHTED AVERAGE NUMBER OF SHARES OUTSTANDING –</b>				
Basic and diluted	<u>914,648</u>	<u>835,544</u>	<u>959,904</u>	<u>836,544</u>
<b>NET LOSS PER SHARE – Basic and diluted</b>	<u>\$ (1.39)</u>	<u>\$ (3.18)</u>	<u>\$ (4.16)</u>	<u>\$ (8.11)</u>

See notes to unaudited condensed consolidated financial statements.

**XG SCIENCES, INC.**  
**CONDENSED CONSOLIDATED STATEMENT OF CHANGES IN STOCKHOLDERS' (DEFICIT) FOR THE NINE MONTHS**  
**ENDED SEPTEMBER 30, 2016**  
**(unaudited)**

	Preferred stock (A)		Preferred stock (B)		Common stock		Additional paid-in capital	Accumulated deficit	Total
	Shares	Amount	Shares	Amount	Shares	Amount			
<b>Balances, December 31, 2015</b>	1,800,696	\$ 21,291,912	269,987	\$ 3,651,533	836,544	\$ 8,565,225	\$ 5,791,074	\$ (43,371,368)	\$ (4,071,624)
Stock issued for cash	-	-	-	-	387,754	3,102,032	-	-	3,102,032
Stock issuance fees and expenses	-	-	-	-	-	(538,640)	-	-	(538,640)
Reclassification of Derivative Liability Warrants to Equity	-	-	-	-	-	-	51,418	-	51,418
Warrants issued with Bridge Financings	-	-	-	-	-	-	24,060	-	24,060
Preferred stock issued to pay capital lease obligations	21,420	257,014	-	-	-	-	-	-	257,014
Stock based compensation expense	-	-	-	-	-	-	342,189	-	342,189
Net loss	-	-	-	-	-	-	-	(3,989,735)	(3,989,735)
<b>Balances, September 30, 2016</b>	<u>1,822,116</u>	<u>\$ 21,548,926</u>	<u>269,987</u>	<u>\$ 3,651,533</u>	<u>1,224,298</u>	<u>\$ 11,128,617</u>	<u>\$ 6,208,741</u>	<u>\$ (47,361,103)</u>	<u>\$ (4,823,286)</u>

See notes to unaudited condensed consolidated financial statements.

**XG SCIENCES, INC.**  
**CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS**  
**FOR THE NINE MONTHS ENDED SEPTEMBER 30, 2016 AND 2015 (unaudited)**

	2016	2015
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>		
Net loss	\$ (3,989,735)	\$ (6,783,051)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	684,199	641,304
Amortization of intangible assets	26,856	21,105
Loss on disposal of intangible assets	18,609	-
Stock based compensation expense	342,189	420,048
Non-cash interest expense	213,906	1,550,616
Gain from change in fair value of derivative liability - warrants	(340,669)	143,845
(Increase) Decrease in:		
Accounts receivable	(4,044)	(42,275)
Inventory	2,434	(78,593)
Other current and non-current assets	(101,216)	27,700
Increase (Decrease) in:		
Accounts payable and other liabilities	480,164	(491,842)
<b>NET CASH USED IN OPERATING ACTIVITIES</b>	<u>(2,667,307)</u>	<u>(4,591,143)</u>
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>		
Purchases of property and equipment	(84,187)	(157,983)
Purchases of intangible assets	(89,264)	(59,663)
<b>NET CASH USED IN INVESTING ACTIVITIES</b>	<u>(173,451)</u>	<u>(217,646)</u>
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>		
Advances (repayments) of capital lease obligations	29,896	(28,764)
Repayments of short-term notes	(750,000)	-
Advances on short-term notes	574,750	-
Proceeds from issuance of preferred stock and warrants	-	4,319,792
Proceeds from issuance of common stock	3,102,032	14,000
Common stock issuance fees and expenses	(538,640)	-
<b>NET CASH PROVIDED BY FINANCING ACTIVITIES</b>	<u>2,418,038</u>	<u>4,305,028</u>
<b>NET (DECREASE) IN CASH</b>	(422,720)	(503,761)
<b>CASH AT BEGINNING OF PERIOD</b>	1,060,224	2,088,866
<b>CASH AT END OF PERIOD</b>	<u>\$ 637,504</u>	<u>\$ 1,585,105</u>
<b>SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION:</b>		
Cash paid for interest	\$ 27,107	\$ 90,052
<b>SUPPLEMENTAL DISCLOSURE OF NON-CASH INVESTING AND FINANCING:</b>		
Value of preferred stock issued for AAOF capital lease obligations	\$ 257,014	\$ 257,015
Property and equipment under capital leases	\$ 38,998	
Reclassification of derivative liability warrants to equity	\$ 51,418	
Warrants issued with bridge financings	\$ 24,060	

See notes to unaudited condensed consolidated financial statements.

**XG SCIENCES, INC.**  
**NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**  
**SEPTEMBER 30, 2016**

**NOTE 1 - NATURE OF BUSINESS AND BASIS OF PRESENTATION**

XG Sciences, Inc., a Michigan company located in Lansing, Michigan and its subsidiary, XGS IP, LLC (collectively referred to as “we”, “us”, “our”, or the “Company”) manufactures graphene nanoplatelets made from graphite, using a proprietary manufacturing process to split natural flakes of crystalline graphite into very small and thin particles, which we sell as xGnP® graphene nanoplatelets. These particles are then used in products like battery electrodes, thin sheets, films, inks and coatings that we sell to other companies. We also sell our nanoparticles in the form of bulk powders or dispersions to other companies for use as additives to make composite and other materials with specially engineered characteristics. Additionally, we license our technology to other companies in exchange for royalties and other fees.

Basis of Presentation

The accompanying interim condensed consolidated financial statements are unaudited and have been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”) for interim financial information and the instructions to Form 10-Q and do not include all of the information and footnotes required by GAAP for complete financial statements. All intercompany transactions have been eliminated in consolidation.

Certain information and footnote disclosures normally included in the Company’s annual audited consolidated financial statements and accompanying notes have been condensed or omitted in these interim condensed consolidated financial statements. Accordingly, the unaudited condensed consolidated financial statements included herein should be read in conjunction with the audited consolidated financial statements for the year ended December 31, 2015, as filed with the Securities and Exchange Commission (“SEC”) on Form S-1 (Registration No. 333-209131), as amended and having an effective date of August 31, 2016.

The results of operations presented in this quarterly report are not necessarily indicative of the results of operations that may be expected for any future periods. In the opinion of management, these unaudited condensed consolidated financial statements include all adjustments and accruals, consisting only of normal recurring adjustments that are necessary for a fair statement of the results of all interim periods reported herein.

**NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

Going Concern

We have historically incurred recurring losses from operations and we may continue to generate negative cash flows as we implement our business plan. Our unaudited condensed consolidated financial statements are prepared using GAAP as applicable to a going concern, which contemplates the realization of assets and liquidation of liabilities in the normal course of business.

We currently do not have sufficient cash or commitments for financing to sustain our operations for the next twelve months. Our plan is to develop customer relationships and increase our revenues derived from our products and IP licensing. Although we have historically incurred operating losses, we have been able to fund such losses primarily by selling common and preferred stock and convertible notes. We expect that our cash on hand at September 30, 2016 of \$637,504 and proceeds from our initial public offering of common stock (“IPO”) \$3,102,032 at September 30, 2016 will sustain our operations for the next twelve months. However, we cannot make any assurances that additional financing will be available to us and, if available, completed on a timely basis, on acceptable terms, or at all.

There has been no public market for our securities and a public market may never develop, or, if any market does develop, it may not be sustained. Our common stock is not currently quoted on or traded on any exchange or to our knowledge, on any over-the-counter market. In the event we are unable to fund our operations from existing cash on hand, operating cash flows, additional borrowings or raising equity capital, we may be forced to reduce our expenses, slow down our growth rate, or discontinue operations. Our condensed consolidated financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might be necessary should we be unable to continue as a going concern.

**XG SCIENCES, INC.**  
**NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**  
**SEPTEMBER 30, 2016**

Use of Estimates

The preparation of our condensed consolidated financial statements in conformity with GAAP requires us to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, together with amounts disclosed in the related notes to the financial statements. Actual results and outcomes may differ from our estimates, judgments and assumptions. Significant estimates, judgments and assumptions used in these condensed consolidated financial statements include, but are not limited to, those related to revenues, accounts receivable and related allowances, contingencies, useful lives and recovery of long-term assets, income taxes, the fair value of stock-based compensation and derivative financial instrument liabilities. These estimates, judgments, and assumptions are reviewed periodically and the effects of material revisions in estimates are reflected in the financial statements prospectively from the date of the change in estimate.

Inventory

Inventory consists of raw materials, work-in-process and finished goods, all of which are valued at standard cost, which approximates average cost.

Derivative Financial Instruments

We do not use derivative instruments to hedge exposures to cash flow, market or foreign currency risk. The terms of convertible preferred stock and convertible notes that we issue are reviewed to determine whether or not they contain embedded derivative instruments that are required by ASC 815: "Derivatives and Hedging" to be accounted for separately from the host contract, and recorded at fair value. In addition, freestanding warrants are also reviewed to determine if they achieve equity classification. Certain warrants that we have issued did not meet the conditions for equity classification and are classified as derivative instrument liabilities measured at fair value. The fair values of these derivative liabilities are revalued at each reporting date, with the change in fair value recognized in earnings.

Fair Value Measurements

The following is a reconciliation of the beginning and ending balances for liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) during the nine months ended September 30, 2016 and 2015:

	2016	2015
Balance at January 1	\$ 8,235,163	\$ 5,000,752
Warrants issued with private placement of Series B Preferred Stock	—	660,378
Warrants issued with preferred stock sold under preemptive rights	—	7,881
Warrants reclassified to equity	(51,418)	—
Gain recognized in earnings	(340,669)	143,845
Balance at September 30	\$ 7,843,076	\$ 5,812,856

**NOTE 3 – PRIVATE PLACEMENT AND PREEMPTIVE RIGHTS**

Private Placement

In April 2015, we commenced a private placement offering of up to \$18,000,000 in Series B Units consisting of up to 1,125,000 shares of Series B convertible preferred stock ("Series B Preferred Stock") and warrants to purchase common stock (the "Warrants") at an offering price of \$16.00 per Unit. The offering terminated on August 31, 2015 and as of such date, we had sold 266,987 shares of Series B Preferred Stock and Warrants to purchase 222,262 shares of common stock, for aggregate gross proceeds of \$4,270,192.

Each share of Series B Preferred Stock has a stated value of \$16.00 per share and is convertible, at the option of the holder into common shares, at a conversion price of \$16.00 per share, subject to adjustments for stock dividends, splits, combinations and similar events. The Warrants have an exercise price of \$16.00 per share and expire 7 years from issuance. During the period from closing of the offering and ending on the earlier of i) December 31, 2017 and ii) the date the Company consummates the sale of new securities resulting in gross proceeds of at least \$18,000,000, the holder has the right to exchange their Series B Units (Series B Preferred Stock and Warrants) into any new security sold to third parties at the same relative price per share and other terms at which such new security is sold to such third parties.

**XG SCIENCES, INC.**  
**NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**  
**SEPTEMBER 30, 2016**

The cash proceeds from the private placement were allocated first to the derivative liabilities resulting from warrants, at their fair values, with the residual being allocated to the Series B Preferred Stock.

Preemptive Rights

On January 15, 2014, as part of our financing agreements with Samsung Ventures (“Samsung”), Aspen Advanced Opportunity Fund LP (“AAOF”) and XGS II, LLC (“XGS II”), we agreed to allow all shareholders to purchase one share of Series A convertible preferred stock (“Series A Preferred Stock”) at a price of \$12.00 per share for every two (2) shares of Series A Preferred Stock or common stock owned by the shareholder. In addition, for every two preemptive shares purchased, the Company issued the shareholder a warrant to purchase one additional share of Series A Preferred Stock with the same terms as the warrants issued to AAOF and XGS II. The Company also agreed to issue warrants with the same terms to those shareholders who exercised preemptive rights in October 2013.

Under the January 15, 2014 preemptive rights offering, 101,000 shares of Series A Preferred Stock were sold to existing stockholders at a price of \$12.00 per share. In addition, warrants indexed to 56,054 shares of Series A Preferred Stock were issued in conjunction with these stock purchases, including 5,554 warrants related to the preemptive rights exercised in October 2013.

As part of our Series B Unit private placement in April 2015, shareholders and holders of our convertible notes were provided the right to purchase their pro rata share of any class of stock that the Company sells or issues. The sale of Series B Preferred Stock in the April 2015 offering triggered the preemptive rights. As of September 30, 2016, 3,100 shares of Series B Convertible Stock have been sold to existing shareholders at a price of \$16.00 per share. In addition, the Warrants indexed to 2,635 shares of common stock were issued as part of the Series B Units.

As of September 30, 2016, the total number of warrants issued due to the preemptive rights offerings was 58,689.

**NOTE 4 – BRIDGE FINANCINGS**

From December 31, 2015 through April 7, 2016, the Company entered into private placement bridge financings with 14 investors, seven of whom are board members or affiliates of board members, totaling \$1,124,750 (the “Bridge Financings”). The investors in the Bridge Financings received common stock warrant coverage of 30% for investments made prior to December 31, 2015 and 20% coverage thereafter.

