

ASPEN AEROGELS INC

FORM 10-Q (Quarterly Report)

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

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 30, 2014

OR

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

For the transition period from _____ to _____

Commission file number: 001-36481

ASPEN AEROGELS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

30 Forbes Road, Building B
Northborough, Massachusetts
(Address of principal executive offices)

04-3559972
(I.R.S. Employer
Identification No.)

01532
(Zip Code)

Registrant's telephone number, including area code: (508) 691-1111

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. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company)

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 October 31, 2014, the registrant had 22,992,273 shares of common stock outstanding.

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Trademarks, Trade Names and Service Marks

We own or have rights to use “Aspen Aerogels,” “Cryogel,” “Pyrogel,” “Spaceloft,” the Aspen Aerogels logo and other trademarks, service marks and trade names of Aspen Aerogels appearing in this quarterly report on Form 10-Q. Solely for convenience, the trademarks, service marks and trade names referred to in this report are without the ® and TM symbols, but such references are not intended to indicate, in any way, that the owner thereof will not assert, to the fullest extent under applicable law, such owner’s rights to these trademarks, service marks and trade names. This report contains additional trademarks, service marks and trade names of other companies, which, to our knowledge, are the property of their respective owners.

PART I — FINANCIAL INFORMATION

Item 1. Financial Statements.

ASPEN AEROGELS, INC.

Consolidated Balance Sheets

(Unaudited)

	September 30, 2014	December 31, 2013
	(In thousands, except share and per share data)	
Assets		
Current assets:		
Cash	\$ 53,651	\$ 1,574
Accounts receivable, net of allowance for doubtful accounts	20,067	18,762
Inventories	6,349	6,892
Prepaid expenses and other current assets	1,025	791
Total current assets	81,092	28,019
Property, plant and equipment, net	65,879	62,023
Other assets	225	191
Total assets	<u>\$ 147,196</u>	<u>\$ 90,233</u>
Liabilities and Stockholders' Equity (Deficit)		
Current liabilities:		
Subordinated notes	\$ —	\$ 17,306
Convertible notes, current portion	—	435
Capital leases, current portion	76	75
Revolving line of credit	—	1,000
Accounts payable	14,736	7,114
Accrued expenses	4,705	4,814
Deferred revenue	1,440	595
Other current liabilities	50	50
Total current liabilities	21,007	31,389
Senior convertible notes	—	28,135
Convertible notes, excluding current portion	—	91,439
Capital leases, excluding current portion	108	165
Other long-term liabilities	1,031	1,071
Total liabilities	22,146	152,199
Commitments and contingencies (Note 12)		
Stockholders' equity (deficit):		
Series C convertible preferred stock, \$0.00001 par value; no shares authorized, issued and outstanding at September 30, 2014; 116,024,242 shares authorized, 20,000 shares issued and outstanding at December 31, 2013	—	—
Series B convertible preferred stock, \$0.00001 par value; no shares authorized, issued and outstanding at September 30, 2014; 1,601,053 shares authorized, issued and outstanding at December 31, 2013	—	—
Series A convertible preferred stock, \$0.00001 par value; no shares authorized, issued and outstanding at September 30, 2014; 5,284,347 shares authorized, issued and outstanding at December 31, 2013	—	—

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	September 30,	December 31,
	<u>2014</u>	<u>2013</u>
	(In thousands, except share and per share data)	
Preferred stock, \$0.00001 par value; 5,000,000 shares authorized, no shares issued and outstanding at September 30, 2014; no shares authorized, issued and outstanding at December 31, 2013	—	—
Common stock, \$0.00001 par value; 125,000,000 shares authorized, 23,000,000 shares issued and 22,992,273 outstanding at September 30, 2014; 255,702 shares authorized, 3,137 shares issued and outstanding at December 31, 2013	—	—
Treasury stock, at cost; 7,727 shares at September 30, 2014 and 0 shares at December 31, 2013	—	—
Additional paid-in capital	521,417	270,794
Accumulated deficit	<u>(396,367)</u>	<u>(332,760)</u>
Total stockholders' equity (deficit)	125,050	(61,966)
Total liabilities and stockholders' equity (deficit)	<u>\$ 147,196</u>	<u>\$ 90,233</u>

See accompanying notes to unaudited consolidated financial statements.

ASPEN AEROGELS, INC.

Consolidated Statements of Operations

(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2014	2013	2014	2013
	(in thousands, except share and per share data)			
Revenue:				
Product	\$ 24,589	\$ 20,833	\$ 71,975	\$ 58,804
Research services	848	1,047	2,440	3,059
Total revenue	<u>25,437</u>	<u>21,880</u>	<u>74,415</u>	<u>61,863</u>
Cost of revenue:				
Product	19,926	17,769	61,316	53,256
Research services	439	531	1,255	1,457
Gross profit	<u>5,072</u>	<u>3,580</u>	<u>11,844</u>	<u>7,150</u>
Operating expenses:				
Research and development	1,258	1,387	4,461	3,801
Sales and marketing	2,213	2,505	7,871	6,984
General and administrative	3,966	4,353	12,894	9,693
Total operating expenses	<u>7,437</u>	<u>8,245</u>	<u>25,226</u>	<u>20,478</u>
Loss from operations	<u>(2,365)</u>	<u>(4,665)</u>	<u>(13,382)</u>	<u>(13,328)</u>
Other income (expense):				
Interest expense	(47)	(8,038)	(50,225)	(20,292)
Gain on extinguishment of convertible notes	—	—	—	8,898
Loss on exchange of convertible notes	—	—	—	(5,697)
Costs associated with postponed public offering	—	—	—	(241)
Total other expense, net	<u>(47)</u>	<u>(8,038)</u>	<u>(50,225)</u>	<u>(17,332)</u>
Net loss	<u>\$ (2,412)</u>	<u>\$ (12,703)</u>	<u>\$ (63,607)</u>	<u>\$ (30,660)</u>
Net income (loss) attributable to common stockholders	<u>\$ (2,412)</u>	<u>\$ (12,703)</u>	<u>\$ (63,607)</u>	<u>\$ 2,196</u>
Net income (loss) attributable to common stockholders per share:				
Basic	<u>\$ (0.10)</u>	<u>\$(4,049.41)</u>	<u>\$ (7.26)</u>	<u>\$ 700.03</u>
Diluted	<u>\$ (0.10)</u>	<u>\$(4,049.41)</u>	<u>\$ (7.26)</u>	<u>\$ 674.10</u>
Weighted-average common shares outstanding:				
Basic	<u>22,997,060</u>	<u>3,137</u>	<u>8,762,866</u>	<u>3,137</u>
Diluted	<u>22,997,060</u>	<u>3,137</u>	<u>8,762,866</u>	<u>3,258</u>

See accompanying notes to unaudited consolidated financial statements.

ASPEN AEROGELS, INC.
Consolidated Statements of Cash Flows
(Unaudited)

	Nine Months Ended	
	September 30,	
	2014	2013
	(In thousands)	
Cash flows from operating activities:		
Net loss	\$(63,607)	\$(30,660)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Depreciation and amortization	7,692	7,431
Loss on disposal of assets	15	—
Debt issuance costs and non-cash interest expenses	47	989
Write-off of costs associated with postponed public offering	—	241
Accretion of debt to fair value	50,011	8,433
Gain on extinguishment of convertible notes	—	(8,898)
Loss on exchange of convertible notes	—	5,697
Issuance of Series C preferred stock warrants in connection with senior convertible notes	—	10,677
Stock compensation expense	7,398	3,921
Other	(32)	(84)
Changes in operating assets and liabilities:		
Accounts receivable	(1,305)	(1,186)
Inventories	543	(1,422)
Prepaid expenses and other assets	(343)	(312)
Accounts payable	775	(3,091)
Accrued expenses	(109)	1,216
Deferred revenue	845	(976)
Other liabilities	—	(6,000)
Net cash provided by (used in) operating activities	<u>1,930</u>	<u>(14,024)</u>
Cash flows from investing activities:		
Capital expenditures	(4,610)	(1,676)
Net cash used in investing activities	<u>(4,610)</u>	<u>(1,676)</u>
Cash flows from financing activities:		
Borrowings under line of credit	4,500	18,428
Repayments under line of credit	(5,500)	(19,766)
Proceeds from issuance of long-term debt	—	18,500
Repayment of borrowing under long-term debt	(18,849)	—
Financing costs	(47)	(864)
Repayment of obligations under capital lease	(61)	(31)
Proceeds from initial public offering	74,712	—
Proceeds from issuance of common stock	2	—
Net cash provided by financing activities	<u>54,757</u>	<u>16,267</u>
Net increase in cash	52,077	567
Cash at beginning of period	1,574	1,343
Cash at end of period	<u>\$ 53,651</u>	<u>\$ 1,910</u>

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	Nine Months Ended September 30,	
	2014	2013
	(In thousands)	
Supplemental disclosures of cash flow information:		
Interest paid	\$ 166	\$ 215
Income taxes paid	\$ —	\$ —
Supplemental disclosures of non-cash activities:		
Conversion of convertible and senior convertible notes to common stock	\$168,511	\$ —
Unpaid initial public offering costs	\$ —	\$ —
Accrued dividends on preferred stock	\$ —	\$ 996
Changes in redemption value of redeemable convertible preferred stock	\$ —	\$(86,161)
Reclassification of redeemable convertible preferred stock from temporary to permanent equity	\$ —	\$ (1,085)
Changes in accrued capital expenditures	\$ 6,847	\$ (170)
Capitalized interest	\$ 34	\$ 45
Capital lease	\$ 5	\$ —

See accompanying notes to unaudited consolidated financial statements.