During June 2016 the Company repaid i) outstanding principal of \$550,000 plus accrued interest of \$22,000 to the December 2015 Bridge Financing investors and ii) outstanding principal of \$200,000 plus accrued interest of \$5,032 to two of the March 2016 Bridge Financing investors. These investors, who are also members of the board of directors of the Company, used the proceeds from repayment of their notes, plus additional funds, to purchase 199,879 additional shares of the Company’s common stock for approximately \$1.6 million.

**XG SCIENCES, INC.**  
**NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**  
**SEPTEMBER 30, 2016**

The Bridge Financing Warrants issued in December 2015 inadvertently provided the holder with the right to exchange their warrants on a price per share basis into a new security on the same relative price per share terms as any new securities sold to third parties resulting in gross proceeds of at least \$18,000,000. As a result of these exchange rights, the December 2015 Bridge Financing warrants did not achieve equity classification at inception and were recorded as derivative liabilities, at fair value. During the second quarter of 2016, the warrant holders from the December 2015 Bridge Financing agreed to waive their exchange rights at which time the warrants were reclassified to equity. This resulted in the current fair value of the Bridge Financing Warrants of \$51,418, being reclassified from derivative liabilities to equity.

The following table reconciles the Bridge Financings balance recorded on the balance sheet at September 30, 2016:

	2016
Balance at January 1	\$ 550,000
Proceeds from Bridge Financings received January through April 7	574,750
Subtotal	1,124,750
Proceeds allocated to warrants – liability at inception	(52,676)
Proceeds allocated to warrants – equity at inception	(24,060)
Accrued interest January through September 30	108,617
Payoff of principal (\$750,000) and accrued interest	(777,031)
Balance at September 30, 2016	\$ 379,600

Number of Common Stock Warrants issued with Bridge Financings 32,120.

**NOTE 5 – DERIVATIVE LIABILITY WARRANTS**

As of September 30, 2016, all 1,197,617 derivative liability classified warrants issued to AAOF, XGS II, and holders of Series A and Series B Preferred Stock have vested.

Shares indexed to derivative liabilities as of September 30, 2016 and December 31, 2015 were as follows:

	Type of shares indexed	Exercise Price	September 30, 2016	December 31, 2015
Warrants issued with Secured Convertible Notes	Series A PS	\$ 6.40	833,333	833,333
Warrants issued with equipment financing leases	Series A PS	\$ 6.40	83,333	83,333
Warrants issued with Series A preemptive rights	Series A PS	\$ 6.40	56,054	56,054
Warrants issued with Series B preemptive rights	Common	\$ 16.00	2,635	2,635
Warrants issued with Series B Units	Common	\$ 16.00	222,262	222,262
Warrants issued with Bridge Financings	Common	\$ 8.00	—	20,625
Total shares indexed to derivative liabilities			1,197,617	1,218,242

The following table summarizes the fair value of the derivative liabilities as of September 30, 2016 and December 31, 2015:

	September 30, 2016	December 31, 2015
Warrants issued with Secured Convertible Notes	\$ 6,495,660	\$ 6,743,997
Warrants issued with equipment financing leases	649,568	674,397
Warrants issued with preemptive rights	439,984	457,265
Warrants issued with 2015 Series B Unit private placement	257,864	306,828
Warrants issued with Bridge Financings	—	52,676
Total derivative liabilities	\$ 7,843,076	\$ 8,235,163

**XG SCIENCES, INC.**  
**NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**  
**SEPTEMBER 30, 2016**

The Company estimated the fair value of their warrant derivative liabilities as of September 30, 2016 and December 31, 2015, using a lattice model and the following assumptions:

	September 30, 2016	December 31, 2015
Fair value of underlying stock	\$7.63 - \$12.64	\$7.63 - \$12.64
Equivalent risk free interest rate	0.81% - 0.92%	1.06% - 1.39%
Expected term (in years)	5.58 - 7.30	5.01 - 8.05
Equivalent stock price volatility	38.10% - 38.17%	38.00% - 38.61%
Expected dividend yield	—	—

The fair value of the warrants is estimated using a binomial lattice model. Equivalent amounts reflect the net results of multiple modeling simulations that the lattice model applies to underlying assumptions. Because the Company's common stock is not publicly traded on a national exchange or to our knowledge, an over-the-counter market, the expected volatility of the Company's stock was developed using historical volatility for a peer group for a period equal to the expected term of the warrants. The fair value of the warrants will be significantly influenced by the fair value of our common stock, stock price volatility and the risk free interest components of the lattice technique. Changes in the fair value of Derivative Liabilities, carried at fair value, are reported as "Change in fair value of derivative liability - warrants" in the Statement of Operations, and were as follows:

	Three months ended September 30,	
	2016	2015
Warrants issued with Secured Convertible Notes	\$ 69,666	\$ (583,332)
Warrants issued with equipment financing leases	6,967	(58,334)
Warrants issued with preemptive rights	5,000	(36,122)
Warrants issued with 2015 private placement	26,423	262,930
Total Derivative Gain (Loss)	<u>\$ 108,056</u>	<u>\$ (414,858)</u>

	Nine months ended September 30,	
	2016	2015
Warrants issued with Secured Convertible Notes	\$ 248,337	\$ (379,999)
Warrants issued with equipment financing leases	24,829	(38,001)
Warrants issued with preemptive rights	17,281	(21,993)
Warrants issued with 2015 private placement	48,963	296,148
Warrants issued with Bridge Financings	1,259	—
Total Derivative Gain (Loss)	<u>\$ 340,669</u>	<u>\$ (143,845)</u>

**NOTE 6 – OTHER COMMON STOCK WARRANTS**

In addition to the warrants described in Note 5, we had 42,694 warrants to purchase common stock that were issued in 2012 and prior years which are accounted for as equity instruments. As of September 30, 2016, the remaining warrants, all of which are exercisable, have exercise prices ranging from \$8.00 to \$12.00 and expire at various dates through 2027, as follows:

Date Issued	Expiration Date	Exercise Price	Number of Warrants
7/1/2009	7/1/2019	\$ 8.00	6,000
10/8/2012	10/8/2027	\$ 12.00	5,000
			<u>11,000</u>

**NOTE 7 - INCENTIVE STOCK OPTION PLAN**

We have established an incentive stock option plan (the "Plan") under which the Company may grant key employees and directors options to purchase common stock of the Company at not less than fair market value as of the grant date. Options for up to 600,000 shares may be awarded under the Plan. Each option is exercisable into one share of common stock of the Company. The Plan expires in December 2017. The fair value of the options granted was estimated on the dates of grant using the Black Scholes option-pricing model. As of September 30, 2016, 419,750 option shares have been granted and are outstanding, of which 253,819 are exercisable at an exercise price of \$12.00. Vesting of the options ranges from immediately to 20% per year, with most options vesting on a straight-line basis over a three or four year period from the date issued. Rights to exercise the options vest immediately upon a change in control of the Company or termination of the employee's continuous service due to death or disability. The options expire at various dates through October 2023.

**XG SCIENCES, INC.**  
**NOTES TO UNAUDITED CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**  
**SEPTEMBER 30, 2016**

**NOTE 8 – CAPITAL LEASES**

As of September 30, 2016 and December 31, 2015, we have capital lease obligations as follows:

	<u>September 30, 2016</u>	<u>December 31, 2015</u>
Capital lease obligations	\$ 522,448	\$ 682,564
Unamortized warrant discount	(84,281)	(149,594)
Net obligations	438,167	532,970
Short-term portion of obligations	(247,229)	(178,487)
Long-term portion of obligations	<u>\$ 190,938</u>	<u>\$ 354,483</u>

The 83,333 common stock warrants issued as consideration for the equipment financing leases are recorded as derivative liabilities at fair value. The initial value of these warrants was recorded as a reduction of the capital lease obligation and is being amortized as part of the effective interest cost on the capital lease obligations.

**NOTE 9 - RELATED PARTY TRANSACTIONS**

We have a licensing agreement for exclusive use of patents and pending patents with Michigan State University (“MSU”), a shareholder of the Company via the MSU Foundation. During the three and nine months ended September 30, 2016 and 2015 we incurred expenses of \$12,500 and \$25,000, respectively. We have also entered into product licensing agreements with certain other shareholders. No royalty revenue or expenses have been recognized related to these agreements during the nine months ended September 30, 2016 and 2015.

Beginning in 2014, POSCO Corporation (“POSCO”), one of our shareholders, has a contractual obligation to pay us a minimum of \$100,000 per year to license certain technologies we license from MSU. This obligation is due annually on February 28 of the following year. We record this license revenue at a rate of \$25,000 per quarter. POSCO is disputing that they are obligated to pay the royalties. A petition for arbitration has been filed for this matter by the Company on March 9, 2016. On July 7 we received a letter from the International Court of Arbitration and they have assigned an arbitrator to the case. No assessment or decision has made by the arbitrator as of the filing date of these financial statements. An allowance in the amount of \$137,500 and \$100,000 has been recorded at September 30, 2016 and December 31, 2015, respectively, to reflect an estimate of the portion of the 2016, 2015 and 2014 royalties that we believe may not be collectible. The accrued royalty and allowance are netted together and reflected in other current assets on the condensed consolidated balance sheet.

The financing arrangements as previously disclosed were provided by AAOF and XGS II, two private funds that were formed for the sole purpose of investing in the Company by two investors affiliated with ASC-XGS, LLC, a shareholder of the Company. Pursuant to the Company’s Shareholders’ Agreement dated March 18, 2013 (as amended on February 26, 2016), a principal of each private fund serves as a director of the Company.

The Bridge Financings discussed in Note 4 above include loans from entities controlled by existing shareholders. Three of these shareholders are also directors of the Company. In conjunction with these short-term borrowings, the Company issued Warrants (see also discussed in Note 5).

**NOTE 10 – SUBSEQUENT EVENTS**

During the period from October 1 through November 3, 2016, we received common stock proceeds of \$99,000 for the sale of 12,375 shares.

## **Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations**

### **Forward-Looking Statements**

*In this Quarterly Report on Form 10-Q, unless otherwise indicated, the words “we”, “us”, “our”, “XG”, “XGS”, “XG Sciences” or the “Company” refer to XG Sciences, Inc. and its wholly owned subsidiary, XG Sciences IP, LLC, a Michigan limited liability company.*

### **Introduction**

The following discussion and analysis should be read in conjunction with the unaudited condensed consolidated financial statements, and the notes thereto included herein. The information contained below includes statements of the Company’s or management’s beliefs, expectations, hopes, goals and plans that, if not historical, are forward-looking statements subject to certain risks and uncertainties that could cause actual results to differ materially from those anticipated in the forward-looking statements. For a discussion on forward-looking statements, see the information set forth in the introductory note to this quarterly report on Form 10-Q under the caption “Forward-Looking Statements”, which information is incorporated herein by reference.

### **Overview of our Business**

XG Sciences was formed in May 2006 for the purpose of commercializing certain technology to produce graphene nanoplatelets. First isolated and characterized in 2004, graphene is a single layer of carbon atoms configured in an atomic-scale honeycomb lattice. Among many noted properties, monolayer graphene is harder than diamonds, lighter than steel but significantly stronger, and conducts electricity better than copper. Graphene nanoplatelets are particles consisting of multiple layers of graphene. Graphene nanoplatelets have unique capabilities for energy storage, thermal conductivity, electrical conductivity, barrier properties, lubricity and the ability to impart strength when incorporated into plastics or other matrices.

We believe the unique properties of graphene and graphene nanoplatelets will enable numerous new product applications and the market for such products will quickly grow to be a significant market opportunity. Our business model is to design, manufacture and sell advanced materials we call xGnP<sup>®</sup> graphene nanoplatelets and value-added products based on these nanoplatelets. We believe our proprietary processes have enabled us to be a low-cost producer of high quality, graphene nanoplatelets and that we are well positioned to address a wide range of end-use applications.

### **Our Customers**

We sell products to customers around the world and have sold materials to over 1,000 customers in 47 countries since 2008. Some of these customers are research organizations and some are commercial organizations. Our customers have included well-known automotive and OEM suppliers around the world; world-scale lithium ion battery manufacturers in the US, South Korea and China; and diverse specialty material companies as well as leading research centers such as Lawrence Livermore National Laboratory and Oakridge National Laboratory. We have also licensed some of our base manufacturing technology to POSCO, the fourth largest steel manufacturer in the world by volume of output, and Cabot Corporation (“Cabot”), a leading global specialty chemicals and performance materials company. These licensees further extend our technology through their customer networks.

### **Our Focus Areas**

We target our xGnP<sup>®</sup> nanoplatelets for use in a wide range of large and growing end-use markets. We believe we are a “platform play” in advanced materials, because our proprietary manufacturing processes allow us to produce varying grades of graphene nanoplatelets that can be mapped to a variety of applications in many market segments. However, we are prioritizing our efforts in specific areas that we believe represent opportunities for either relatively near-term revenue or especially large and attractive markets. At this time, we are focused on three high priority areas:

- Energy Storage:** Within energy storage we focus on lead acid batteries and lithium ion batteries. Within lithium ion batteries, we develop silicone-graphene composite materials for lithium-ion battery anodes. This is a material that has shown superior early results in laboratory and early prototype battery testing. Although there is still scientific development, testing and prototyping that remains to be done, we perceive a significant market opportunity for this new anode material. We also develop a cathode conductive additive to improve rate capability, especially for higher power applications. XG Sciences' graphene nanoplatelets demonstrate higher discharge capacity at high rates, which translates into more battery power needed during heavy power requirements: start-up, acceleration, and/or elevation ascent. In lead acid batteries we develop anode conductive additives demonstrating improved performance for lifetime and charge acceptance.
- Thermal Management.** Thermal management products may take on many forms. Their underlying intent is to improve the movement of heat where excessive heat may cause a reduction in product lifetime and/or performance. XG Leaf<sup>®</sup> materials for thermal applications in electronics is one such product. XG Leaf<sup>®</sup> is a paper-like product comprised of xGnP<sup>®</sup> graphene nanoplatelets. Early testing with customers has produced promising results in applications requiring high thermal conductivity in thin (20–50 microns) and thick (50–120 microns) sheets, depending upon the end-use application. Typical applications include the use of these materials in smart phones, tablets, and portable computers. While there are many other applications for XG Leaf<sup>®</sup>, including electrostatic dissipation (“ESD”), electromagnetic interference (“EMI”) shielding and resistive heating, our initial focus is on thermal management. TIM, or thermal interface materials, in the form of greases or pastes is another product in this category. XG Sciences' TIM's have been shown to improve the thermal dissipation of heat generated by light emitting diodes when incorporated in various lighting devices. Other products may include inks or coating formulations specifically designed for use in such applications as portable electronics, heaters and other industrial equipment benefiting from the use of coatings to improvement heat dissipation.
- Composites.** Incorporation of our xGnP<sup>®</sup> graphene nanoplatelets into various polymers have been shown to impart improvements in strength, electrical conductivity, thermal conductivity and/or barrier performance. The company pursues several end-use applications that may benefit from one or more properties and believes that composites represent a potentially large opportunity for commercial sales.

**XGS Market/Application Focus Areas & 2018 Market Size**

Key Markets	Energy Storage			Thermal Management		Composites
	Lithium Ion Battery Next-Generation Anode	Lithium Ion Battery Cathode Conductive Additive	Pb-Carbon Battery Anode Slurry Additive	Portable Electronics Heat Management Powders/Film	Semi Packaging Heat Management Paste/Adhesive	Specialty Plastics Multi-Function Performance Additive
Performance Driver	Higher Energy Storage Capacity	Increased Rate Performance	Longer Cycle Life, Faster Charge Acceptance	Lower and More Stable Operating Temperatures	Improved Heat Transfer	Improved Thermal, Electrical and Physical Properties
Business Model	Silicon Graphene Composite ("XG SIG <sup>®</sup> ") Sales	xGnP <sup>®</sup> Powder Sales	xGnP <sup>®</sup> Powder Sales	xGnP <sup>®</sup> Powder & Graphene Paper Sales ("XG Leaf <sup>®</sup> ")	Formulated Products Sales	xGnP <sup>®</sup> Powder Sales
Timing	Near Term to Medium Term	Near Term	Near Term	Near Term to Medium Term	Near Term to Medium Term	Medium Term to Longer Term
Potential Market Size	\$26.5 Bn (Li-ion Battery Cell - 2020) <sup>1</sup>	\$5.2 Bn (LIB Cathode Active Materials - 2020) <sup>1</sup>	\$9-\$12 Bn (Start-Stop Batteries - 2020) <sup>1</sup>	\$2,976 Bn (Consumer Electronics - 2020) <sup>5</sup>	\$28 Bn (Semiconductor Packaging - 2020) <sup>7</sup>	\$654 Bn (Worldwide Plastics Market - 2020) <sup>8</sup>
Anticipated Addressable Market Size	\$1.3 Bn (LIB Anode Materials - 2018) <sup>1</sup>	\$200 Mn (LIB Cathode Additives - 2018) <sup>2</sup>	\$140 Mn (Anode Slurry Additives - 2018) <sup>1</sup>	\$900 Mn (Graphitic Heat Spreaders - 2018) <sup>6</sup>	\$780 Mn (Polymeric Thermal Interface - 2018) <sup>8</sup>	\$9.1 Bn (Composite Additives - 2018) <sup>10</sup>

<sup>1</sup> Avicenne Energy, "The Worldwide Rechargeable Battery Market 2014 - 2025", 24th Edition - V3, July 2015.

<sup>2</sup> Avicenne Energy, "The Worldwide Rechargeable Battery Market 2014 - 2025", 24th Edition - V3, July 2015 & Internal Estimates.

<sup>3</sup> ArcActive via Nanalyze, April 3, 2015.

<sup>4</sup> ArcActive via Nanalyze, April 3, 2015 & Internal Estimates.

<sup>5</sup> Future Markets Insights, "Consumer Electronics Market: Global Industry Analysis and opportunity Assessment 2015 - 2020", May 8, 2015.

<sup>6</sup> Prismark, "Market Assessment: Thin Carbon-Based Heat Spreaders", August 2014.

<sup>7</sup> Reporterlink.com, "Semiconductor & IC Packaging Materials Market...", May 2014.

<sup>8</sup> Prismark, 2015.

<sup>9</sup> Grand View Research, "Global Plastics Market Analysis...", August 2014.

<sup>10</sup> From (9) and internal estimates: 2018 = 305 million tons of plastic, if 10% of the market adopted xGnP to enhance their properties, and at only 1% by weight as an additive, then in 2018 305,000 tons or 305,000,000 kilos of xGnP would be required. At \$30 a Kg - the value is \$9.1 Bn per year.

## **Our Products**

Our proprietary manufacturing processes allow us to produce nanoplatelets with varying performance characteristics that can be tuned to specific end-use applications based on customer requirements. We currently offer four commercial "grades" of bulk materials, each of which is available in various particle sizes, which allows for surface areas ranging from 50 to 800 square meters per gram of material depending on the product. Other grades may be made available, depending on the needs for specific applications. In addition, we sell our material in the form of pre-dispersed mixtures with water, alcohol, or other organic solvents and resins. In addition to selling bulk graphene nanoplatelets, we also offer the following value added products that contain our graphene nanoplatelets in various forms:

**Energy Storage Materials.** These consist of specialty advanced materials that have been formulated for specific applications in the energy storage segment. Chief among these is our proprietary, specially formulated silicon-graphene composite material (also referred to as "SiG" or "XG SiG<sup>®</sup>") for use in lithium-ion battery anodes. XG SiG<sup>®</sup> targets the never-ending need for higher battery capacity and longer life. In several customer trials, our SiG material has demonstrated the potential to increase battery energy storage capacity by 3-5x what is currently available with conventional lithium ion batteries today. Additionally, we offer various bulk materials for use as conductive additives for cathodes and anodes in li-ion batteries, as an additive to anode slurries for lead-carbon batteries, and we are investigating the use of our materials as part of other battery components.

**Thermal Management Materials.** These consist mainly of two types of products, our XG Leaf<sup>®</sup> sheet products and various thermal interface materials ("TIM") in the form of custom greases or pastes. XG Leaf<sup>®</sup> is a family of sheet products ideally suited for use in thermal management in portable electronics, which may include cell phones, tablets and notebook PC's. As these devices continue to adopt faster electronics, higher data management capabilities, brighter displays with ever increasing definition, they generate more and more heat. Managing that heat is a key requirement for the portable electronics market and our XG Leaf<sup>®</sup> product line is well suited to address the need. These sheets are made using special formulations of xGnP<sup>®</sup> graphene nanoplatelets as precursors, along with other materials for specific applications. There are several different types of XG Leaf<sup>®</sup> available in various thicknesses, depending on the end-use requirements for thermal conductivity, electrical conductivity, or resistive heating. Our custom TIM greases and pastes are also designed to be used in various high temperature environments. Additionally, we offer various bulk materials for use as active components in liquids, coatings and plastic composites to impart improved thermal management performance to such matrices.

**Inks and Coatings.** These consist of specially-formulated dispersions of xGnP<sup>®</sup> together with solvents, binders, and other additives to make electrically or thermally conductive products designed for printing or coating and which are showing promise in diverse customer applications such as advanced packaging, electrostatic dissipation and thermal management. We also offer a set of standardized ink formulations suitable for printing. These inks offer the capability to print electrical circuits or antennas, or might be suitable for other electrical or thermal applications. All of these formulations can be customized for specific customer requirements.

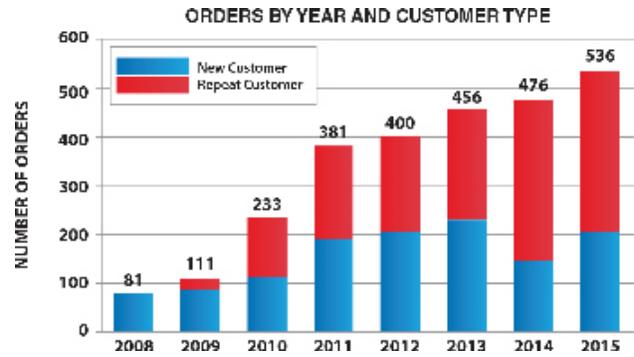
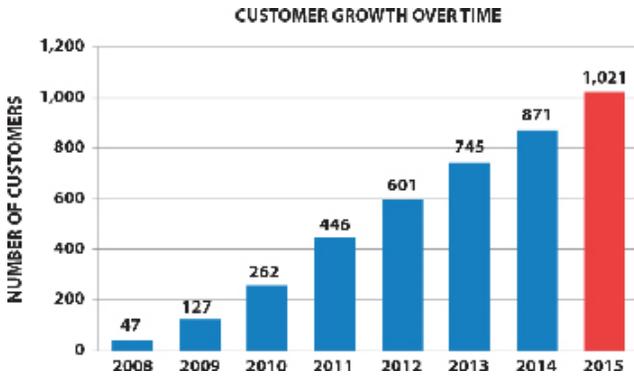
## **Commercialization Process**

Because graphene is a new material, most of our customers are still developing applications that use our products, and thus historically most customers have purchased products in quantities consistent with development purposes. The process of “designing-in” new materials is relatively complex and involves the use of relatively small amounts of the new material in laboratory and engineering development for an extended period of time. Following successful development, we expect customers that incorporate our materials into their products will then order much larger quantities of material to support commercial production. Thus, while many of our customers are currently purchasing our materials in kilogram (one or two pound) quantities, we expect many will require tons or even hundreds of tons of material when they commercialize products that incorporate our materials. Although, our customers are under no obligation to report to us on the usage of our materials, some have indicated that they have introduced or will soon introduce commercial products that use our materials.

Commercialization is a process, the exact timing of which is often difficult to predict. It starts with our own internal R&D to validate performance for an identified market or customer-specific need. Our customers then validate the performance of our materials and determine that our products can be incorporated into their manufacturing processes. This is initially done at the pilot scale. Our customers then have to introduce products that incorporate our materials to their own customers to validate performance. After their customers have validated performance, our customers will then move to commercial scale production. Every customer goes through the same process, but will do so at varying speeds, depending on the customer, the product and the end-use market. Thus, we are not always able to predict when our customers will begin ordering commercial volumes of our materials or their expected volumes over time. However, as customers move through the process, we generally receive a lot of feedback and gain greater insights regarding their commercialization plans. The following are recent examples of where our products are providing value to our customers at levels that we believe will warrant their use on a commercial basis:

- Lead acid battery manufacturer demonstrating approximately 90% improvement in measured cycle life, appreciable improvement in capacity and charge acceptance and without any loss in water retention performance, and
- Light emitting diode module and product company demonstrated approximately 50% improvement in thermal management capability when compared to existing commercial thermal management products, translating into a 15% improvement in thermal management at the device level, and
- Automotive parts supplier demonstrating improvements in thermal stability for polymer composites incorporating our materials, allowing for approximately 20% higher operating temperatures and a 50% improvement in strength at the elevated temperature, and
- Industrial refrigeration equipment supplier demonstrating improved heat transfer efficiency and energy savings when our xGnP® graphene nanoplatelets are incorporated as a component in the thermal-transfer fluids, and
- Construction company demonstrating less than one weight percent of our product in construction material composites improves flexural strength by more than 30%, and
- Large oil and lubricant supplier showing gear and friction improvements when incorporated into industrial and automotive greases, and
- Engineering design firm for automotive manufacturers found approximately 20% reduction in operating temperature and in thermal uniformity when XG Leaf® replaces standard cooling fins in lithium ion battery packs, and
- Auto manufacturer showing increased tensile and flexural strength and reduced weight in automotive composites.

The below graphs show total orders and customers based on actual purchases of our materials and do not include free samples or materials used in joint development programs. Since the majority of our customers are still in the development stage, our product sales to date have consisted mainly of orders for relatively small quantities of materials being used in a variety of research or development activities and in early phase limited commercial applications. The average order size for the first nine months of 2016 was \$1,032, as compared to \$600 for the full year 2015, which indicates these orders were for materials that were not yet incorporated into large-volume commercial products.