ASPEN AEROGELS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(UNAUDITED)

(1) Description of Business and Basis of Presentation

Nature of Business

Aspen Aerogels, Inc. (collectively with its subsidiaries, the Company) is an energy technology company that designs, develops and manufactures innovative, high-performance aerogel insulation. The Company also conducts research and development related to aerogel technology supported by funding from several agencies of the U.S. government and other institutions in the form of research and development contracts.

Unaudited Interim Financial Information

The accompanying unaudited interim consolidated financial statements include the accounts of the Company and have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP) and regulations of the Securities and Exchange Commission (the SEC) regarding interim financial reporting. Certain information and disclosures normally included in the consolidated financial statements prepared in accordance with U.S. GAAP have been condensed or omitted pursuant to such rules and regulations. As such, the information included in this quarterly report on Form 10-Q should be read in conjunction with the audited consolidated financial statements and accompanying notes for the year ended December 31, 2013 included in our prospectus dated June 12, 2014 and filed with the SEC pursuant to Rule 424(b) under the Securities Act of 1933, as amended, on June 16, 2014 (the Prospectus).

In the opinion of the Company's management, the unaudited interim consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements and include all adjustments that are of a normal recurring nature and necessary for the fair statement of the Company's financial position as of September 30, 2014 and the results of its operations for the three months and nine months ended September 30, 2014 and 2013 and the cash flows for the nine month period then ended. The Company has evaluated events through the date of this filing.

The results of operations for the three and nine months ended September 30, 2014 are not necessarily indicative of the results to be expected for the year ending December 31, 2014 or any other period.

There have been no changes to our significant accounting policies described in the Prospectus that have had a material impact on our consolidated financial statements and notes thereto. All intercompany balances and transactions have been eliminated in consolidation.

Reclassification

The December 31, 2013 balance sheet reflects a \$0.2 million reclassification of the Company's sales returns reserve from a component of accrued expenses to a reduction of accounts receivable, a \$0.1 million reclassification of other assets to prepaid expenses and other current assets and a reclassification of \$0.1 million of other long term liabilities to other current liabilities to conform to the current period's presentation. The change has no impact on the results of operations.

(2) Initial Public Offering

On June 18, 2014, the Company completed an initial public offering (an IPO) of 7,500,000 shares of its common stock at a public offering price of \$11.00 per share. The Company received net proceeds of \$74.7 million after deducting underwriting discounts and commissions of \$4.3 million and other offering expenses of approximately \$3.5 million. Upon the closing of the offering, all of the Company's then-outstanding (i) warrants to purchase Series C preferred stock, (the "Series C warrants") were subject to an automatic net cashless exercise, (ii) convertible preferred stock (including the shares of Series C preferred stock issued upon the automatic net cashless exercise of Series C warrants) automatically converted into 115,982 shares of common stock, and (iii) Convertible Notes (see note 9) and Senior Convertible Notes (see note 8) automatically converted into 15,319,034 shares of common stock.

Prior to the closing of the offering, the Company completed a 1-for-824.7412544 reverse stock split of its common stock. All common shares and related per share amounts in the financial statements and notes have been adjusted retroactively to reflect the reverse stock split.

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Upon the closing of the IPO, the Company amended and restated its certificate of incorporation. The total number of shares of all classes of stock which the Company has the authority to issue is 130,000,000 shares, consisting of 125,000,000 shares of common stock, par value \$0.00001 per share (the common stock) and 5,000,000 shares of preferred stock, par value \$0.00001 per share (the preferred stock).

2014 Employee, Director and Consultant Equity Incentive Plan

Upon completion of the IPO, the Company adopted the 2014 Employee, Director and Consultant Equity Incentive Plan (the 2014 Equity Plan). Under the 2014 Equity Plan, the Company may grant incentive stock options, non-qualified stock options, restricted stock, unrestricted stock and other stock-based awards. Stock options under the plan are to be granted with an exercise price not less than the fair market value of the Company's common stock at the date of grant.

(3) Significant Accounting Policies

Use of Estimates

The preparation of the consolidated financial statements requires the Company to make a number of estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Significant items subject to such estimates and assumptions include allowances for doubtful accounts, inventory valuation, the carrying amount of property and equipment, fair value of debt and capital stock, stock-based compensation and deferred income taxes. The Company evaluates its estimates and assumptions on an on-going basis using historical experience and other factors, including the current economic environment, which it believes to be reasonable under the circumstances. Management adjusts such estimates and assumptions when facts and circumstances dictate. Illiquid credit markets, volatile equity markets and declines in business investment increase the uncertainty inherent in such estimates and assumptions. As future events and their effects cannot be determined with precision, actual results could differ significantly from these estimates. Changes in these estimates resulting from continuing changes in the economic environment will be reflected in the financial statements in future periods.

Cash

Cash balances are maintained with a major financial institution in North America. Deposits with this financial institution exceed the amount of insurance provided on such deposits.

Fair Value of Financial Instruments

Fair value is an exit price that represents the amount that would be received from the sale of an asset or paid to transfer a liability in an orderly transaction between market participants. Accordingly, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. The Company discloses the manner in which fair value is determined for assets and liabilities based on a three-tiered fair value hierarchy. The hierarchy ranks the quality and reliability of the information used to determine the fair values. The three levels of inputs described in the standard are:

- Level 1: Quoted prices in active markets for identical assets or liabilities.
- Level 2: Observable inputs, other than Level 1 prices, for the assets or liabilities, either directly or indirectly, for substantially the full term of the assets or liabilities.
- Level 3: Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Under the Fair Value Option Subsections of Financial Accounting Standards Board (FASB) ASC Subtopic 825-10, *Financial Instruments* — *Overall*, the Company has the irrevocable option to report most financial assets and financial liabilities at fair value on an instrument by instrument basis, with changes in fair value reported in earnings each reporting period. As a result of electing this option, the Company had recorded its Subordinated Notes, Senior Convertible Notes and Convertible Notes at fair value in order to measure these liabilities at amounts that more accurately reflect the economics of these instruments (see notes 7, 8 and 9).

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During the nine months ended September 30, 2014 and at December 31, 2013, the Company valued its Subordinated Notes, Senior Convertible Notes and Convertible Notes utilizing Level 3 inputs.

Stock-based Compensation

Stock-based compensation cost is measured at the grant date based on the fair value of the award. Expense is recognized on a straight-line basis over the requisite service period for all awards with service conditions. For performance-based awards, the grant date fair value is recognized as expense when the condition is probable of being achieved, and then on a graded basis over the requisite service period. The Company uses the Black-Scholes option-pricing model to determine the fair value of service-based awards, which requires a number of complex and subjective assumptions including fair value of the underlying security, the expected volatility of the underlying security, a risk-free interest rate, the expected term of the option and the forfeiture rate. For performance-based stock options issued during the year ended December 31, 2013, the Company used a Monte Carlo simulation model to estimate the number of options the Company expected to remain outstanding and eligible for vesting upon completion of an IPO. The simulation model was based on a number of complex assumptions including the terms of the performance condition, the expected value of the Company's common stock at the time of its IPO, the expected time from the date of grant to its IPO, and expected volatility. The compensation cost of these performance-based options was determined by multiplying the Black-Scholes estimate of grant date fair value by the percentage of options expected to remain outstanding and eligible for vesting upon completion of the Company's IPO. As a result of the closing of the IPO, the Company recorded \$5.6 million of stock-based compensation related to these performance-based awards during the nine months ended September 30, 2014.

Upon the completion of the IPO, the Company issued 61,816 shares of restricted common stock with an aggregate value at issuance of approximately \$0.7 million to its non-employee directors. In September 2014 the Company issued 318,517 restricted common stock units (RSU) and non-qualified stock options (NSO) to purchase 934,018 shares of common stock to employees under the 2014 Equity Plan. The RSUs and NSOs will vest over a four year period for certain employees and over a three year period for other employees.

Earnings per Share

Prior to the IPO, net income (loss) per common share was calculated using the two-class method, which is an earnings allocation formula that determines net income (loss) per share for the holders of the Company's common shares and participating securities. Prior to their conversion to common stock at the time of the Company's IPO, the Company's Series A preferred stock, Series B preferred stock and Series C preferred stock warrants contained participation rights in any dividend to be paid by the Company to holders of its common shares and were deemed to be participating securities. Net income (loss) available to common shareholders and participating securities was allocated to each share on an as-if-converted basis as if all of the earnings for the period had been distributed. The participating securities did not include a contractual obligation to share in losses of the Company and were not included in the calculation of net loss per share in the periods that have a net loss.

Diluted net income (loss) per share is computed using the more dilutive of (a) the two-class method, or (b) the if-converted method. The Company allocates net income (loss) first to preferred stockholders and holders of warrants to purchase preferred stock based on dividend rights and then to common, preferred stockholders and preferred warrant holders based on ownership interests. The weighted-average number of common shares included in the computation of diluted net income (loss) gives effect to all potentially dilutive common equivalent shares, including outstanding stock options and warrants. Common equivalent shares are excluded from the computation of diluted net income (loss) per share if their effect is antidilutive.

Subsequent to the IPO, the Company calculates net income (loss) per common share based on the weighted-average number of common shares outstanding during each period. Potential common stock equivalents are determined using the treasury stock method. The weighted-average number of common shares included in the computation of diluted net income (loss) gives effect to all potentially dilutive common equivalent shares, including outstanding stock options, restricted common stock units and warrants. Common equivalent shares are excluded from the computation of diluted net income (loss) per share if their effect is antidilutive.

Segments

Operating segments are identified as components of an enterprise about which discrete financial information is available for evaluation by the chief operating decision maker when making decisions on how to allocate resources and assess performance. The Company's chief operating decision maker is the Chief Executive Officer. The Company's chief operating decision maker reviews consolidated operating results to make decisions about allocating resources and assessing performance for the entire Company. The Company views its operations and manages its business as one operating segment.

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Information about the Company's revenues, based on shipment destination or services location, is presented in the following table:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2014	2013	2014	2013
	(In thousands)			
Revenue:				
U.S.	\$ 8,068	\$ 9,228	\$25,503	\$22,434
International	17,369	12,652	48,912	39,429
Total	<u>\$25,437</u>	<u>\$21,880</u>	<u>\$74,415</u>	<u>\$61,863</u>

Recently Issued Accounting Standards

In May 2014, the FASB issued Accounting Standards Update (ASU) 2014-09, *Revenue from Contracts with Customers*. The standard will eliminate the transaction- and industry-specific revenue recognition guidance under current U.S. GAAP and replace it with a principle based approach for determining revenue recognition. Public entities are required to apply the revenue recognition standard for annual reporting period beginning on or after December 15, 2016, including interim periods within that annual reporting period. Early application is not permitted. The Company has not yet selected a transition method and is evaluating the effect that the updated standard will have on its consolidated financial statements and related disclosures.

In August 2014, the FASB issued ASU 2014-15, *Presentation of Financial Statements — Going Concern: Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern*. The standard requires an entity's management to evaluate whether there are conditions or events that raise substantial doubt about the entity's ability to continue as a going concern within one year after the date that the financial statements are issued. Public entities are required to apply standards for annual reporting periods ending after December 15, 2016, and interim periods thereafter. Early application is permitted. The Company is evaluating the impact of this standard on its consolidated financial statements.

From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies and adopted by the Company as of the specified effective date. Unless otherwise discussed, the Company believes that the impact of recently issued standards that are not yet effective will not have a material impact on its financial position or results of operations upon adoption.

(4) Inventories

Inventories consist of the following:

	September 30,	December 31,
	2014	2013
	(In thousands)	
Raw materials	\$ 3,525	\$ 2,813
Finished goods	2,824	4,079
Total	<u>\$ 6,349</u>	<u>\$ 6,892</u>

(5) Property, Plant and Equipment, Net

Property, plant and equipment consist of the following:

	September 30,	December 31,	Useful life
	2014	2013	
	(In thousands)		
Construction in progress	\$ 16,209	\$ 6,177	—
Buildings	16,303	16,303	30 years
Machinery and equipment	78,677	77,466	5-10 years
Computer equipment and software	5,505	5,298	3 years
Total	116,694	105,244	
Accumulated depreciation	(50,815)	(43,221)	
Property, plant and equipment, net	<u>\$ 65,879</u>	<u>\$ 62,023</u>	

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Depreciation expense was \$7.6 million and \$7.4 million for the nine months ended September 30, 2014 and 2013, respectively.

Construction in progress totaling \$16.2 million and \$6.2 million at September 30, 2014 and December 31, 2013, respectively, related primarily to capital projects at the Company's manufacturing facility in East Providence, RI.

(6) Accrued Expenses

Accrued expenses consist of the following:

	September 30,	December 31,
	2014	2013
	(In thousands)	
Employee compensation and related taxes	\$ 4,006	\$ 3,926
Other accrued expenses	699	888
Total	<u>\$ 4,705</u>	<u>\$ 4,814</u>

(7) Subordinated Notes

As of December 31, 2013, Subordinated Notes of \$17.3 million were classified as a current liability. In June 2014, the Company used a portion of the net proceeds from the initial public offering discussed in note 2 to repay \$18.8 million of the original principal balance and accrued interest on the Subordinated Notes. As of June 20, 2014, all obligations under the Subordinated Notes had been paid in full.

The Company elected the fair value option for the Subordinated Notes and recorded the instrument at fair value. The fair value of the Subordinated Notes was determined by analysis of the amount to be paid on the notes at the occurrence of certain events in which the Subordinated Notes would be repaid to the noteholders in cash. The probability weighted discounted cash flow analysis utilized assumptions related to the probability of the occurrence of each of the various events and appropriate discount rates for each of the scenarios.

At September 30, 2013, the valuations were calculated at an implied discount of approximately 20% and were weighted as follows: repayment prior to maturity on June 30, 2014, 20%; and repayment at maturity on September 30, 2014, 80%. There would not be a material difference if the weightings were increased or decreased by 10%. At September 30, 2013, the aggregate fair value of the Subordinated Notes was determined to be \$16.5 million, with an aggregate unpaid principal balance totaling \$14.4 million.

At December 31, 2013, the valuations were calculated at an implied discount of approximately 20% and were weighted as follows: repayment prior to maturity on June 30, 2014, 20%; and repayment at maturity on September 30, 2014, 80%. There would not be a material difference if the weightings were increased or decreased by 10%. At December 31, 2013, the aggregate fair value of the Subordinated Notes was determined to be \$17.3 million, with an aggregate unpaid principal balance totaling \$15.9 million.

On June 20, 2014, the aggregate fair value of the Subordinated Notes was determined to be \$18.8 million and the notes were repaid in full.

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The following table presents a roll-forward of the fair value of Level 3 (significant unobservable inputs) Subordinated Notes for the nine months ended September 30, 2014 and 2013 (in thousands):

Balance at December 31, 2013	\$ 17,306
Change in fair value included in interest expense	1,543
Repayment	(18,849)
Balance at September 30, 2014	<u>\$ —</u>
Balance at December 31, 2012	\$ 13,535
Change in fair value included in interest expense	2,994
Balance at September 30, 2013	<u>\$ 16,529</u>

(8) Senior Convertible Notes

Senior Convertible Notes consist of the following:

	September 30,	December 31,
	2014	2013
	(In thousands)	
March 2013 Investor Notes	\$ —	\$ 24,482
March 2013 Arcapita Notes	—	3,653
Total Senior Convertible Notes	<u>\$ —</u>	<u>\$ 28,135</u>

Effective March 28, 2013, the Company entered into a Note and Warrant Purchase Agreement (March 2013 NPA) authorizing the issuance of \$22.5 million of Senior Subordinated Convertible Notes (the March 2013 Investor Notes) and Senior Subordinated Arcapita Notes (the March 2013 Arcapita Notes) (collectively, the Senior Convertible Notes). At each closing under the March 2013 NPA, the Company issued warrants to purchase shares of a newly created Series C Preferred Stock (the Series C) based on the principal balance of Senior Convertible Notes issued to each purchaser. The Company determined that the Series C warrants, which were subject to net share settlement, were equity classified. Collectively, the warrants issued pursuant to the March 2013 NPA were exercisable for Series C shares equal to 85.7% of the then outstanding capital stock of the Company on a fully diluted basis. The warrants had an exercise price of \$0.0001 per share, were immediately exercisable and were scheduled to expire by their terms on March 28, 2023.

Pursuant to side letter agreements, in March and May 2013, holders of \$7.5 million of Convertible Notes (see note 9) issued in November 2012 and January 2013 (the Initial Notes) exchanged their original principal balance for an equivalent principal amount of Senior Convertible Notes (the Exchanged Notes) and a pro-rata share of Series C warrants issued under the March 2013 NPA. The Company accounted for the warrants as a debt issuance cost and recorded an immediate charge for the fair value of the Series C warrants totaling \$5.4 million in other income (expense). Pursuant to the exchange, the holders of the Exchanged Notes received notes senior in preference to the Initial Notes and with an extended maturity date of March 28, 2016.

Given that the terms of the Exchanged Notes were substantially different than the terms of the Initial Notes, the exchange was accounted for as an extinguishment of debt. Upon the exchange, the Company recognized a loss totaling \$5.7 million for the nine month period ended September 30, 2013. This loss represents the difference between (i) the fair value of the Exchanged Notes at reissuance and the fair value of Series C warrants, and (ii) the carrying value of the Initial Notes. The Company elected to

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account for all of the issuances of its Senior Convertible Notes and various embedded derivatives in accordance with ASC Topic 825-10, *Fair Value Option for Financial Liabilities*, whereby the Company initially and subsequently measured this financial instrument in its entirety at fair value, with the changes in fair value recorded each reporting period in interest expense (income).

In March and May 2013, the Company issued an additional \$15.0 million of Senior Convertible Notes. The noteholders received a pro-rata share of Series C warrants for their participation in these financings. The Company accounted for the warrant issuances as a debt issuance cost and recorded an immediate charge for the fair value of the Series C warrants. For the three and nine months ended September 30, 2013, the Company recorded \$0.0 million and \$10.7 million, respectively, as a charge to interest expense related to the warrants (see note 11).

In conjunction with the March 2013 NPA, the Company incurred \$0.9 million of debt issuance costs during the nine months ended September 30, 2013. These debt issuance costs were allocated between the debt and equity instruments related to the transaction. Of the total debt issuance costs, \$0.6 million was allocated to the Senior Convertible Notes and recorded through interest expense, while the remaining \$0.3 million was allocated to the Series C warrants with an offset for additional paid-in capital.

Upon the closing of the Company's IPO discussed in note 2, the outstanding principal and accrued interest on the Senior Convertible Notes were marked to an aggregate fair value of \$39.5 million and automatically converted into 3,591,604 shares of common stock equal to the unpaid principal amount of the Senior Convertible Notes and accrued interest as of June 18, 2014 divided by the Conversion Price, which was 62.5% of the initial public offering price of \$11.00 per share. In addition, all outstanding Series C warrants were automatically net exercised, which, together with the then outstanding shares of Series C preferred stock, converted into 104,734 shares of common stock upon the closing of the Company's IPO.