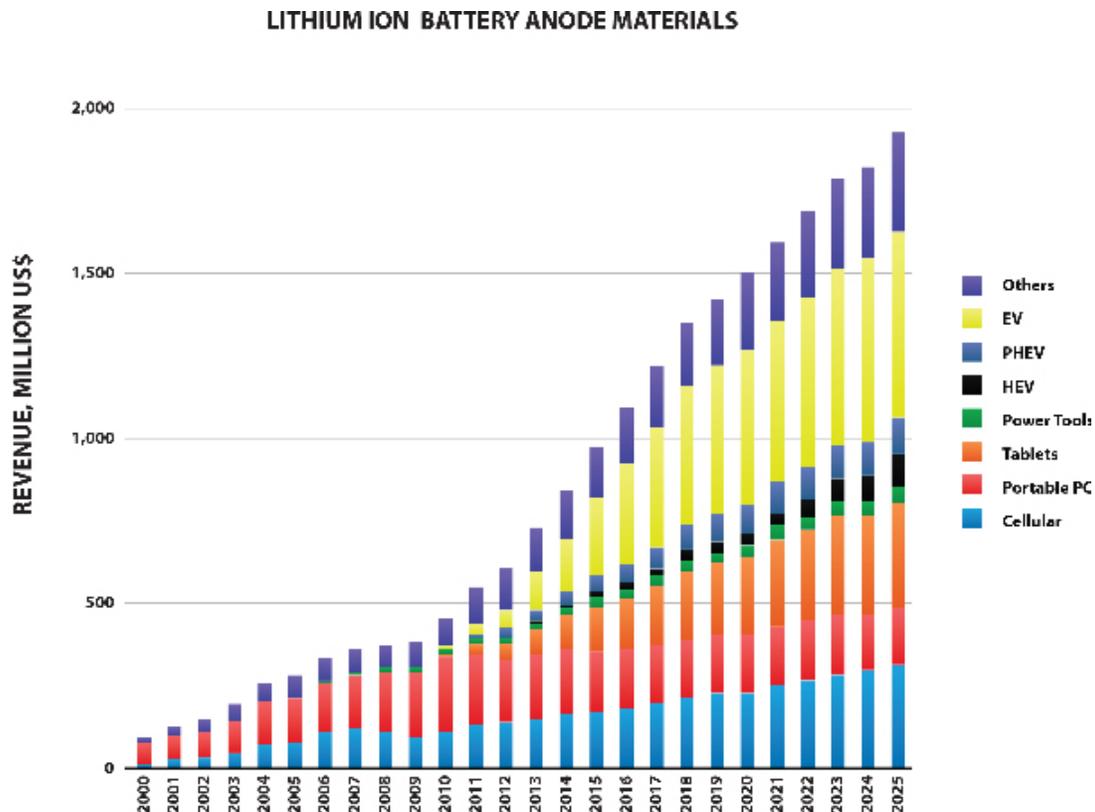


**Expected 2016 and 2017 Revenue**

We are tracking the commercial and development status of more than 100 customer/product engagements. We currently have seven customers who are using our materials in their products and actively selling them to their customers or actively promoting them for future sales, up from the five reported last quarter. In addition, we have another five customers who have indicated that they expect to begin shipping product incorporating our materials in the next 3-6 months, and have another eight customers who have indicated an intent to commercialize in the next 6-9 months. We also have tens of customers with whom we are working that have not yet indicated an exact date for commercialization, but for whom we believe have the potential to contribute to revenue in 2017. As a result, we expect to begin shipping significantly greater quantities of our products as 2016 progresses and into 2017. For example, the average order size for the product revenue reflected in our statement of operations increased 225% for the three months ended September 30, 2016 as compared to the same period in 2015. For the nine months ended September 30, 2016, the increase was 172% as compared to the same period in 2015. These increases are resulting from larger orders primarily from customers entering into initial commercial production with our materials. Based on the status of current discussions with such customers, we believe that we will continue to ramp up revenue through the rest of 2016 and that we believe we will be able to recognize approximately \$1 million of revenue in 2016 and approximately \$10-15 million of revenue in 2017.

## Addressable Markets

The markets that we serve are large and rapidly growing. For example, as shown in the figure below (Avicenne Energy, “The Rechargeable Battery Market, 2014–2025”, July 2015), the market for materials used in lithium ion battery anodes is currently approximately \$1 billion, but is expected to approximately double over the next ten years. We believe our ability to address next generation anode materials represents a significant opportunity for us.



According to Prismark Partners, LLC, a leading electronics industry consulting firm specializing in advanced materials, the 2014 market for finished graphitic heat spreaders as sold to the OEM and EMS companies with adhesive, PET, and/or copper backing for selected portable applications was \$600 million, and is expected to reach \$900 million in 2018. The market is currently in a significant expansion period driven by the demand for portable devices. In a press release dated March 3, 2015, Gartner, Inc., a leading research organization, estimated the 2014 global cell phone market at 1.88 billion units. Every cell phone has some form of thermal management system, and we believe many of the new smart phones being developed can benefit from the thermal management properties of our XG Leaf® product line. In August 2015, International Data Corporation (IDC) in their Worldwide Quarterly Tablet Tracker, estimated the global shipment of tablets in 2015 at 212 million units. Thus, we believe our XG Leaf® product line is well positioned to address a very large and rapidly growing market.

## Intellectual Property

We believe that our intellectual property (“IP”) is an important asset. Our strategy is to keep our production processes as legally defined and protected trade secrets rather than to patent them. Some of our proprietary manufacturing processes were developed at Michigan State University (MSU) and licensed to us in 2006. We licensed three U.S. patents and patent applications from MSU. However, over time, our scientists and engineers have made many further discoveries and inventions that are embodied in the form of five additional U.S. patents, two China patents, two patent application that are allowed but not yet granted (one in each China and Taiwan) and 17 additional U.S. patent applications, and numerous trade secrets. For each patent application filed in the U.S., we make a determination on the nature and value of the patent. For many of the applications filed in the U.S., additional filings are made in other countries such as the European Union, Japan, South Korea, China, Taiwan or other applicable countries. These filings and analyses are made on a case-by-case basis. Typically, patents that are defensive in nature are not filed abroad, while those that are protective of active XGS products or applications are filed in relevant countries abroad. Our general IP strategy is to keep as trade secrets those manufacturing processes that are difficult to enforce should they be disclosed and to seek patent coverage for other manufacturing processes, materials derived from those processes, unique combinations of materials and end uses of materials containing graphene nanoplatelets. We believe that the combination of our rights under the MSU license, our patents and patent applications, and our trade secrets create a strong intellectual property position.

## Operating Segment

We have one reportable operating segment that manufactures xGnP<sup>®</sup> graphene nanoplatelets and value-added products produced therefrom, conducts research on graphene nanoplatelets and related products, and licenses our technology as appropriate. As of September 30, 2016 we shipped products on a worldwide basis, but all of our assets were located within the United States.

### Results of Operations for the Three and Nine Months Ended September 30, 2016 Compared with the Three and Nine Months Ended September 30, 2015

The following table summarizes the results of our operations for the three and nine months ended September 30, 2016 and 2015.

Summary Income Statement	For the Three Months Ended September 30,			For the Nine Months Ended September 30,		
	2016	2015	Change	2016	2015	Change
<b>Revenues</b>						
Product Sales	\$ 88,856	\$ 38,295	\$ 50,561	\$ 230,635	\$ 156,608	74,027
Grants	50,111	80,967	(30,856)	208,475	299,879	(91,404)
Licensing Revenue	25,000	25,000	-	75,000	75,000	-
<b>Total Revenues</b>	<b>163,967</b>	<b>144,262</b>	<b>19,705</b>	<b>514,110</b>	<b>531,487</b>	<b>(17,377)</b>
<b>Cost of Goods Sold</b>	<b>367,395</b>	<b>472,720</b>	<b>(105,325)</b>	<b>1,172,397</b>	<b>1,341,948</b>	<b>(169,551)</b>
<b>Gross Loss</b>	<b>(203,428)</b>	<b>(328,458)</b>	<b>125,030</b>	<b>(658,287)</b>	<b>(810,461)</b>	<b>152,174</b>
<b>Research &amp; Development Expense</b>	<b>231,312</b>	<b>359,340</b>	<b>(128,028)</b>	<b>866,668</b>	<b>1,135,326</b>	<b>(268,658)</b>
<b>Sales, General &amp; Administrative Expense</b>	<b>896,650</b>	<b>997,404</b>	<b>(100,754)</b>	<b>2,618,252</b>	<b>3,133,375</b>	<b>(515,123)</b>
<b>Total Operating Expense</b>	<b>1,127,962</b>	<b>1,356,744</b>	<b>(228,782)</b>	<b>3,484,920</b>	<b>4,268,701</b>	<b>(783,781)</b>
<b>Operating Loss</b>	<b>(1,331,390)</b>	<b>(1,685,202)</b>	<b>353,812</b>	<b>(4,143,207)</b>	<b>(5,079,162)</b>	<b>935,955</b>
<b>Other Income (Expense)</b>	<b>57,631</b>	<b>(969,842)</b>	<b>1,027,473</b>	<b>153,472</b>	<b>(1,703,889)</b>	<b>1,857,361</b>
<b>Net Loss</b>	<b>\$ (1,273,759)</b>	<b>\$ (2,655,044)</b>	<b>\$ 1,381,285</b>	<b>\$ (3,989,735)</b>	<b>\$ (6,783,051)</b>	<b>\$ 2,793,316</b>

Product sales consist of two broad categories: (1) material sold to customers for research or development purposes and (2) production orders for customers. Typically, the order sizes for the first category are relatively small, however we expect orders in the second category to be much larger in the future. In the nine months ended September 30, 2016, product sales increased by \$74,027, or 32%. The main reason for the increase was customers moving through development programs towards commercialization, requiring larger quantities of our materials for advanced testing and pilot production activities.

We ship our products from our Lansing manufacturing facilities to customers around the world. During the nine months ended September 30, 2016, we shipped materials to customers in 24 different countries, as compared to 26 countries during the same period in 2015. Shipments to South Korea accounted for approximately 19.9% and 11.5% and shipments to the United Kingdom accounted for approximately 10.3% and 4.2% of total product revenues during the nine months ended September 30, 2016 and 2015, respectively. No other countries accounted for more than 10% of product revenue in each of these respective periods.

The table below shows a comparison of orders received, both domestic and international. The table also includes the average order size for product sales reflected in our Statement of Operations. These numbers indicate that our customer base remains active with development or research projects that use our materials and indicate the breadth of our geographic coverage. The average order size for the product revenue reflected in our statement of operations increased 225% for the three months ended September 30, 2016 as compared to the same period in 2015. For the nine months ended September 30, 2016, the increase was 172% as compared to the same period in 2015. These increases are resulting from larger orders primarily from customers entering into initial commercial production with our materials. Although the average size of these orders is still relatively small, we are encouraged that the trend is increasing. The current average order size indicates that most of our orders are for R&D and development activity. We expect that our average order size will continue to increase as more customers begin to commercialize products that incorporate our materials within them and existing customers ramp up production volume.

Order Summary	For the Three Months Ended September 30,			For the Nine Months Ended September 30,		
	2016	2015	Change	2016	2015	Change
<b>Number of orders - domestic</b>	69	72	-3	195	212	-17
<b>Number of orders - international</b>	55	43	12	193	152	41
<b>Number of orders - total</b>	124	115	9	388	364	24
<b>Average order size for product sales recorded in our Statement of Operations</b>	\$ 1,307	\$ 580	\$ 727	\$ 1,032	\$ 601	\$ 431
			225%			172%

Grant revenues for the nine months ended September 30, 2016 and 2015 were \$208,475 and \$299,879, respectively. The current year consists of: \$158,365 of revenue from the Phase II SBIR grant from the US Department of Energy, \$25,110 for a new \$150,000 nine month DOE Phase I SBIR grant to develop and demonstrate a composite anode material that delivers improved capacity retention during full Lithium-ion battery charge to further the nation's energy strategy to reduce reliance on fossil fuels and improve the environment, and \$25,000 from the Michigan Emerging Technologies Fund to assist with commercialization of the technology investigated under the DOE Phase I SBIR grant. Grant revenues for the nine months ended September 30, 2015 consisted of the II SBIR grant from the DOE. This program, entitled "Low-cost, High-Energy Si/Graphene Anodes for Li-Ion Batteries" was an award for a total of \$1M to fund the research project over a planned two-year period commencing in January 2014 and originally expiring December 2015; a no cost contract extension had been approved with a new expiration date of June 22, 2016. The grant has been billed in full and is now considered completed. DOE grant revenues are recorded as time and expenses are incurred for allowable charges specified in the grant contracts. Time and charges for the DOE activity was higher in 2015 than 2016 and thus the grant revenues from this source is lower in the current year by \$116,404.

### Cost of Goods Sold

We use a standard cost system to estimate the direct costs of products sold. Direct costs include estimates of raw material costs, packaging, freight charges net of those billed to customers, and an allocation for direct labor and manufacturing overhead. Because of the nature of our production processes, there is a substantial fixed manufacturing expense requirement that represents the ongoing cost of maintaining production facilities that are not directly related to products sold, so we use a "full capacity" allocation of overhead based on an estimate of what product costs would be if the manufacturing facilities were operating on a full-time basis and producing products at the designed capacity. This estimate involves estimating both the level of expenses as well as production amounts as if the manufacturing facility were operating on a continuous, three-shift, production basis.

The following table shows the relationship of direct costs to product sales for the three and nine months ended September 30, 2016 and 2015:

Gross Profit Summary	For the Three Months Ended September 30,			For the Nine Months Ended September 30,		
	2016	2015	Change	2016	2015	Change
Product Sales	\$ 88,856	\$ 38,295	\$ 50,561	\$ 230,635	\$ 156,608	\$ 74,027
Direct Costs	44,344	24,848	19,496	101,397	77,516	23,881
Direct Cost Margin	\$ 44,512	\$ 13,447	\$ 31,065	\$ 129,238	\$ 79,092	\$ 50,146
% of Sales	50.1%	35.1%		56%	50.5%	
Unallocated Manufacturing Expense	323,051	447,872	(124,821)	1,071,000	1,264,432	(193,432)
Gross Loss on Product Sales	\$ (278,539)	\$ (434,425)	\$ 155,886	\$ (941,762)	\$ (1,185,340)	\$ 243,578

We believe that the fluctuations in direct cost from period to period are not indicative of overall performance or of future margins because of the relatively small size of our sales in comparison to our future expectations. Direct costs vary depending on the size of an order, the specific products being ordered and other factors like shipping destination.