Fair Value Option

The following table presents the difference between the aggregate fair value and the aggregate unpaid principal balance of the Senior Convertible Notes recorded at fair value at December 31, 2013:

	Aggregate fair value	Aggregate unpaid principal balance	Fair value over unpaid principal
	<u>December 31, 2013</u>	<u>December 31, 2013</u> (In thousands)	<u>balance</u>
March 2013 Investor Notes	\$ 24,482	\$ 19,567	\$ 4,915
March 2013 Arcapita Notes	3,653	2,980	673
Total Senior Convertible Notes	<u>\$ 28,135</u>	<u>\$ 22,547</u>	<u>\$ 5,588</u>

Fair Value Measurements

The change in the fair values of the Senior Convertible Notes during the nine months ended September 30, 2014 and 2013 was determined by utilizing probability weighted discounted cash flow analyses, which took into consideration market and general economic events, as well as the Company's financial results and other data available as of September 30, 2014 and 2013. These analyses

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determined the amount to be paid on the Senior Convertible Notes in either cash or shares at the occurrence of certain events in which the Senior Convertible Notes would be converted into shares of the Company's common stock or would be repaid in cash. The probability weighted discounted cash flow analyses utilized assumptions related to the probability of the occurrence of each of the various events and appropriate discount rates for each of the scenarios as follows:

Potential exit scenario event	December 31, 2013		September 30, 2013	
	Estimated exit date of future event	Estimated probability of future event	Estimated exit date of future event	Estimated probability of future event
IPO scenario 1	06/30/14	45%	06/30/14	45%
IPO scenario 2	03/31/15	5%	03/31/15	5%
Sale scenario 1	06/30/14	15%	06/30/14	15%
Sale scenario 2	03/31/15	15%	03/31/15	15%
Dissolution	09/30/14	5%	06/30/14	5%
Private company	At maturity	15%	At maturity	15%

The above scenarios incorporated a weighted average implied discount rate of 41.7% at both December 31, 2013 and September 30, 2013.

The fair value of the Senior Convertible Notes upon the closing of the Company's IPO was determined to be \$39.5 million.

The following table presents a roll-forward of the fair value of Level 3 (significant unobservable inputs) Senior Convertible Notes for the nine months ended September 30, 2014 and 2013:

	March 2013	March 2013	Total Senior
	Investor Notes	Arcapita Notes (In thousands)	Convertible Notes
Beginning balance as of December 31, 2013	\$ 24,482	\$ 3,653	\$ 28,135
Change in fair value included in interest expense	9,803	1,570	11,373
Conversion of the Senior Convertible Notes	(34,285)	(5,223)	(39,508)
Balance at September 30, 2014	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>

	March 2013	March 2013	Total Senior
	Investor Notes	Arcapita Notes (In thousands)	Convertible Notes
Beginning balance as of December 31, 2012	\$ —	\$ —	\$ —
Issuances of Senior Convertible Notes	13,434	1,536	14,970
Fair value of notes exchanged	6,132	1,444	7,576
Change in fair value included in interest expense	2,931	379	3,310
Balance at September 30, 2013	<u>\$ 22,497</u>	<u>\$ 3,359</u>	<u>\$ 25,856</u>

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Changes in fair value of the Company's Senior Convertible Notes for the nine months ended September 30, 2014 and 2013 was \$11.4 million and \$3.3 million, respectively. Included in interest income (expense) for the nine months ended September 30, 2013 was the charge for the fair value of the Series C warrants of \$10.7 million (see note 11).

(9) Convertible Notes

Convertible Notes consist of the following:

	September 30,	December 31,
	2014	2013
	(In thousands)	
Investor Notes	\$ —	\$ 87,479
Arcapita Notes	—	4,395
Total Convertible Notes	—	91,874
Current maturities of Convertible Notes	—	(435)
Convertible Notes, excluding current portion	\$ —	\$ 91,439

Commencing in June 2011 and concluding in January 2013, the Company issued a total of \$69.9 million of 8% subordinated convertible notes (the Investor Notes) to new and existing investors. The Investor Notes had original maturity dates of June 1, 2014, June 14, 2014 and December 6, 2014, depending on their date of issuance. Commencing in December 2011 and concluding in September 2012, the Company issued a total of \$3.5 million of noninterest bearing convertible notes to an existing investor (the Arcapita Notes, and together with the Investor Notes, the Convertible Notes). The Arcapita Notes were originally set to mature on December 6, 2014. Net proceeds from the Convertible Notes were used to fund the completion of the Company's second production line at the East Providence facility, to begin the construction of a third production line at the East Providence facility and to fund the Company's operating cash requirements.

In conjunction with the execution of the March 2013 NPA (see note 8) on March 28, 2013, the holders of all but approximately \$0.3 million of the original principal amount of the Convertible Notes agreed to extend the original maturity date of their notes by two years. Given that the term of the Convertible Notes, as amended, differed substantially from the original term, the amendment was accounted for as an extinguishment of debt. On March 28, 2013, the Company recognized a gain on extinguishment totaling \$8.9 million, which represents the difference between (i) the fair value of the Convertible Notes at reissuance, and (ii) the fair value of the Convertible Notes just prior to the amendment.

The Company elected to record the Convertible Notes at fair value upon issuance. The aggregate fair value of the Convertible Notes was \$91.9 million as of December 31, 2013.

Upon the closing of the Company's IPO discussed in note 2, the outstanding principal and accrued interest on the Convertible Notes were marked to an aggregate fair value of \$129.0 million and automatically converted into 11,727,430 shares of common stock equal to the unpaid principal amount of the Convertible Notes and accrued interest divided by the Conversion Price, which was 62.5% of the initial public offering price of \$11.00 per share.

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Fair Value Option

The following table presents the difference between the aggregate fair value and the aggregate unpaid principal balance of the Convertible Notes recorded at December 31, 2013:

	Aggregate fair value <u>December 31, 2013</u>	Aggregate unpaid principal balance <u>December 31, 2013</u> (In thousands)	Fair value over unpaid principal <u>balance</u>
Investor Notes	\$ 87,479	\$ 68,264	\$ 19,215
Arcapita Notes	4,395	3,479	916
Total Convertible Notes	<u>\$ 91,874</u>	<u>\$ 71,743</u>	<u>\$ 20,131</u>

Fair Value Measurements

The changes in the fair value of the Convertible Notes for the nine months ended September 30, 2014 and 2013 were determined by utilizing a probability weighted discounted cash flow analysis which took into consideration market and general economic events as well as the Company's financial results and other data available as of December 31, 2013 and September 30, 2013. This analysis determined the amount to be paid on the notes in either cash or shares at the occurrence of certain events in which the Convertible Notes would be converted into shares of the Company's common stock or would be repaid to the noteholders in cash. The probability weighted discounted cash flow analysis utilized assumptions related to the probability of the occurrence of each of the various events and appropriate discount rates for each of the scenarios as follows:

<u>Potential exit scenario event</u>	<u>December 31, 2013</u>		<u>September 30, 2013</u>	
	<u>Estimated exit date of future event</u>	<u>Estimated probability of future event</u>	<u>Estimated exit date of future event</u>	<u>Estimated probability of future event</u>
IPO scenario 1	06/30/14	45%	06/30/14	45%
IPO scenario 2	03/31/15	5%	03/31/15	5%
Sale scenario 1	06/30/14	15%	06/30/14	15%
Sale scenario 2	03/31/15	15%	03/31/15	15%
Dissolution	09/30/14	5%	6/30/14	5%
Private company	At maturity	15%	At maturity	15%

The above scenarios incorporated weighted average implied discount rates of 40.0% at December 31, 2013 and September 30, 2013.

The fair value of the Convertible Notes upon the closing of the Company's IPO was determined to be \$129.0 million.

The following table presents a roll-forward of the fair value of Level 3 (significant unobservable inputs) Convertible Notes for the nine months ended September 30, 2014 and 2013:

	<u>Investor Notes</u>	<u>Arcapita Notes</u> (In thousands)	<u>Total Convertible Notes</u>
Balance at December 31, 2013	\$ 87,479	\$ 4,395	\$ 91,874
Change in fair value included in interest expense	35,036	2,092	37,128
Conversion of Convertible Notes	(122,515)	(6,487)	(129,002)
Balance at September 30, 2014	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>

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	<u>Investor Notes</u>	<u>Arcapita Notes</u> (In thousands)	<u>Total Convertible Notes</u>
Balance at December 31, 2012	\$90,920	\$ 4,168	\$ 95,088
Issuances of Convertible Notes	2,090	1,440	3,530
Fair value of notes exchanged	(5,971)	(1,282)	(7,253)
Gain on extinguishment of Convertible Notes	(8,498)	(400)	(8,898)
Change in fair value included in interest expense	2,087	87	2,174
Balance at September 30, 2013	<u>\$80,628</u>	<u>\$ 4,013</u>	<u>\$ 84,641</u>

Changes in fair value of the Company's Convertible Notes included in interest expense for the nine months ended September 30, 2014 and 2013 was \$37.1 million and \$2.2 million, respectively (see note 11).

(10) Revolving Line of Credit

In March 2011, the Company entered into a \$10.0 million revolving credit facility with Silicon Valley Bank. This facility has been amended at various dates through 2014.

On September 3, 2014, the Company amended its line of credit agreement to extend the maturity date of the facility to August 31, 2016 and increase the maximum amount the Company is permitted to borrow, subject to continued covenant compliance and borrowing base requirements, from \$10 million to \$20.0 million. At the Company's election, the interest rate applicable to borrowings under the amended line of credit may be based on the prime rate or the LIBOR. Prime rate-based rates vary from prime rate plus 0.75% per annum to prime rate plus 1.75% per annum, while LIBOR-based rates vary from LIBOR plus 3.75% per annum to LIBOR plus 4.25% per annum. The amended line of credit is secured by a first priority security interest in all assets of the Company, including those at the East Providence facility, except for certain exclusions.

At September 30, 2014 and December 31, 2013, the Company had drawn \$0.0 million and \$1.0 million, respectively, on the line of credit. The Company also had outstanding letters of credit backed by the line of credit of \$1.7 million and \$1.2 million at September 30, 2014 and December 31, 2013, respectively, which reduce the funds otherwise available to the Company. Based on the available borrowing base, the effective amount available to the Company at September 30, 2014 was \$10.7 million due to the \$1.7 million of outstanding letters of credit. Under the amended line of credit, the Company is required to comply with financial covenants relating to, among other items, free cash flow and liquidity and other non-financial covenants. At September 30, 2014, the Company was in compliance with all such financial covenants.

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(11) Interest Expense

Interest expense (income) consists of the following:

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2014	2013	2014	2013
	(In thousands)		(In thousands)	
Changes in fair value:				
Subordinated Notes	\$—	\$ 744	\$ 1,543	\$ 2,994
Senior Convertible Notes	—	1,854	11,373	3,310
Convertible Notes, net of capitalization	—	5,403	37,095	2,129
Issuance of Series C preferred stock warrants in connection with senior convertible notes	—	—	—	10,677
Debt closing costs	16	—	47	582
Other interest	31	37	167	600
Total interest expense	<u>\$ 47</u>	<u>\$8,038</u>	<u>\$50,225</u>	<u>\$20,292</u>

Debt closing costs and commitment fees, consisting primarily of legal and related fees, associated with the issuance or modification of the Company's Subordinated Notes, Senior Convertible Notes, Convertible Notes, and line of credit are amortized over the term of the debt instrument and recorded in interest expense.

(12) Commitments and Contingencies

Letters of Credit

Pursuant to the terms of its Northborough, Massachusetts facility lease, the Company has been required to provide the lessor with letters of credit securing certain obligations. In addition, the Company has been required to provide certain customers with letters of credit securing obligations under commercial contracts.

The Company had letters of credit outstanding of \$1.7 million at September 30, 2014 and \$1.2 million at December 31, 2013. These letters of credit are secured by the Company's revolving line of credit (see note 10).

Litigation

The Company is, from time to time, a party to litigation that arises in the normal course of its business operations. The Company is not presently a party to any litigation for which it believes a loss is probable requiring an amount to be accrued or a possible loss contingency requiring disclosure.

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(13) Net Income (Loss) Per Share

The computation of basic and diluted net income (loss) attributable to common stockholders per share consists of the following:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2014	2013	2014	2013
(In thousands, except share and per share data)				
Numerator:				
Net income (loss)	\$ (2,412)	\$ (12,703)	\$ (63,607)	\$(30,660)
Deemed dividends on participating preferred stock (inclusive of issuance costs and changes in redemption value, including extinguishment):				
Series B	—	—	—	29,622
Series A	—	—	—	55,543
Total preferred stock deemed dividends	—	—	—	85,165
Earnings attributable to participating convertible preferred stock shareholders and Series C preferred stock warrant holders	—	—	—	(52,309)
Net income (loss) attributable to common stockholders	<u>\$ (2,412)</u>	<u>\$ (12,703)</u>	<u>\$ (63,607)</u>	<u>\$ 2,196</u>
Denominator:				
Weighted average shares outstanding, basic	22,997,060	3,137	8,762,866	3,137
Effect of warrants to purchase common stock	—	—	—	121
Weighted average shares outstanding, diluted	<u>22,997,060</u>	<u>3,137</u>	<u>8,762,866</u>	<u>3,258</u>
Net income (loss) attributable to common stockholders per share, basic	\$ (0.10)	\$(4,049.41)	\$ (7.26)	\$ 700.03
Effect of warrants to purchase common stock	—	—	—	(25.93)
Net income (loss) attributable to common stockholders per share, diluted	<u>\$ (0.10)</u>	<u>\$(4,049.41)</u>	<u>\$ (7.26)</u>	<u>\$ 674.10</u>

During the nine months ended September 30, 2013, the Company recorded dividends associated with its Series B convertible preferred stock (the Series B) and Series A convertible preferred stock (the Series A) totaling \$0.3 million and \$0.6 million, respectively. In conjunction with the execution of the March 2013 NPA, the redemption and dividend rights of the Company's issued and outstanding Series B and Series A were eliminated. In March 2013, the Company recorded decreases in the redemption value of the Company's Series B and Series A of \$30.0 million and \$56.1 million, respectively, reflecting the changes in the fair market value of the Series B and Series A at the time of the March 2013 NPA. Given that the release of the redemption rights substantially impacted the fair value of the Series B and Series A, the elimination of the rights was accounted for as an extinguishment of the securities.

During the nine months ended September 30, 2013, the Company recorded a gain on extinguishment of Series B and Series A of approximately \$86.2 million recorded in additional paid-in capital available to common stockholders. Additionally, the remaining value of the Series B and Series A of \$1.1 million subsequent to extinguishment was recorded in additional paid-in capital upon reclassification from temporary to permanent equity. As a result, the Company included in the computation of basic and diluted net income (loss) per share attributable to common stockholders preferred stock deemed dividends aggregating \$29.6 million and \$55.5 million for the Series B and A, respectively, during the nine months ended September 30, 2013.

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Potential dilutive common shares that were excluded from the computation of diluted net income (loss) attributable to common stockholders per share because they were anti-dilutive consist of the following:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2014	2013	2014	2013
Series C (including Series C warrants) (a)	—	104,734	—	—
Series B (a)	—	2,905	—	—
Series A (a)	—	8,389	—	—
Common stock options	1,031,017	281	1,031,017	281
Restricted common stock units	318,517	—	318,517	—
Common stock warrants	131	—	131	—
Total	<u>1,349,665</u>	<u>116,309</u>	<u>1,349,665</u>	<u>281</u>

(a) Common stock equivalent reflecting conversion.

As of September 30, 2014, there was no dilutive impact of the common stock options, restricted common stock units and common stock warrants. All other potentially dilutive instruments were converted into shares of common stock upon the closing of the Company's IPO on June 18, 2014.

As of September 30, 2013, the Company had \$25.9 million of Senior Convertible Notes and \$84.6 million of Convertible Notes outstanding, which were convertible into common stock upon the occurrence of an IPO at prices that were not determinable until the occurrence of the IPO (see notes 8 and 9). Because the necessary conditions for the conversion of these convertible notes had not been satisfied during the period ended September 30, 2013, the Company excluded these convertible notes from the table above and the calculation of diluted net (loss) income per share for the three and nine months ended September 30, 2013.

(14) Income Taxes

The Company incurred net operating losses and recorded a full valuation allowance against net deferred tax assets for all periods presented. Accordingly, the Company has not recorded a provision for federal or state income taxes.

(15) Related Party Transactions

The Company had the following transactions with related parties:

The Company sold aerogel products to one stockholder of the Company totaling \$0.8 million and \$2.7 million during the three and nine months ended September 30, 2014, respectively. The Company sold aerogel products to three stockholders of the Company totaling \$4.2 million and \$6.3 million during the three and nine months ended September 30, 2013, respectively. The Company had trade receivables with these stockholders of \$0.4 million and \$2.0 million at September 30, 2014 and December 31, 2013, respectively.

An affiliate of a stockholder of the Company is a director of a company that owns an insurance brokerage through which the Company purchases insurance. The Company's premiums for a comprehensive property and casualty insurance program are \$0.9 million and \$0.6 million on an annual basis in 2014 and 2013, respectively. In addition, subsequent to the closing of the Company's IPO in June 2014, the Company obtained through this insurance brokerage a new excess directors and officer's liability insurance policy with an annual premium of approximately \$0.6 million.

In connection with note and warrant financing transactions and amendments, the Company reimbursed stockholders \$0.3 million for legal expenses during the nine months ended September 30, 2013.

Prior to the closing of the Company's IPO in June 2014, the Company had Subordinated Notes, Senior Convertible Notes and Convertible Notes outstanding with several stockholders of the Company (see notes 7, 8 and 9).

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

The following information should be read in conjunction with the unaudited financial information and the notes thereto included in this Quarterly Report on Form 10-Q and the audited financial information and the notes thereto included in the Prospectus that forms a part of our Registration Statement on Form S-1 (File No. 333-195523), which was filed with the Securities and Exchange Commission (the “SEC”) pursuant to Rule 424(b) on June 16, 2014, which we refer to as the Prospectus.

Certain matters discussed in this Quarterly Report on Form 10-Q may be deemed to be forward-looking statements that involve risks and uncertainties. We make such forward-looking statements pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and other federal securities laws. In this Quarterly Report on Form 10-Q, words such as “may,” “will,” “anticipate,” “estimate,” “expects,” “projects,” “intends,” “plans,” “believes” and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) are intended to identify forward-looking statements.

Our actual results and the timing of certain events may differ materially from the results discussed, projected, anticipated, or indicated in any forward-looking statements. We caution you that forward-looking statements are not guarantees of future performance and that our actual results of operations, financial condition and liquidity, and the development of the industry in which we operate may differ materially from the forward-looking statements contained in this Quarterly Report. In addition, even if our results of operations, financial condition and liquidity, and the development of the industry in which we operate are consistent with the forward-looking statements contained in this Quarterly Report, they may not be predictive of results or developments in future periods.

The following information and any forward-looking statements should be considered in light of factors discussed elsewhere in this Quarterly Report on Form 10-Q, including those risks identified under Part II, Item 1A of this Quarterly Report on Form 10-Q, and under the “Risk Factors” section of the Prospectus.

We caution readers not to place undue reliance on any forward-looking statements made by us, which speak only as of the date they are made. We disclaim any obligation, except as specifically required by law and the rules of the SEC, to publicly update or revise any such statements to reflect any change in our expectations or in events, conditions or circumstances on which any such statements may be based, or that may affect the likelihood that actual results will differ from those set forth in the forward-looking statements.