Costs associated with grant revenues tend to be a mixture of facilities use, management time, labor from scientists, technicians and manufacturing personnel, and some supplies. Because of the difficulty of developing and maintaining an administrative system to gather direct costs for grants, together with the relatively small size of grant revenues, we do not track direct costs for grant revenues as a separate cost category. Therefore, we do not calculate direct cost margins associated with grant revenues but, rather, we view these revenues as being supported by indirect corporate expenses.

Costs associated with licensing revenue tend to be a mixture of IP costs as well as management and administrative expenses that are indirect in nature. As such, we do not assign direct costs to licensing revenues. Where revenues from a license agreement can be assigned to specific product revenues, we classify these revenues as product sales and, using our standard cost system, assign direct costs to those sales.

The remaining “non-direct” costs of operating our manufacturing facilities are recorded as unallocated manufacturing expenses. These expenses include personnel costs, rent, utilities, indirect supplies, depreciation, and related indirect expenses. Unallocated manufacturing expenses are expensed as incurred. We allocate these costs as direct product costs on the basis of the proportion of these expenses that would be representative product costs if we were operating our factory at full capacity.

For the nine months ended September 30, 2016, unallocated manufacturing expenses decreased by \$193,432 or 18% from the same period in 2015. The largest part of this decrease was due to decreased payroll, tax and benefit costs as compared with the prior year.

#### **Research and Development Expenses**

Research and development expenses totaled \$866,668 for the nine months ended September 30, 2016. This is a decrease of \$268,658 or 31% from the previous year. The largest part of this decrease was due to reduced payroll, tax and benefit costs as compared with the prior year.

#### **Selling, General and Administrative Expenses**

During the first nine months of 2016 we incurred selling, general and administrative expenses (SGA) of \$2.6 million. This is a decrease of \$515,123 or 19.7% from the same period in the prior year. This decrease was driven by a reduction in payroll and related expenses as well as a reduction in professional fees. Common stock issuance costs incurred in 2016 for legal, accounting, and other fees were \$538,640 and these expenses are recorded as an offset to common stock on the balance sheet. As we continue to grow and gain traction in the marketplace our SGA expenses will fluctuate but should stabilize and become more fixed in nature as we achieve economies of scale.

#### **Other Income (Expense)**

The following table shows a comparison of other income and expense by major component for the three and nine months ended September 30, 2016 and 2015:

Other Income (Expense)	For the Three Months Ended September 30,			For the Nine Months Ended September 30,		
	2016	2015	Change	2016	2015	Change
Incentive Refund & Interest Income	\$ 24,197	\$ 28,996	\$ (4,799)	\$ 72,423	\$ 80,624	\$ (8,201)
Interest Expense	(56,013)	(583,980)	527,967	(241,011)	(1,640,668)	1,399,657
Gain from change in fair value of derivative liability - warrants	108,056	(414,858)	522,914	340,669	(143,845)	484,514
Loss on disposal of equipment	(18,609)	-	(18,609)	(18,609)	-	(18,609)
<b>Total</b>	<b>\$ 57,631</b>	<b>\$ (969,842)</b>	<b>\$ 1,027,473</b>	<b>\$ 153,472</b>	<b>\$ (1,703,889)</b>	<b>\$ 1,857,361</b>

Interest expense for the three and nine months ended September 30, 2016 was substantially lower than the same periods in 2015 because the convertible notes outstanding in 2015 were converted to equity on December 31, 2015.

### Cash Flow Summary

The following condensed cash flow statement compares cash flow from operating, investing and financing activities for the nine months ended September 30, 2016 and 2015. Net cash used by operating activities decreased by 49% during the nine months ended September 30, 2016 as compared to the same period in 2015, because of reduced operating expenses, as discussed above.

	Nine Months Ended September 30		Change 2015 – 2016	
	2016	2015	\$	%
Cash, beginning of period	\$ 1,060,224	\$ 2,088,866	\$ (1,028,642)	(49.2)
Net Cash provided (used) by:				
Operating activities	(2,667,307)	(4,591,143)	(1,923,836)	(41.9)
Investing Activities	(173,451)	(217,646)	(44,195)	(20.3)
Financing Activities	2,418,038	4,305,028	(1,886,990)	(43.8)
Net increase (decrease) in cash	(422,720)	(503,761)	(81,041)	(16.1)
Cash, end of period	\$ 637,504	\$ 1,585,105	\$ (947,601)	(59.8)

Investment activities for the nine months ended September 30, 2016 included net capital expenditures for the purchase of property and equipment of \$84,187 and \$89,264 for IP as compared with \$157,983 for property and equipment and \$59,663 for IP during the corresponding period in 2015. These levels of capital expenditures are significantly lower than expected in the future as we begin to ramp up our production capacity to meet customer orders. Therefore, these expenditures should not be interpreted as indicative of future expenditures in this area.

Financing activity for the nine months ended September 30, 2016 included: \$3,102,032 of proceeds from the issuance of common stock, \$574,750 of proceeds from short-term notes, net advances from capital leases of \$29,896, repayment of short-term notes of \$750,000, and expenses of \$538,640 for IPO related costs. Financing activity for the nine months ended September 30, 2015 included \$4,319,792 of proceeds from the issuance of Series B preferred stock, \$14,000 from the issuance of common stock, and repayments of capital leases of \$28,764.

### Liquidity and Capital Expenditures

Ongoing cash flow from operations has been negative throughout our history. In addition, we have invested significant amounts in research and manufacturing capabilities. We anticipate that we will need to invest further to support ongoing operations for a minimum of another one to two years. We are currently in the process of conducting sales of common stock through our IPO in accordance with our registration statement on Form S-1 declared effective on April 13, 2016, and as amended on August 31, 2016. We expect that our cash on hand at September 30, 2016 of \$637,504 and proceeds from our IPO will sustain our operations for the next twelve months. Our plan is also to further develop customer relationships and increase our revenues derived from our products and IP licensing.

The Company's financial projections show that the Company may need to raise an additional \$15,000,000 or more before it is capable of achieving sustainable cash flow from operations. We intend that the primary means for raising such funds will be through our currently ongoing IPO. However, we cannot make any assurance that we will be able to raise these funds or that the terms and conditions of future financing will be workable or acceptable for the Company and its shareholders.

We also currently forecast a need for additional capital expenditures to execute on our business plan. The amount and timing of such expenditures will be dependent on the timing and magnitude of sales orders received from customers, but we currently anticipate a need to invest approximately \$1,000,000 to \$6,000,000 during the next twelve months. We plan to fund these investments through a mixture of capital lease financing, debt financing, and from the proceeds of our IPO. If we are unable to obtain such financing, we may be forced to curtail our investment activities and this may limit our ability to grow our revenues as fast as we would like.

Additionally, we anticipate that as our sales increase we will need to invest funds in working capital to support additional inventory and accounts receivable. Taken together, these multiple cash requirements will likely exceed our cash flow from operations for at least one to two more years.

Although there can be no guarantee of successful funding in the future, we intend to pursue the sale of additional equity securities, as well as additional debt or lease financing in the future, until such time as ongoing revenues allow us to generate a positive monthly cash flow from the business sufficient to cover our cash requirements.

In the event we are unable to fund our operations from existing cash on hand, operating cash flows, or additional debt or equity capital, we may be forced to reduce our expenses by curtailing operations, slow down our growth rate, or discontinue operations. Our condensed consolidated financial statements do not include any adjustments relating to the recoverability and classification of recorded asset amounts or the amounts and classification of liabilities that might be necessary should we be unable to continue as a going concern.

### **Critical Accounting Estimates**

In preparing the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"), we have adopted various accounting policies. Our most significant accounting policies are disclosed in Note 2 to the consolidated financial statements included in our registration statement on Form S-1 for the year ended December 31 2015, which became effective April 13, 2016.

The preparation of the consolidated financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Our estimates and assumptions, including those related to inventories, intangible assets, property, plant and equipment, legal proceedings, research and development, warranty obligations, product liability, fair valued liabilities, sales returns and discounts, and income taxes are updated as appropriate, which in most cases is at least quarterly. We base our estimates on historical experience, or various judgements about the reported values of assets, liabilities, revenues and expenses. Actual results may materially differ from these estimates.

### **Item 3. Quantitative and Qualitative Disclosures about Market Risk**

Smaller reporting companies are not required to provide this information.

### **Item 4. Controls and Procedures**

(a) *Evaluation of disclosure controls and procedures.* At the conclusion of the period ended September 30, 2016, we carried out an evaluation, under the supervision and with the participation of our management, including our Principal Executive Officer/Principal Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15 (e) under the Securities Exchange Act of 1934 (the "Exchange Act")). Based upon that evaluation, our Principal Executive Officer/Principal Financial Officer concluded that as of September 30, 2016, our disclosure controls and procedures were effective and adequately designed to ensure that the information required to be disclosed by us in the reports we submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the applicable rules and forms and that such information was accumulated and communicated to our Principal Executive Officer/Principal Financial Officer, in a manner that allowed for timely decisions regarding required disclosure.

We do not expect that our disclosure controls and procedures will prevent all errors and all instances of fraud. Disclosure controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the disclosure controls and procedures are met. Further, the design of disclosure controls and procedures must reflect the fact that there are resource constraints, and the benefits must be considered relative to their costs. Because of the inherent limitations in all disclosure controls and procedures, no evaluation of disclosure controls and procedures can provide absolute assurance that we have detected all our control deficiencies and instances of fraud, if any. The design of disclosure controls and procedures also is based partly on certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions.

(b) *Changes in internal controls.* There were no changes in our internal control over financial reporting that occurred during our last fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

## **PART II - OTHER INFORMATION**

### **Item 1. Legal Proceedings.**

Beginning in 2014, POSCO, one of our licensees and a shareholder, has had a contractual obligation to pay us a minimum fee of \$100,000 per year to license certain technologies. This obligation is due annually on February 28 of the following year. We record this license revenue at a rate of \$25,000 per quarter. POSCO is disputing that they are obligated to pay the royalties. A petition for arbitration has been filed for this matter by the Company on March 9, 2016. On July 7 we received a letter from the International Court of Arbitration and they have assigned an arbitrator to the case. No assessment or decision has made by the arbitrator as of the issuance date of this report.

### **Item 1A. Risk Factors.**

Smaller reporting companies are not required to provide this information.

However, the Company is supplementing its risk factors contained in the Company's registration statement on Form S-1 (File No. 333-209131) initially declared effective on April 13, 2016, as amended on August 31, 2016 with the following:

#### ***Newly purchased shares in the Company will experience immediate dilution***

Newly purchased shares of common stock purchased will experience immediate dilution of \$4.04 per share or 50.5% as a result of the public offering pursuant to the Company's registration statement initially declared effective on April 13, 2016, as amended on August 31, 2016.

**Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.**

None.

**Item 3. Defaults Upon Senior Securities.**

None.

**Item 4. Mine Safety Disclosures.**

None.

**Item 5. Other Information.**

The Company is filing its updated Form of Subscription Agreement effective as of November 3, 2016 as Exhibit 10.1. This agreement updates the "Form of Subscription Agreement for Primary Offering" originally filed as Exhibit 10.37 to the Company's registration statement on Form S-1 on January 27, 2016.

The Company is also filing its Form of Indemnification Agreement, as approved at the meeting of the Board of Directors on October 28, 2016, as Exhibit 10.2. This agreement sets forth the indemnification obligations of the Company to its directors for their services to the Company.

**Item 6. Exhibits.**

<b>EXHIBIT NUMBER</b>	<b>DESCRIPTION</b>	<b>LOCATION</b>
10.1	Form of Subscription Agreement for Primary Offering (updated as of November 3, 2016)	Filed herewith
10.2	Form of Indemnification Agreement	Filed herewith
31.1	Certifications of the Chief Executive Officer and Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	Filed herewith
32.1	Certification Pursuant To 18 U.S.C. Section 1350, As Adopted Pursuant To Section 906 of the Sarbanes-Oxley Act Of 2002*	Furnished herewith
101. INS	XBRL Instance Document	Filed herewith
101. CAL	XBRL Taxonomy Extension Calculation Link base Document	Filed herewith
101. DEF	XBRL Taxonomy Extension Definition Link base Document	Filed herewith
101. LAB	XBRL Taxonomy Label Link base Document	Filed herewith
101. PRE	XBRL Extension Presentation Link base Document	Filed herewith
101. SCH	XBRL Taxonomy Extension Scheme Document	Filed herewith

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this Quarterly Report on Form 10-Q to be signed on its behalf by the undersigned, thereunto duly authorized.

**XG SCIENCES, INC.**

Dated: November 3, 2016

By: /s/ Philip L. Rose  
Name: Philip L. Rose  
Title: Chief Executive Officer, President,  
Treasurer, Principal Executive Officer and  
Principal Financial Officer

Dated: November 3, 2016

By: /s/ Corinne Lyon  
Name: Corinne Lyon  
Title: Controller and Principal Accounting Officer

## XG SCIENCES, INC.

## FORM OF SUBSCRIPTION AGREEMENT

Ladies/Gentlemen:

XG Sciences, Inc., a Michigan corporation (the "Company") is selling in this offering (this "Offering") up to \$24,000,000 in shares of its common stock, no par value per share, at \$8 per share (the "Shares") to investors pursuant to that certain registration statement on Form S-1, as filed with the Securities and Exchange Commission and initially effective as of April 13, 2016 (the "Prospectus") as may be post-effectively amended from time to time.