You should read the following discussion and analysis of financial condition and results of operations together with Part I Item 1 “Financial Information” and our financial statements and related notes included elsewhere in this Quarterly Report on Form 10-Q.

Overview

We design, develop and manufacture innovative, high-performance aerogel insulation. We believe our aerogel blankets deliver the best thermal performance of any widely used insulation product available on the market today and provide a combination of performance attributes unmatched by traditional insulation materials. Our end-use customers select our products where thermal performance is critical and to save money, reduce energy use, preserve operating assets and protect workers.

Our insulation is used by oil producers and the owners and operators of refineries, petrochemical plants, LNG facilities, power generating assets and other energy infrastructure. Our Pyrogel and Cryogel product lines were introduced in 2008 and have undergone rigorous technical validation by industry leading end-users and achieved significant market adoption. We also derive product revenue from the building and construction and other end markets. Customers in these markets use our aerogels for applications as diverse as wall systems, military and commercial aircraft, trains, buses, appliances, apparel, footwear and outdoor gear.

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We generate product revenue through the sale of our line of aerogel blankets. We market and sell our products primarily through a sales force based in North America, Europe and Asia. The efforts of our sales force are supported by a small number of sales consultants with extensive knowledge of a particular market or region. Our sales force is responsible for establishing and maintaining customer and partner relationships, delivering highly technical information and ensuring high-quality customer service.

Our salespeople work directly with end-use customers and engineering firms to promote qualification, specification and acceptance of our products. We also rely on an existing and well-established channel of qualified insulation distributors and contractors in more than 30 countries around the world that ensures rapid delivery of our products and strong end-user support. Our salespeople also work to educate insulation contractors about the technical and operating cost advantages of our aerogel blankets.

We also perform research services under contracts with various agencies of the U.S. government, including the Department of Defense and the Department of Energy, and other institutions. Research performed under contract with government agencies and other institutions enables us to develop and leverage technologies into broader commercial applications.

We manufacture our products using our proprietary process and technology at our facility in East Providence, Rhode Island. We have operated the East Providence facility since 2008. We commenced operation of a second production line at this facility at the end of March 2011, which doubled our annual nameplate capacity to 40 million to 44 million square feet of aerogel blankets, depending on product mix. We commenced construction of a third production line in the East Providence facility during the nine months ended September 30, 2014 with a total construction cost estimate of \$30 million. We expect that this third production line will increase our annual nameplate capacity by 10 million to 11 million square feet of aerogel blankets when construction is concluded in the first half of 2015.

Our revenue for the nine months ended September 30, 2014 was \$74.4 million, which represented an increase of 20% from the nine months ended September 30, 2013. Net loss for the nine months ended September 30, 2014 was \$63.6 million and diluted loss per share attributable to common stockholders was \$7.26. Net loss for the nine months ended September 30, 2014 included a total of \$38.8 million of expense or \$4.43 per share attributable to common stockholders related to expenses recorded in connection with the closing of our initial public offering including (i) initial recognition of compensation cost of performance-based stock options of \$5.6 million, and (ii) accretion of convertible notes to final conversion value of \$33.2 million.

Key Metrics and Non-GAAP Financial Measures

We regularly review a number of metrics, including the following key metrics, to evaluate our business, measure our performance, identify trends affecting our business, formulate financial projections and make strategic decisions.

Square Foot Operating Metric

We price our product and measure our product shipments in square feet. We have produced in excess of 100 million square feet of aerogel blankets in the East Providence facility since 2008. We estimate our annual production capacity is currently 40 million to 44 million square feet of aerogel blankets, depending on product mix. We believe the square foot operating metric allows us and our investors to measure the growth in our manufacturing capacity and product shipments on a uniform and consistent basis. The following chart sets forth product shipments associated with recognized revenue in square feet for the periods presented:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2014	2013	2014	2013
Product shipments in square feet	9,355	8,815	28,246	25,035

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Adjusted EBITDA

We use Adjusted EBITDA, a non-GAAP financial measure, as a means to assess our operating performance. We define Adjusted EBITDA as net income (loss) before interest expense, taxes, depreciation, amortization, stock-based compensation expense and other items, from time to time that we do not believe are indicative of our core operating performance, which in previous periods included loss on disposal of assets, gain or loss on extinguishment or exchange of debt, write-off of costs of postponed financing activities and write-off of construction in progress. Adjusted EBITDA is a supplemental measure of our performance that is not presented in accordance with GAAP. Adjusted EBITDA should not be considered as an alternative to net income (loss) or any other measure of financial performance calculated and presented in accordance with GAAP. In addition, our definition and presentation of Adjusted EBITDA may not be comparable to similarly titled measures presented by other companies.

We use Adjusted EBITDA:

- as a measure of operating performance because it does not include the impact of items that we do not consider indicative of our core operating performance;
- for planning purposes, including the preparation of our annual operating budget, to allocate resources to enhance the financial performance of our business; and
- as a performance measure used under our bonus plan.

We also believe that the presentation of Adjusted EBITDA provides useful information to investors with respect to our results of operations and in assessing the performance and value of our business. Various measures of EBITDA are widely used by investors to measure a company's operating performance without regard to items that can vary substantially from company to company depending upon financing and accounting methods, book values of assets, capital structures and the methods by which assets were acquired.

Although measures similar to Adjusted EBITDA are frequently used by investors and securities analysts in their evaluation of companies, we understand that Adjusted EBITDA has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for GAAP, income from operations or an analysis of our results of operations as reported under GAAP. Some of these limitations are:

- Adjusted EBITDA does not reflect our historical cash expenditures or future requirements for capital expenditures or other contractual commitments;
- Adjusted EBITDA does not reflect changes in, or cash requirements for, our working capital needs;
- Adjusted EBITDA does not reflect stock-based compensation expense;
- Adjusted EBITDA does not reflect our tax expense or cash requirements to pay our income taxes;
- Adjusted EBITDA does not reflect our interest expense, or the cash requirements necessary to service interest or principal payments on our debt;
- Although depreciation, amortization and impairment charges are non-cash charges, the assets being depreciated, amortized or impaired will often have to be replaced in the future, and Adjusted EBITDA does not reflect any cash requirements for these replacements; and
- Other companies in our industry may calculate EBITDA or Adjusted EBITDA differently than we do, limiting their usefulness as a comparative measure.

Because of these limitations, our Adjusted EBITDA should not be considered as a measure of discretionary cash available to us to reinvest in the growth of our business or as a measure of cash available for us to meet our obligations.

To properly and prudently evaluate our business, we encourage you to review the GAAP financial statements included elsewhere in this Quarterly Report on Form 10-Q, and not to rely on any single financial measure to evaluate our business.

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The following table presents a reconciliation of net income (loss), the most directly comparable GAAP measure, to Adjusted EBITDA for the periods presented:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2014	2013	2014	2013
	(\$ in thousands)			
Net income (loss)	\$(2,412)	\$(12,703)	\$(63,607)	\$(30,660)
Interest expense (1)	47	8,038	50,225	20,292
Depreciation and amortization	2,513	2,483	7,692	7,431
Loss on disposal of assets	—	—	15	—
Stock-based compensation (2)	1,054	2,916	7,398	3,921
Gain on extinguishment of convertible notes	—	—	—	(8,898)
Loss on exchange of convertible notes	—	—	—	5,697
Write-off of costs associated with postponed public offering	—	—	—	241
Adjusted EBITDA	<u>\$ 1,202</u>	<u>\$ 734</u>	<u>\$ 1,723</u>	<u>\$ (1,976)</u>

- (1) Interest expense consists primarily of fair market value adjustments related to our subordinated notes, senior convertible notes, convertible notes and Series C warrants, subordinated note and convertible note issuance costs, the amortization of the subordinated note debt discount, and imputed interest on our obligations under our cross license agreement with Cabot Corporation.
- (2) Represents non-cash stock-based compensation related to vesting and modifications of stock option grants and vesting of restricted common stock units.

Our Adjusted EBITDA is affected by a number of factors including the mix of aerogel products sold, average selling prices, average material costs, our actual manufacturing costs, the costs associated with and timing of expansions and start-up of additional production capacity, and the amount and timing of operating expenses. As we continue to grow our base of product revenue and to build out manufacturing capacity, we expect increased manufacturing expenses will periodically have a negative impact on Adjusted EBITDA, but will set the framework for improved Adjusted EBITDA moving forward. Accordingly, we expect that our Adjusted EBITDA will vary from period to period as we expand our manufacturing capacity.

Components of Our Results of Operations

Revenue

We recognize product revenue from the sale of our line of aerogel products and research services revenue from the provision of services under contracts with various agencies of the U.S. government and other institutions. Product revenue is recognized upon transfer of title and risk of loss, which is generally upon shipment or delivery.

Cost of Revenue

Cost of revenue for our product revenue consists primarily of materials and manufacturing expense, including direct and indirect labor and manufacturing overhead, including utilities and depreciation. Cost of product revenue is recorded when the related product revenue is recognized. Cost of product revenue also includes stock-based compensation of manufacturing employees and costs of shipping.

Material is our most significant component of cost of product revenue and includes fibrous batting, silica materials and additives. Material costs as a percentage of product revenue vary from product to product due to differences in average selling prices, material requirements, blanket thickness and manufacturing yields. As a result, material costs as a percentage of revenue will vary from period to period due to changes in the mix of aerogel products sold. However, in general, we expect material costs in the aggregate to decline as a percentage of revenue as we seek to achieve higher selling prices, material sourcing improvements and manufacturing yield enhancements for our aerogel products.