1. Subscription.

1.1 The undersigned subscriber ("Subscriber") hereby subscribes for the number of Shares set forth on the signature page below at a purchase price of \$8.00 per Share.

1.2 If the undersigned is paying with a check or money order, enclosed is a check or money order payable to the order of **XG Sciences, Inc.**, in the amount set forth on the signature page below as payment in full of the total purchase price of the Shares subscribed for.

1.3 If the undersigned is paying by wire transfer, the undersigned shall effect a wire transfer in the amount set forth on the signature page below as payment in full of the total purchase price of the Shares subscribed for to the bank account set forth in and in accordance with the wire instructions detailed in Exhibit A.

2. Subscriber's Acknowledgments and Agreements.

The undersigned understands, acknowledges and agrees that:

2.1 If a resident of any of the states listed below, the undersigned meets the suitability standards of this section:

(a) Arkansas investors must meet the following criteria:

(i) A minimum annual gross income of \$70,000 and a minimum net worth of \$70,000, exclusive of automobile home and home furnishings; or

(ii) A minimum net worth of \$250,000 exclusive of automobile, home and home furnishings.

(b) California investors must meet the following criteria:

(i) Only "Accredited Investors" in California (as that term is defined in Rule 501 of Regulation D of the Securities Act of 1933, as amended) may invest in this offering.

(c) Kentucky investors must meet the following criteria:

- (i) A net income of at least \$200,000 in each of the two most recent years or joint income with a spouse exceeding \$300,000 for those years and a reasonable expectation of the same income level in the current year; or
  - (ii) An individual net worth, or joint net worth with that person's spouse, in excess of \$1,000,000, excluding the value of the person's primary resident.
- (d) Missouri investors must meet the following criteria:
- (i) A minimum annual gross income of \$70,000 and a minimum net worth of \$70,000, exclusive of automobile home and home furnishings; or
  - (ii) A minimum net worth of \$250,000 exclusive of automobile, home and home furnishings.
  - (iii) No more than 10% of any one Missouri investor's liquid net worth shall be invested in the Company's securities.
- (e) New Jersey investors must meet the following criteria:
- (i) Only "Accredited Investors" in New Jersey (as that term is defined in Rule 501 of Regulation D of the Securities Act of 1933, as amended) may invest in this offering.
- (f) This offering is no longer available to New Mexico investors.
- (g) Oklahoma investors must meet the following criteria:
- (i) A minimum annual gross income of \$70,000 and a minimum net worth of \$70,000, exclusive of automobile home and home furnishings; or
  - (h) A minimum net worth of \$250,000 exclusive of automobile, home and home furnishings.
- (i) Pennsylvania investors must meet the following criteria:
- (i) A minimum annual gross income of \$70,000 and a minimum net worth of \$70,000, exclusive of automobile home and home furnishings; or
  - (ii) A minimum net worth of \$250,000 exclusive of automobile, home and home furnishings.
- (j) Vermont investors may invest pursuant to the following restrictions:
- (i) Accredited investors in Vermont, as defined in 17 C.F.R. Section 230.501, may invest freely in this offering; and
  - (ii) Non-accredited Vermont investors may not purchase an amount in this offering that exceeds 10% of the investor's "liquid net worth", defined as an investor's total assets (not including home, home furnishings or automobiles) minus total liabilities.

2.2 This subscription may be accepted or rejected in whole or in part by the Company, in its sole discretion. The Company may also terminate the Offering at any time.

2.3 Except as provided under applicable securities laws, this subscription is and shall be irrevocable except that (a) the undersigned's execution and delivery of this Subscription Agreement will not constitute an agreement between the Company and the undersigned until this Subscription Agreement is accepted on behalf of the Company and, if not so accepted, the undersigned's subscription and obligations hereunder will terminate and (b) the undersigned can, at any time prior to acceptance of this Subscription Agreement, request in writing that the undersigned be released from the obligations hereunder, and the Company may, but need not, in its discretion, elect to release the undersigned from the subscription and from such obligations.

2.4 No U.S. federal or state agency has made any finding or determination as to the fairness of the terms of this Offering. These securities have not been recommended or endorsed by any U.S. federal or state securities commission or regulatory agency.

2.5 The Subscriber shall have the option to accept delivery of the Shares in any of the following formats: i) the Shares may be issued in book entry format and held electronically at the Company's transfer agent, VStock Transfer, LLC ("Transfer Agent"), ii) the Shares may be delivered, through the facilities of The Depository Trust Company, to a brokerage house, and shall be registered in such name or names and shall be in such denominations, as the Subscriber may request by written notice to the Company, or iii) the Shares may be issued via physical stock certificate. The cost of original issue tax stamps and other transfer taxes, if any, and any fees from the Transfer Agent in connection with the issuance and delivery of the Shares by the Company to the Subscriber shall be borne by the Company.

2.6 After this Offering is completed, the Company intends to seek either (i) a listing of its common stock on a securities exchange registered with the Securities and Exchange Commission (SEC) under Section 6(a) of the Securities Exchange Act of 1934, as amended, such as the NASDAQ Capital Market or the New York Stock Exchange (NYSE), or (ii) the quotation of its common stock on the OTCQB or OTCQX marketplaces operated by OTC Markets Group, Inc. (the act of achieving such listing or quotation, generally referred to hereafter as a "Public Listing"), but there can be no assurance that the Company will ever achieve a Public Listing (See Risk Factors – Risks Related to the Offering in the Prospectus). The Subscriber understands that until such time as the Company achieves a Public Listing of its Shares, a public market will not exist for the Shares and it may be difficult to sell the Shares purchased in this Offering.

### 3. Governing Law; Arbitration; Venue.

3.1 This Subscription Agreement and all rights and obligations hereunder shall be deemed to be made under and governed by the laws of the State of Michigan applicable to agreements made and to be performed entirely within such State, without reference to such State's laws regarding the conflict of laws.

3.2 Any litigation arising hereunder shall be instituted only in Ingham County or the state courts of the State of Michigan sitting in Ingham County. All parties agree that venue shall be proper in Ingham County for all such legal or equitable proceedings.

3.3 The headings of this Subscription Agreement are for convenience of reference and shall not form part of, or affect the interpretation of, this Subscription Agreement. All pronouns and any variations thereof refer to the masculine, feminine or neuter, singular or plural, as the context may require.

3.4 If any provision of this herein shall be invalid or unenforceable in any jurisdiction, such invalidity or unenforceability shall not affect the validity or enforceability of the remainder of this Subscription Agreement or the validity or enforceability of this Subscription Agreement in any other jurisdiction.

*[Remainder of page intentionally left blank. Signatures to follow]*

Date: \_\_\_\_\_

Subscriber's Name: \_\_\_\_\_

Type of Subscriber:

As (check one) Individual \_\_\_\_\_ Tenants in Common \_\_\_\_\_ Partnership \_\_\_\_\_ Joint Tenants \_\_\_\_\_ Corporation \_\_\_\_\_  
Trust \_\_\_\_\_ Minor with Adult Custodian under UGMA \_\_\_\_\_ Other \_\_\_\_\_

Number of Shares Subscribed For: \_\_\_\_\_

Purchase Price Per Share:        x        \$8.00

Aggregate Purchase Price:        \$ \_\_\_\_\_

\_\_\_\_\_  
Signature of Subscriber

Name: \_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_  
Signature of Co-Subscriber

Name: \_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_  
Taxpayer I.D. Number

\_\_\_\_\_  
Taxpayer I.D. Number of Co-Subscriber

\_\_\_\_\_  
*Subscriber's mailing address:*

\_\_\_\_\_  
*Co-Subscriber's mailing address*

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Phone #:

\_\_\_\_\_  
Phone #:

\_\_\_\_\_  
Email:

\_\_\_\_\_  
Email:

Subscriber's Election for how it would like to receive shares:

\_\_\_\_\_ Please issue the Shares electronically in book entry format to be held at VStock Transfer, LLC, the Company's Transfer Agent.

\_\_\_\_\_ Please issue the Shares and deliver them electronically, through the facilities of The Depository Trust Company, to such brokerage house as indicated by the Subscriber in separate written instructions. Instructions must include name of Brokerage Firm, DTC Participant Number, Account Name and Account number.

\_\_\_\_\_ Please issue a stock certificate for the Shares and deliver it to the Subscriber's address above.<sup>(1)</sup>

**Accepted:**

XG SCIENCES, INC.

By: \_\_\_\_\_

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

(1) Subscribers are encouraged to discuss with their financial advisor(s) whether holding physical stock certificates in a public company in light of the current regulatory environment is an appropriate way to hold such securities as many brokerage houses will no longer accept physical stock certificates for deposit.

**EXHIBIT A**

**COMPANY WIRE INSTRUCTIONS**

**Bank Receiving Funds:** Fifth Third Bank  
38 Fountain Square  
Cincinnati, OH 45263  
USA  
513-358-5385 (Wire Dept.)

**Bank Contact:** Thomas Ruis  
517.342.4019

**Routing/ABA Number:** 042000314

**SWIFT Code:** FTBCUS3C

**For Credit To:** XG Sciences Inc.  
3101 Grand Oak Drive  
Lansing, MI 48906  
USA  
517.703.1110

**Account Number:** XXXXXXXXXXXX

XG SCIENCES, INC.

**INDEMNIFICATION AGREEMENT**

This Indemnification Agreement (this "Agreement") is made and entered into as of the \_\_\_\_ day of \_\_\_\_\_, 20\_\_ by and between XG Sciences, Inc., a Michigan corporation (the "Corporation"), and \_\_\_\_\_ ("Indemnitee").

**WITNESSETH:**

**WHEREAS**, highly competent persons have become more reluctant to serve corporations as directors, officers or in other capacities unless they are provided with adequate indemnification against inordinate risks of claims and actions against them arising out of their service to and activities on behalf of the corporation;

**WHEREAS**, the uncertainties relating to indemnification have increased the difficulty of attracting and retaining such persons;

**WHEREAS**, the Board of Directors of the Corporation has determined that the increased difficulty in attracting and retaining such persons is detrimental to the best interests of the Corporation's stockholders and that the Corporation should act to assure such persons that there will be increased certainty of such protection in the future;

**WHEREAS**, it is reasonable, prudent and necessary for the Corporation contractually to obligate itself to indemnify, and to advance expenses on behalf of, such persons to the fullest extent permitted by applicable law so that they will serve or continue to serve the Corporation free from undue concern that they will not be so indemnified; and

**WHEREAS**, the Indemnitee does not regard the protection available under the Corporation's Articles of Incorporation, Bylaws and insurance as adequate in the present circumstances, and may not be willing to serve the Corporation without adequate protection, and the Corporation desires the Indemnitee to continue to serve the Corporation.

**NOW, THEREFORE**, in consideration of Indemnitee's agreement to provide services to the Corporation and/or certain of its affiliates as contemplated hereby, the mutual agreements contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto stipulate and agree as follows:

**ARTICLE I**  
**Definitions**

*Section 1.1.* As used herein, the following words and terms shall have the following respective meanings (whether singular or plural):

"Articles of Incorporation" means the Articles of Incorporation of the Corporation (as they may be amended or restated from time to time).

"Board of Directors" means the board of directors of the Corporation.

"Bylaws" means the bylaws of the Corporation (as they may be amended or restated from time to time).

---

“Change of Control” means:

(i) The acquisition by any individual, entity or group (within the meaning of Section 13(d)(5) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”)) (a “Person”) of beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act) of forty percent (40%) or more of either (1) the then outstanding shares of common stock of the Corporation (the “Outstanding Corporation Common Stock”) or (2) the combined voting power of the then outstanding voting securities of the Corporation entitled to vote generally in the election of directors (the “Outstanding Corporation Voting Securities”); *provided, however,* that for purposes of this subsection (i), the following acquisitions shall not constitute a Change of Control: (A) any acquisition directly from the Corporation, (B) any acquisition by the Corporation, (C) any acquisition by any employee benefit plan (or related trust) sponsored or maintained by the Corporation or any entity controlled by the Corporation or (D) any acquisition by any entity pursuant to a transaction which complies with clauses (1) and (2) of subsection (iii) of this definition;

(ii) Individuals who, as of the date hereof, constitute the Board of Directors (the “Incumbent Board”) cease for any reason to constitute at least a majority of the Board of Directors; *provided, however,* that any individual becoming a director subsequent to the date hereof whose election, or nomination for election by the Corporation’s stockholders, was approved by a vote of at least a majority of the directors then comprising the Incumbent Board shall be considered as though such individual were a member of the Incumbent Board, but excluding, for this purpose, any such individual whose initial assumption of office occurs as a result of an actual or threatened election contest with respect to the election or removal of directors or other actual or threatened solicitation of proxies or consents by or on behalf of a Person other than the Board of Directors; or

(iii) Consummation of a reorganization, merger or consolidation or sale or other disposition of all or substantially all of the assets of the Corporation (a “Business Combination”), in each case, unless, following such Business Combination, (1) all or substantially all of the individuals and entities who were the beneficial owners, respectively, of the Outstanding Corporation Common Stock and Outstanding Corporation Voting Securities immediately prior to such Business Combination beneficially own, directly or indirectly, more than forty percent (40%) of, respectively, the then outstanding shares of common stock and the combined voting power of the then outstanding voting securities entitled to vote generally in the election of directors, as the case may be, of the entity resulting from such Business Combination (including, without limitation, an entity that as a result of such transaction owns the Corporation or all or substantially all of the Corporation’s assets either directly or through one or more subsidiaries) in substantially the same proportions as their ownership, immediately prior to such Business Combination, of the Outstanding Corporation Common Stock and Outstanding Corporation Voting Securities, as the case may be, and (2) at least a majority of the members of the board of directors of the corporation, or the similar managing body of a non-corporate entity, resulting from such Business Combination were members of the Incumbent Board at the time of the execution of the initial agreement, or of the action of the Board of Directors, providing for such Business Combination.

“Covered Capacity” means, with respect to any person, that such person (or a person for whom he is serving as a legal representative) is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as director, manager, officer, trustee, general partner, member, fiduciary, employee or agent of (i) a subsidiary of the Corporation or (ii) any other enterprise.

“Expenses” include all direct and indirect costs, fees and expenses of any type or nature, including, without limitation, all attorneys’ fees and costs, retainers, court costs, transcript costs, fees of experts, witness fees, travel expenses, fees of private investigators and professional advisors, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, fax transmission charges, secretarial services and all other disbursements or expenses in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, settlement or appeal of or otherwise participating in a Proceeding, including reasonable compensation for time spent by Indemnitee for which he is not otherwise compensated by the Corporation or any third party. “Expenses” also include expenses incurred in connection with any appeal resulting from any Proceeding, including the premium for, security for, and other costs relating to, any cost bond, supersedeas bond or other appeal bond or its equivalent. “Expenses” do not include amounts paid in settlement by Indemnitee or the amount of judgments or fines against Indemnitee.

“Independent Counsel” means a law firm, or a member of a law firm, that is experienced in matters of corporation law and neither presently is, nor in the five years previous to his selection or appointment has been, retained to represent: (i) the Corporation or Indemnatee in any matter material to either such party or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. The term “Independent Counsel” does not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Corporation or Indemnatee in an action to determine Indemnatee’s rights under this Agreement, the Bylaws of the Corporation or under any agreement between Indemnatee and the Corporation.

“MCL” means the Michigan Compiled Laws.

“Proceeding” includes a threatened, pending or completed action, suit, arbitration, alternate dispute resolution, investigation, inquiry, administrative hearing, appeal or any other actual, threatened or completed proceedings with or brought in the right of the Corporation or otherwise and whether civil, criminal, administrative or investigative in nature.

## ARTICLE II Services by Indemnatee

*Section 2.1.* Indemnatee agrees to serve or continue to serve in his current capacity or capacities as a director, officer, employee, agent or fiduciary of the Corporation. Indemnatee may also serve, as the Corporation may reasonably request from time to time, as a director, officer, employee, agent or fiduciary of any other corporation, partnership, limited liability company, association, joint venture, trust, employee benefit plan or other enterprise in which the Corporation has an interest. Indemnatee and the Corporation each acknowledge that they have entered into this Agreement as a means of inducing Indemnatee to serve the Corporation in such capacities. Indemnatee may at any time and for any reason resign from such position or positions (subject to any other contractual obligation or any obligation imposed by operation of law). The Corporation shall have no obligation under this Agreement to continue Indemnatee in any such position for any period of time and shall not be precluded by the provisions of this Agreement from removing Indemnatee from any such position at any time.

## ARTICLE III Third Party Proceedings

*Section 3.1.* The Corporation shall indemnify Indemnatee if he was or is a party or is threatened to be made a party to any Proceeding, except an action by or in the right of the Corporation, by reason of the fact that he is or was serving or acting in a Covered Capacity, against Expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by Indemnatee in accordance with Article VIII in connection with the Proceeding if he: (a) is not liable pursuant to MCL 450.1541a and (b) acted in good faith and in a manner which Indemnatee reasonably believed to be in or not opposed to the best interests of the Corporation, and, with respect to any criminal action or Proceeding, had no reasonable cause to believe his or her conduct was unlawful. The termination of any Proceeding by judgment, order, settlement, conviction or upon a plea of nolo contendere or its equivalent, does not, of itself, create a presumption that Indemnatee is liable pursuant to MCL 450.1541a or did not act in good faith and in a manner which Indemnatee reasonably believed to be in or not opposed to the best interests of the Corporation or that, with respect to any criminal action or proceeding, he had reasonable cause to believe that his or her conduct was unlawful.

## ARTICLE IV Derivative Actions

*Section 4.1.* The Corporation shall indemnify Indemnatee if he was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Corporation to procure a judgment in its favor, by reason of the fact that Indemnatee is or was serving or acting in a Covered Capacity, against Expenses actually and reasonably incurred by Indemnatee in accordance with Article VIII and amounts paid in settlement thereof if Indemnatee: (a) is not liable pursuant to MCL 450.1541a, and (b) acted in good faith and in a manner which he reasonably believed to be in or not opposed to the best interests of the Corporation. Indemnification may not be made for any claim, issue or matter as to which Indemnatee has been adjudged by a court of competent jurisdiction, after exhaustion of all appeals therefrom, to be liable to the Corporation or for amounts paid in settlement to the Corporation, unless and only to the extent that the court in which the action or suit was brought or other court of competent jurisdiction determines upon application that in view of all the circumstances of the case, the person is fairly and reasonably entitled to indemnity for such Expenses as the court deems proper.

ARTICLE V  
**Party Who is Wholly or Partially Successful**

*Section 5.1.* Notwithstanding any other provisions of this Agreement, to the extent that Indemnitee is a party to or a participant in and is successful on the merits or otherwise in any Proceeding or in defense of any claim, issue or matter in any Proceeding, in whole or in part, to which Indemnitee was or is a party or is otherwise involved by reason of the fact that he is or was serving or acting in a Covered Capacity, the Corporation shall indemnify and hold harmless Indemnitee against all Expenses actually and reasonably incurred by Indemnitee in accordance with Article VIII in connection with any Proceeding or defense. If Indemnitee is not wholly successful in the Proceeding, the Corporation shall indemnify and hold harmless Indemnitee against all Expenses actually and reasonably incurred by him or on his behalf in connection with each claim, issue or matter on which Indemnitee was successful. The termination of any claim, issue or matter in the Proceeding by dismissal, with or without prejudice, by reason of settlement, judgment, order or otherwise, shall be deemed to be a successful result as to such Proceeding, claim, issue or matter, so long as there has been no finding that Indemnitee (i) is liable pursuant to MCL 450.1541a or (ii) did not act in good faith and in a manner which Indemnitee reasonably believed to be in or not opposed to the best interests of the Corporation, and, with respect to any criminal proceeding or action, had no reasonable cause to believe his or her conduct was unlawful.

ARTICLE VI  
**Expenses as Witness**

*Section 6.1.* To the extent Indemnitee is, by reason of his or her serving or acting in a Covered Capacity, a witness in any Proceeding to which Indemnitee is not a party, Indemnitee shall be indemnified and held harmless against all Expenses actually and reasonably incurred by him or on his behalf in accordance with Article VIII in connection with the Proceeding and his or her acting as a witness in it.

ARTICLE VII  
**Exclusions**

*Section 7.1.* Notwithstanding the foregoing, indemnification, unless ordered by a court pursuant to MCL 450.1564c or for the advancement of Expenses made pursuant to Section 8.1, shall not be made to or on behalf of the Indemnitee if he or she is adjudged by a court of competent jurisdiction, after exhaustion of all appeals therefrom, to be liable for intentional misconduct, fraud or a knowing violation of law.

*Section 7.2.* Notwithstanding any provision in this Agreement, the Corporation is not obligated under this Agreement to make any indemnification payments in connection with any claim made against Indemnitee:

- (a) For which payment has actually been received by or on behalf of Indemnitee under any insurance policy or other indemnity provision, except with respect to any excess beyond the amount actually received under any insurance policy, contract, agreement or other indemnity provision or otherwise;
- (b) For an accounting of profits made from the purchase and sale, or sale and purchase, by Indemnitee of securities of the Corporation within the meaning of Section 16(b) of the Exchange Act; or

(c) Except as provided for in Sections 8.1 of this Agreement, in connection with any Proceeding or any part of any Proceeding, initiated by Indemnitee, including those initiated against the Corporation or its officers, directors or employees, unless (i) the Board of Directors authorizes the Proceeding or part thereof before its initiation, (ii) the Proceeding was commenced following a Change of Control or (iii) the Corporation provides the indemnification in its sole discretion, pursuant to the powers vested in the Corporation under applicable law.

**ARTICLE VIII**  
**Advancement of Expenses**

*Section 8.1.* Notwithstanding any other provision of this Agreement and to the fullest permitted by applicable law, the Corporation shall advance the Expenses incurred by Indemnitee in connection with any Proceeding to which Indemnitee was or is a party or is otherwise involved by reason of the fact that he is or was serving or acting in a Covered Capacity, as soon as practicable but in any event not more than ten (10) days after receipt by the Corporation of a statement requesting the advances, whether the statement is submitted before or after final disposition of any Proceeding. Unless otherwise required by law, the Corporation shall not require that Indemnitee provide any form of security for repayment of or charge any interest on any amounts advanced pursuant to this Section 8.1. The advances shall be made without regard to Indemnitee's ability to repay the Expenses and without regard to any belief or determination as to Indemnitee's ultimate entitlement to be indemnified. Advances shall include any and all reasonable Expenses incurred in pursuing a Proceeding to enforce the right of advancement, including Expenses incurred in preparing statements to the Corporation to support the advances claimed. Indemnitee qualifies for advances, to the fullest extent permitted by applicable law, solely upon the execution and delivery to the Corporation of an undertaking providing that Indemnitee undertakes to repay the advance to the extent it is ultimately determined that Indemnitee is not entitled to be indemnified by the Corporation under the provisions of this Agreement, the Articles of Incorporation or an agreement between the Corporation and Indemnitee. This section does not apply to any claim made by Indemnitee for any indemnification payment that is excluded pursuant to Section 7.2 of this Agreement.

**ARTICLE IX**  
**Notices**

*Section 9.1.* Indemnitee agrees to notify the Corporation in writing promptly after being served with any summons, citation, subpoena, complaint, indictment, inquiry, information request or other document relating to any Proceeding or matter which may be subject to indemnification, hold harmless or exoneration rights or the advancement of expenses; *provided, however*, that the failure of Indemnitee to so notify the Corporation shall not relieve the Corporation of any obligation it may have to Indemnitee under this Agreement or otherwise. Indemnitee may deliver to the Corporation a written application to indemnify and hold harmless Indemnitee in accordance with this Agreement. The application may be delivered from time to time and may be amended and supplemented and at such times as Indemnitee deems appropriate in his or her sole discretion. After a written application for indemnification is delivered by Indemnitee, Indemnitee's entitlement to indemnification shall be determined pursuant to Articles X, XI and XII of this Agreement.

**ARTICLE X**  
**Procedures**

*Section 10.1.* To the fullest extent permitted by law, the indemnification provided for in this Agreement shall be deemed mandatory. To the extent that, under applicable law, any indemnification provided for in this Agreement is treated as discretionary, any indemnification determination, unless ordered by a court or advanced pursuant to Section 8.1 of this Agreement, may be made by the Corporation only as authorized in the specific case upon a determination that the indemnification of Indemnitee is proper in the circumstances. Such determination must be made:

- (i) by the stockholders of the Corporation;

(ii) by the Board of Directors by a majority vote of a quorum consisting of directors who are not parties to the Proceeding;

(iii) if a majority vote of a quorum of directors not parties to the Proceeding so orders, by Independent Counsel in a written opinion; or

(iv) if a quorum consisting of directors who are not parties to the Proceeding cannot be obtained, by Independent Counsel in a written opinion.

Notwithstanding the foregoing, if at any time during the two (2) year period prior to the date of any written application for indemnification submitted by Indemnitee in connection with a particular Proceeding there shall have occurred a Change of Control, the Board of Directors shall direct (unless Indemnitee otherwise agrees in writing) that the indemnification determination shall be made by Independent Counsel in a written opinion.

*Section 10.2.* If the determination of Indemnitee's entitlement to indemnification is to be made by Independent Counsel, the Independent Counsel must be selected as provided in this Section 10.2. The Independent Counsel shall be selected by Indemnitee and Indemnitee must give written notice to the Corporation advising it of the Independent Counsel's identity so selected, unless Indemnitee requests in writing that the Independent Counsel be selected by the Board of Directors. If the Independent Counsel is selected by the Board of Directors, the Corporation must give written notice to Indemnitee setting forth the identity of the Independent Counsel. In either event, Indemnitee or the Corporation, as the case may be, may, within ten (10) days after the written notice of selection is received, deliver to the other party a written objection to the selection. These objections may be asserted only on the grounds that the Independent Counsel selected does not meet the requirements of an "Independent Counsel" as defined in Article I of this Agreement, and the objection must set forth with particularity the factual basis of the assertion. Absent a proper and timely objection, the person so selected shall act as Independent Counsel. If within twenty (20) days after submission by Indemnitee of a request for indemnification, no Independent Counsel has been selected, either the Corporation or Indemnitee may petition a court with jurisdiction over the parties for resolution of the objection and/or the appointment of a person to be Independent Counsel selected by the court.

*Section 10.3.* The Corporation agrees to pay the reasonable fees and Expenses of Independent Counsel in accordance with Article VIII and to fully indemnify and hold the Independent Counsel harmless against any and all Expenses, claims, liabilities and damages arising out of or relating to this Agreement or the Independent Counsel's engagement.