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Manufacturing expense, including direct and indirect labor, utilities, depreciation, maintenance and other manufacturing expense, is also a significant component of cost of revenue. As we increase manufacturing capacity in our East Providence facility and a second plant, we expect manufacturing expense as a percentage of product revenue will increase in the near-term following each expansion but will decrease in the long-term with increased revenues supported by the completed capacity expansions.

Cost of revenue for our research services revenue consists primarily of direct labor costs of research personnel committed to funded research and development contracts, third-party consulting, and associated direct material costs. This cost of revenue also includes overhead expenses associated with project resources, engineering tools and supplies. Cost of revenue for our research services revenue is recorded when the related research services revenue is recognized.

Gross Profit

Our gross profit as a percentage of revenue is affected by a number of factors, including the mix between product revenue and research services revenue, the mix of aerogel products sold, average selling prices, average material costs, our actual manufacturing costs and the costs associated with expansions and start-up of production capacity. As we continue to build out our manufacturing capacity, we expect increased manufacturing expenses will periodically have a negative impact on gross profit, but will set the framework for improved gross profit moving forward. Accordingly, we expect our gross profit in absolute dollars and as a percentage of revenue to vary from period to period as we expand our manufacturing capacity. However, in general, following the completion of our capacity expansions, we expect gross profit to improve as a percentage of revenue in the long-term due to increases in manufacturing productivity, increased production volumes, improved manufacturing yields and material purchasing efficiencies.

Operating Expenses

Operating expenses consist of research and development, sales and marketing, and general and administrative expenses. The largest component of our operating expenses is personnel costs, consisting of salaries, benefits, incentive compensation and stock-based compensation. We expect to continue to hire a significant number of new employees in order to support our anticipated growth. In any particular period, the timing of additional hires could materially affect our operating expenses, both in absolute dollars and as a percentage of revenue.

Research and Development Expenses

Research and development expenses consist primarily of expenses for personnel engaged in the development and engineering of next generation aerogel compositions, form factors and manufacturing technologies. These expenses also include testing services, prototype expenses, consulting services, equipment depreciation, facilities costs and related overhead. We expense research and development costs as incurred. We expect to continue to devote substantial resources to the development of new aerogel technology. We believe that these investments are necessary to maintain and improve our competitive position. We expect that our research and development expenses will increase as we continue to invest in additional research and engineering personnel and the infrastructure required in support of their efforts. Accordingly, we expect that our research and development expenses will continue to increase in absolute dollars but decrease as a percentage of revenue in the long-term.

Sales and Marketing Expenses

Sales and marketing expenses consist primarily of personnel costs, incentive compensation, marketing programs, travel and related costs and consulting expenses. We plan to expand our sales force and sales consultants globally to drive anticipated growth in customers and demand for our products. We expect that sales and marketing expenses will continue to increase in absolute dollars but decrease as a percentage of revenue in the long-term.

General and Administrative Expenses

General and administrative expenses consist primarily of personnel costs, legal expenses, consulting and professional services, tax and audit costs, and expenses for our executive, finance, human resources and information technology organizations. We expect general and administrative expenses to continue to increase as we incur additional costs related to operating as a publicly-traded company, including costs of compliance with securities, corporate governance and related regulations, investor relations expenses, increased insurance premiums, including director and officer insurance, and increased audit and legal fees. In addition, we expect to add general and administrative personnel to support the anticipated growth of our business and continued expansion of our manufacturing operations. We expect that general and administrative expenses will continue to increase in absolute dollars but decrease as a percentage of revenue in the long-term.

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Other Income (Expense)

Other income (expense) consists of (i) interest expense consisting primarily of fair market value adjustments to our subordinated notes, convertible notes and the issuance of our Series C warrants, subordinated and convertible note issuance costs, the amortization of the subordinated note debt discount, and other interest, (ii) gains or losses on extinguishment or exchange of subordinated notes and convertible notes and (iii) costs associated with a postponed public offering.

Provision for Income Taxes

We have incurred net losses since inception and have not recorded benefit provisions for U.S. federal income taxes or state income taxes since the tax benefits of our net losses have been offset by valuation allowances due to the uncertainty associated with the utilization of net operating loss carryforwards.

Results of Operations

Three months ended September 30, 2014 compared to the three months ended September 30, 2013

The following tables set forth a comparison of the components of our results of operations for the periods presented:

Revenue

	Three Months Ended September 30,				Change	
	2014		2013			
	Amount	Percentage of Revenue	Amount	Percentage of Revenue	Amount	Percentage
Revenue:						
Product	\$24,589	97%	\$20,833	95%	\$3,756	18%
Research services	848	3%	1,047	5%	(199)	(19)%
Total Revenue	<u>\$25,437</u>	100%	<u>\$21,880</u>	100%	<u>\$3,557</u>	16%

The following chart sets forth product shipments in square feet for the periods presented:

	Three Months Ended September 30,		Change	
	2014	2013	Amount	Percentage
Product shipments in square feet (in thousands)	9,355	8,815	540	6%

Total revenue increased \$3.6 million, or 16%, to \$25.4 million for the three months ended September 30, 2014 from \$21.9 million in the comparable period in 2013, primarily as a result of an increase in product revenue.

Product revenue increased \$3.8 million, or 18%, to \$24.6 million for the three months ended September 30, 2014 from \$20.8 million in the comparable period in 2013. This increase was principally the result of an increase in sales of our aerogel products in the petrochemical sector in Asia and South America and in the offshore oil market. The revenue increase reflects price increases during the last half of 2013 and the first nine months of 2014 and a shift in mix of aerogel products sold toward higher priced products including those sold in the offshore oil market. The average selling price per square foot of our products increased by an effective \$0.27, or 11%, to \$2.63 per square foot for the three months ended September 30, 2014 from \$2.36 per square foot for the comparable period in 2013. In volume terms, product shipments increased 0.5 million square feet, or 6%, to 9.4 million square feet of aerogel products for the three months ended September 30, 2014, as compared to 8.8 million square feet in the comparable period in 2013. The increase in demand during the three months ended September 30, 2014 included increased sales of \$4.9 million for use in a petrochemical facility expansion by a major Asian energy company, and \$1.8 million for use in a project in the Gulf of Mexico by an Asia-based offshore contractor.

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Research services revenue decreased \$0.2 million to \$0.8 million for the three months ended September 30, 2014 from \$1.0 million in the comparable period in 2013. The decrease was primarily due to a reduction in active research contracts with government agencies during 2014. During the three months ended September 30, 2014, we provided research services on five contracts compared to 18 contracts in the comparable period in 2013. This decrease in contracts is principally the result of certain limitations on our eligibility to receive contract awards under federal guidelines and programs due to a variety of factors including the size of our revenues, the number of our employees and the makeup of our ownership.

Product revenue was 97% and 95% of total revenue for the three months ended September 30, 2014 and 2013, respectively. Research services revenue was 3% and 5% of total revenue for the three months ended September 30, 2014 and 2013, respectively. We expect that product revenue will increase as a percentage of our total revenue due to the anticipated growth in demand for our products in the energy infrastructure market.

Cost of Revenue

	Three Months Ended September 30,						Change	
	2014			2013				
	Percentage	Percentage		Percentage	Percentage			
	Amount	of Related Revenue	of Total Revenue	Amount	of Related Revenue	of Total Revenue	Amount	Percentage
			(\$ in thousands)					
Cost of revenue:								
Product	\$19,926	81%	78%	\$17,769	85%	81%	\$2,157	12%
Research services	439	52%	2%	531	51%	2%	(92)	(17%)
Total cost of revenue	<u>\$20,365</u>	80%	80%	<u>\$18,300</u>	84%	84%	<u>\$2,065</u>	11%

Total cost of revenue increased \$2.1 million, or 11%, to \$20.4 million for the three months ended September 30, 2014 from \$18.3 million in the comparable period in 2013. The increase in total cost of revenue was the result of an increase of \$1.7 million in material costs and an increase of \$0.5 million in manufacturing expense to support increased product revenue, offset, in part, by a decrease of \$0.1 million in cost of research services.

Product cost of revenue increased \$2.2 million, or 12%, to \$19.9 million for the three months ended September 30, 2014 from \$17.8 million in the comparable period in 2013. Product cost of revenue as a percentage of product revenue decreased to 81% during the three months ended September 30, 2014 versus 85% during the three months ended September 30, 2013. The favorable impact was the result of improved manufacturing throughput and lower material costs due to the mix of products sold, which was partially offset by an increase of \$0.6 million in compensation related expenses.

We expect that material costs and manufacturing expense as a percentage of product revenue will increase slightly during the remainder of 2014 from the level realized in the three months ended September 30, 2014. We expect this increase to be due to stock based compensation expense related to equity awards granted to employees in September 2014 and an increase in manufacturing expense associated with initial start-up costs leading to operation of a third line in the East Providence facility, offset, in part, by an expected favorable mix of aerogel products sold.

Research services cost of revenue decreased \$0.1 million, or 17%, to \$0.4 million for the three months ended September 30, 2014 from \$0.5 million in the comparable period in 2013. The decrease in cost of research services revenue was due principally to the 19% reduction in research services revenue during the three months ended September 30, 2014.

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Gross Profit

	<u>Three Months Ended September 30,</u>				<u>Change</u>	
	<u>2014</u>		<u>2013</u>			
	Percentage		Percentage			
	<u>Amount</u>	<u>of Revenue</u>	<u>Amount</u>	<u>of Revenue</u>	<u>Amount</u>	<u>Percentage</u>
	(\$ in thousands)					
Gross profit	\$5,072	20%	\$3,580	16%	\$1,492	42%

Gross profit increased \$1.5 million, or 42%, to \$5.1 million for the three months ended September 30, 2014 from \$3.6 million in the comparable period in 2013. The increase is principally the result of a 6% volume increase and an effective 11% price increase supported by improved manufacturing throughput and lower material costs due to the mix of products sold.