*Section 10.4.* The Corporation must promptly advise Indemnitee in writing if a determination is made that Indemnitee is not entitled to indemnification and must include a description of the reasons or basis for denial. If it is determined Indemnitee is entitled to indemnification, the payment to Indemnitee must be made as soon as practicable but in no event more than ten (10) days after the determination. Indemnitee must reasonably cooperate with the persons making the determination and, upon request, must provide such persons with documents and information (which are not privileged or otherwise protected) reasonably available to Indemnitee and reasonably necessary to the determination. All Expenses incurred by Indemnitee in cooperating with the persons making the determination shall be paid by the Corporation (irrespective of the determination as to indemnification) and the Corporation hereby indemnifies and agrees to hold Indemnitee harmless from those Expenses.

## ARTICLE XI Presumptions

*Section 11.1.* In determining whether Indemnitee is entitled to indemnification under this Agreement, the person or persons making the determination must presume that Indemnitee is entitled to indemnification under this Agreement and the Corporation has the burden of proof to overcome that presumption. Moreover, if at any time during the two (2) year period prior to the date of any written application for indemnification submitted by Indemnitee in connection with a particular Proceeding or other matter there shall have occurred a Change of Control, the foregoing presumption may only be overcome by clear and convincing evidence. Neither of the following is a defense to an action seeking a determination granting indemnity to Indemnitee or creates a presumption that Indemnitee has not met the applicable standard of conduct: (i) the failure of the Corporation (including its directors or Independent Counsel) to have made a determination before the beginning of an action seeking a ruling that indemnification is proper nor (ii) an actual determination by the Corporation (including its directors or Independent Counsel) that Indemnitee has not met the applicable standard of conduct.

*Section 11.2.* If the persons or entity selected under Article X of this Agreement to determine whether Indemnitee is entitled to indemnification has not made a determination within thirty (30) days after receipt by the Corporation of the request for it, the requisite determination of entitlement to indemnification shall be deemed to have been made and Indemnitee is entitled to such indemnification, absent (i) a misstatement by Indemnitee of a material fact or an omission of material fact necessary to make his or her statements not materially misleading made in connection with the request for indemnification (which misstatement or omission is shown by the Corporation to be of sufficient importance that it would likely alter the applicable determination) or (ii) a final judicial determination that indemnification is expressly prohibited under applicable law. The thirty (30) day period may be extended for a reasonable time, not to exceed fifteen (15) additional days, if the persons or entity making the determination requires the additional time for obtaining or evaluating documents or information.

*Section 11.3.* The termination of any Proceeding or any claim therein, by judgment, order, settlement or conviction, or upon a plea of nolo contendere does not (except as expressly provided elsewhere in this Agreement) of itself adversely affect the right of Indemnitee to indemnification or create a presumption that Indemnitee did not meet any particular standard of conduct, did not act in good faith and in a manner which Indemnitee reasonably believed to be in or not opposed to the best interests of the Corporation or, with respect to any criminal Proceeding, that Indemnitee had reasonable cause to believe his or her conduct was unlawful.

*Section 11.4.* In determining good faith, Indemnitee must be deemed to have acted in good faith and in a manner which he reasonably believed to be in or not opposed to the best interests of the Corporation if Indemnitee's action is based on the records or books of account of the Corporation, including financial statements, or on information, opinions, reports or statements supplied to Indemnitee by the directors or officers of the Corporation or other enterprise in the course of their duties, or on the advice of legal counsel for the Corporation or the enterprise or on information or records given or reports made by an independent certified public accountant or by an appraiser or other expert.

*Section 11.5.* The knowledge and actions or failures to act of any other director, officer, trustee, partner, member, fiduciary, agent or employee of the Corporation or other enterprise shall not be imputed to Indemnitee for the purposes of determining his or her right to indemnification.

## ARTICLE XII Remedies of Indemnitee

*Section 12.1.* If a determination is made that Indemnitee is not entitled to indemnification under this Agreement, any judicial Proceeding or arbitration begun pursuant to this Agreement must be conducted in all respects as a de novo trial or arbitration, on the merits, and Indemnitee shall not be prejudiced by reason of the adverse determination. In such a Proceeding or arbitration, Indemnitee is presumed to be entitled to indemnification and the Corporation has the burden of proving Indemnitee is not entitled to be indemnified. Moreover, if at any time during the two (2) year period prior to the date of any written application for indemnification submitted by Indemnitee in connection with a particular Proceeding or other matter there shall have occurred a Change of Control, the Corporation will be deemed to have satisfied such burden only if it meets the standard of proof by clear and convincing evidence. The Corporation may not refer to or introduce into evidence any determination made pursuant to Section 11.1 of this Agreement adverse to Indemnitee for any purpose. If Indemnitee begins a judicial Proceeding or arbitration seeking indemnification, Indemnitee is not required to reimburse the Corporation for any advances pursuant to Section 8.1 of this Agreement until a final determination is made with respect to Indemnitee's right to indemnification, after all rights of appeal have been exhausted or lapsed.

*Section 12.2.* If it has been determined that Indemnitee is entitled to indemnification, the Corporation is bound by that determination in any judicial Proceeding or arbitration commenced by Indemnitee seeking to compel the indemnification, absent (i) a misstatement by Indemnitee of a material fact or an omission of a material fact necessary to make Indemnitee's statement not materially misleading connected with the request for indemnification (which misstatement or omission is shown by the Corporation to be of sufficient importance that it would likely alter the applicable determination) or (ii) a prohibition of the indemnification under applicable law. In any Proceeding or arbitration commenced by Indemnitee seeking indemnification, the Corporation is precluded from asserting that the procedures and presumptions of this Agreement are not valid, binding and enforceable and must stipulate that the Corporation is bound by all the provisions of this Agreement.

**ARTICLE XIII**  
**Contribution; Joint Liability**

*Section 13.1.* To the fullest extent permissible under applicable law, if the indemnification rights provided for in this Agreement are unavailable to Indemnitee in whole or in part for any reason whatsoever (other than by reason of the language of any express exclusion contained in this Agreement), the Corporation, instead of indemnifying and holding harmless Indemnitee, must contribute to the payment thereof, in the first instance, by paying the entire amount incurred by Indemnitee, whether for judgments, liabilities, fines, penalties, amounts paid or to be paid in settlement and/or for Expenses, in connection with any Proceeding without requiring Indemnitee to contribute to the payment, and the Corporation hereby waives and relinquishes any right of contribution it may have at any time against Indemnitee. The Corporation shall not enter into any settlement of any Proceeding in which the Corporation is jointly liable with Indemnitee, or would be joined in the Proceeding, unless the settlement provides for a full and final release of all claims asserted against Indemnitee. The Corporation hereby agrees to fully indemnify and hold harmless Indemnitee from any claims for contribution which may be brought by officers, directors or employees of the Corporation other than Indemnitee who may be jointly liable with Indemnitee.

**ARTICLE XIV**  
**Subrogation**

*Section 14.1.* If any payment is made under this Agreement, the Corporation is subrogated to the extent of such payment to all the rights of recovery of Indemnitee, who must within a reasonable period of time after payment execute all papers required and take all action necessary to secure those rights, including the execution of such documents as are necessary to enable the Corporation to bring suit to enforce those rights.

**ARTICLE XV**  
**Severability**

*Section 15.1.* If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (a) the validity, legality and enforceability of the remaining provisions of this Agreement (including, but not limited to, each portion of any paragraph containing any such provision held to be invalid, illegal or unenforceable, that is not itself held to be invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby; and (b) to the fullest extent possible, the provisions of this Agreement (including, but not limited to, each such portion of any paragraph containing any such provision held to be invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested by the provision held invalid, illegal or unenforceable.

**ARTICLE XVI**  
**Miscellaneous**

*Section 16.1.* Non-Exclusivity of Rights. The rights of Indemnitee under this Agreement are not exclusive of any other rights to which Indemnitee may at any time be entitled under the law, the Articles of Incorporation, the Bylaws or any agreement. The indemnification and advancement of Expenses for Indemnitee who has ceased to be a director, officer, employee or agent shall continue in full force and effect and shall inure to the benefit of the heirs, executors and administrators of Indemnitee. The rights of Indemnitee under this Agreement shall be contract rights. No amendment, alteration or repeal of this Agreement can limit or restrict any right of Indemnitee under this Agreement with respect to any action taken before the amendment, alteration or repeal. If a change in applicable law permits greater indemnification than that which would be afforded under this Agreement, it is the intent of the Corporation that Indemnitee shall enjoy by this Section 16.1 the greater benefits so afforded. Except as provided in this Section 16.1 with respect to changes in applicable law which broaden the right of Indemnitee to be indemnified by the Corporation, no supplement, modification or amendment of this Agreement shall be binding unless executed in writing by each of the parties hereto.

*Section 16.2.* Acknowledgment of Certain Matters. Both the Corporation and Indemnitee acknowledge that in certain instances, applicable law or public policy may prohibit indemnification of Indemnitee by the Corporation under this Agreement or otherwise. Indemnitee understands and acknowledges that the Corporation has undertaken or may be required in the future to undertake, by the Securities and Exchange Commission, to submit the question of indemnification to a court in certain circumstances for a determination of the Corporation's right under public policy to indemnify Indemnitee.

*Section 16.3.* Waivers. The observance of any term of this Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively) by the party entitled to enforce such term only by a writing signed by the party against which such waiver is to be asserted. Unless otherwise expressly provided herein, no delay on the part of any party hereto in exercising any right, power or privilege hereunder shall operate as a waiver thereof, nor shall any waiver on the part of any party hereto of any right, power or privilege hereunder operate as a waiver of any other right, power or privilege hereunder nor shall any single or partial exercise of any right, power or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, power or privilege hereunder.

*Section 16.4.* Enforcement. The Corporation expressly confirms and agrees that it has entered into this Agreement in order to induce the Indemnitee to continue to serve as an officer or director of the Corporation, and acknowledges that the Indemnitee is relying upon this Agreement in continuing in such capacity.

*Section 16.5.* Entire Agreement. This Agreement and the documents referred to herein constitute the entire agreement between the parties hereto with respect to the matters covered hereby, and any other prior or contemporaneous oral or written understandings or agreements with respect to the matters covered hereby are superseded by this Agreement.

*Section 16.6.* Certain Rights. The right to be indemnified or to the advancement or reimbursement of Expenses (i) is intended to be retroactive and shall be available as to events occurring prior to the date of this Agreement and (ii) shall continue after any rescission or restrictive modification of such provisions as to events occurring prior thereto. Nothing in this Agreement, expressed or implied, is intended to confer any rights or remedies under or by reason of this Agreement on any person other than the parties to this Agreement and their respective heirs, personal representatives, successors and assigns.

*Section 16.7.* Governing Law; Venue. This Agreement shall be construed in accordance with and governed by the laws of the State of Michigan without regard to any principles of conflict of laws that, if applied, might permit or require the application of the laws of a different jurisdiction. The parties hereby agree that any dispute that may arise between them arising out of or in connection with this Agreement shall be adjudicated before a court located in Ingham County, Michigan and they hereby submit to the exclusive jurisdiction of the courts of the State of Michigan located in Lansing, Michigan, and of the federal courts having jurisdiction in such district with respect to any action or legal proceeding commenced by either party, and irrevocably waive any objection they now or hereafter may have respecting the venue of any such action or proceeding brought in such a court or respecting the fact that such court is an inconvenient forum, relating to or arising out of this Agreement.

*Section 16.8.*     Headings. The Article and Section headings in and referred to in this Agreement are for convenience of reference only, and shall not be deemed to alter or affect the meaning or interpretation of any provisions hereof.

*Section 16.9.*     Counterparts. This Agreement may be executed in counterparts, each of which shall be deemed to be an original and all of which together shall be deemed to be one and the same instrument.

*Section 16.10.*    Use of Certain Terms. As used in this Agreement, the words “herein,” “hereof,” and “hereunder” and other words of similar import refer to this Agreement as a whole and not to any particular paragraph, subparagraph, section, subsection, or other subdivision. Whenever the context may require, any pronoun used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular form of nouns, pronouns and verbs shall include the plural and vice versa.

[signatures appear on following page]

IN WITNESS WHEREOF, this Agreement has been duly executed and delivered to be effective as of the date first above written.

XG SCIENCES, INC.

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

INDEMNITEE

\_\_\_\_\_

Name: \_\_\_\_\_

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER  
AND PRINCIPAL FINANCIAL OFFICER  
PURSUANT TO RULE 13a-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934,  
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Philip L. Rose, certify that:

1. I have reviewed this quarterly report on Form 10-Q of XG Sciences, Inc. for the period ended September 30, 2016;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the consolidated financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. I am responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f) for the registrant and have:
  - (a) designed such disclosure controls and procedures, or have caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) designed such internal controls over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the period covered by this report based on such evaluation; and
  - (d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent function):
  - (a) all significant deficiencies and material weaknesses in the design or operation of internal controls over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process summarize and report financial information; and
  - (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls over financial reporting.

DATE: November 3, 2016

By: /s/Philip L. Rose

Name: Philip L. Rose

Titles: Chief Executive Officer, President,  
Treasurer, Principal Executive Officer and  
Principal Financial Officer

---

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER  
AND PRINCIPAL FINANCIAL OFFICER  
PURSUANT TO 18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO SECTION 906  
OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the quarterly report of XG Sciences, Inc. (the "Company") on Form 10-Q for the period ended September 30, 2016 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Philip L. Rose, Principal Executive Officer and Principal Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

DATE: November 3, 2016

By: s/ Philip L. Rose  
Name: Philip L. Rose  
Titles: Chief Executive Officer, President,  
Treasurer, Principal Executive Officer and  
Principal Financial Officer

---