Gross profit as a percentage of total revenue increased to 20% of total revenue for the three months ended September 30, 2014 from 16% in the comparable period in 2013. This increase is a result of price increases in the first nine months of 2014 and a shift in mix of aerogel products sold toward higher priced products, as well as the result of improved manufacturing throughput and lower material costs due to the mix of products sold. We expect gross profit as a percentage of total revenue during the remainder of 2014 to decrease slightly due to the start-up costs leading to operation of a third line in the East Providence facility, offset, in part by higher material costs associated with the expected mix of aerogel products sold.

Research and Development Expenses

	<u>Three Months Ended September 30,</u>				<u>Change</u>	
	<u>2014</u>		<u>2013</u>			
	Percentage		Percentage			
	<u>Amount</u>	<u>of Revenue</u>	<u>Amount</u>	<u>of Revenue</u>	<u>Amount</u>	<u>Percentage</u>
	(\$ in thousands)					
Research and development expenses	\$1,258	5%	\$1,387	6%	\$ (129)	(9)%

Research and development expenses decreased \$0.1 million, or 9%, to \$1.3 million for the three months ended September 30, 2014 from \$1.4 million in the comparable period in 2013. This decrease was primarily the result of a reduction in stock-based compensation charges and general payroll expenses of \$0.2 million offset by an increase in incentive compensation of \$0.1 million. We expect that our research and development expenses will increase as we invest in additional research and engineering personnel and the infrastructure required in support of their efforts. However, we expect that research and development expenses will decline as a percentage of total revenue in the long-term due to projected growth in product revenue.

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Sales and Marketing Expenses

	Three Months Ended September 30,				Change	
	2014		2013		Amount	Percentage
	Percentage	Percentage	Percentage	Percentage		
Amount	of Revenue	Amount	of Revenue	Amount	Percentage	
	(\$ in thousands)					
Sales and marketing expenses	\$2,213	9%	\$2,505	11%	\$ (292)	(12)%

Sales and marketing expenses decreased \$0.3 million, or 12%, to \$2.2 million for the three months ended September 30, 2014 from \$2.5 million in the comparable period in 2013. The \$0.3 million decrease was primarily due to a reduction in stock-based compensation charges of \$0.3 million and external sales personnel of \$0.1 million, offset by an increase in general payroll expenses related to an increase in sales personnel. We plan to continue to expand our sales force to support anticipated growth in customers and demand for our products. We expect that sales and marketing expenses will increase in absolute dollars in the long term as we increase sales personnel and our marketing efforts. However, we expect that sales and marketing expenses will decrease as a percentage of total revenue in the long-term due to projected growth in product revenue.

General and Administrative Expenses

	Three Months Ended September 30,				Change	
	2014		2013		Amount	Percentage
	Percentage	Percentage	Percentage	Percentage		
Amount	of Revenue	Amount	of Revenue	Amount	Percentage	
	(\$ in thousands)					
General and administrative expenses	\$3,966	16%	\$4,353	20%	\$ (387)	(9)%

General and administrative expenses, or G&A expenses, decreased \$0.4 million, or 9%, during the three months ended September 30, 2014 compared to the same period in 2013. G&A expenses as a percentage of total revenue decreased to 16% for the three months ended September 30, 2014 from 20% in the comparable period in 2013. The \$0.4 million decrease was primarily the result of a reduction in stock-based compensation charges of \$1.2 million offset by an increase in incentive compensation of \$0.3 million, general payroll expenses of \$0.1 million and \$0.4 million of expenses in professional expenses incurred due to operating as a publicly traded company. We expect that G&A expenses will increase in absolute dollars in the long term as we incur additional expenses to operate as a public company and in support of the anticipated growth of our business. The increased G&A expenses we expect to incur related to operating as a publicly traded company include costs of compliance with securities, corporate governance and related regulations, investor relations expenses, increased insurance premiums, including director and officer insurance, and increased legal and audit fees. In addition, we expect to add general and administrative personnel to support the anticipated growth of our business and continued expansion of our manufacturing operations. However, we expect general and administrative expenses will decline as a percentage of total revenue in the long-term as a result of projected growth in product revenue.

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Other Income (Expense)

	<u>Three Months Ended September 30,</u>				<u>Change</u>	
	<u>2014</u>		<u>2013</u>		<u>Amount</u>	<u>Percentage</u>
	<u>Amount</u>	<u>Percentage</u>	<u>Amount</u>	<u>Percentage</u>		
	<u>of Revenue</u>	<u>of Revenue</u>				
(\$ in thousands)						
Other income (expense):						
Interest expense	\$ (47)	(0)%	\$(8,038)	(37)%	\$(7,991)	(99)%

Other expense of \$0.1 during the three months ended September 30, 2014 was comprised primarily of costs related to our revolving line of credit. The decrease of \$8.0 million in interest expense compared to the comparable period in 2013 was due to the repayment of the subordinated notes and the conversion of the senior convertible notes and convertible notes into equity in June 2014 upon completion of the IPO.

During the three months ended September 30, 2013 we incurred \$8.0 million in interest expense comprised of a change in fair value of \$0.8 million for subordinated notes, \$1.8 million for senior convertible notes and \$5.4 million for convertible notes.

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Nine months ended September 30, 2014 compared to nine months ended September 30, 2013

The following tables set forth a comparison of the components of our results of operations for the periods presented:

Revenue

	Nine Months Ended September 30,		Nine Months Ended September 30,		Change	
	2014		2013			
	Amount	Percentage of Revenue	Amount	Percentage of Revenue	Amount	Percentage
Revenue:						
Product	\$71,975	97%	\$58,804	95%	\$13,171	22%
Research services	2,440	3%	3,059	5%	(619)	(20)%
Total Revenue	<u>\$74,415</u>	100%	<u>\$61,863</u>	100%	<u>\$12,552</u>	20%

The following chart sets forth product shipments in square feet for the periods presented:

	Nine Months Ended September 30,		Change	
	2014	2013	Amount	Percentage
	Product shipments in square feet (in thousands)	28,246	25,035	3,211

Total revenue increased \$12.6 million, or 20%, to \$74.4 million for the nine months ended September 30, 2014 from \$61.9 million in the comparable period in 2013, primarily as a result of an increase in product revenue.

Product revenue increased \$13.2 million, or 22%, to \$72.0 million for the nine months ended September 30, 2014 from \$58.8 million in the comparable period in 2013. This increase was principally the result of an increase in sales of our aerogel products in the Asian and South American petrochemical markets and in the offshore oil market. The revenue increase reflects price increases during the last half of 2013 and the first nine months of September 30, 2014 and a shift in mix of aerogel products sold toward higher priced products. The average selling price of our products increased by \$0.20, or 9%, to \$2.55 per square foot for the nine months ended September 30, 2014 from \$2.35 per square foot in the comparable period during 2013. In volume terms, product shipments increased 3.2 million square feet, or 13%, to 28.2 million square feet of aerogel products for the nine months ended September 30, 2014, as compared to 25.0 million square feet in the comparable period in 2013. The increase in demand during the nine months ended September 30, 2014 included increased sales of \$10.3 million for use in a petrochemical facility expansion by a major Asian energy company, \$3.3 million to a European contractor for various offshore projects and \$1.8 million for use in offshore projects in the Gulf of Mexico by an Asia-based contractor.

Research services revenue decreased \$0.6 million, or 20%, to \$2.4 million for the nine months ended September 30, 2014 from \$3.1 million in the comparable period in 2013. The decrease was primarily due to a reduction in active research contracts during the nine months ended September 30, 2014. During the nine months ended September 30, 2014, we provided research services on nine contracts in contrast to 18 contracts in the comparable period in 2013. This decrease in contracts is principally the result of certain limitations on our eligibility to receive contract awards under federal guidelines and programs due to a variety of factors including the size of our revenues, the number of our employees and the makeup of our ownership.

Product revenue was 97% and 95% of total revenue for the nine months ended September 30, 2014 and 2013, respectively. Research services revenue was 3% and 5% of total revenue for the nine months ended September 30, 2014 and 2013, respectively. We expect that product revenue will increase as a percentage of our total revenue due to the anticipated growth in demand for our products in the energy infrastructure market.

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Cost of Revenue

	Nine Months Ended September 30,						Change	
	2014			2013				
	Amount	Percentage of Related Revenue	Percentage of Total Revenue	Amount	Percentage of Related Revenue	Percentage of Total Revenue	Amount	Percentage
	(\$ in thousands)							
Cost of revenue:								
Product	\$61,316	85%	82%	\$53,256	91%	86%	\$8,060	15%
Research services	<u>1,255</u>	51%	2%	<u>1,457</u>	48%	2%	<u>(202)</u>	(14)%
Total cost of revenue	<u>\$62,571</u>	84%	84%	<u>\$54,713</u>	88%	88%	<u>\$7,858</u>	14%

Total cost of revenue increased \$7.9 million, or 14%, to \$62.6 million for the nine months ended September 30, 2014 from \$54.7 million in the comparable period in 2013. The increase in total cost of revenue was the result of an increase of \$5.2 million in material costs and an increase of \$2.9 million in manufacturing expense to support increased product revenue, offset, in part, by a decrease of \$0.2 million in cost of research services.

Product cost of revenue increased \$8.1 million, or 15%, to \$61.3 million for the nine months ended September 30, 2014 from \$53.3 million in the comparable period in 2013. Product cost of revenue as a percentage of product revenue decreased to 85% during the nine months ended September 30, 2014 from 91% for the comparable period in 2013 as a result of a reduction in material costs and manufacturing expense on a per square foot basis. The reduction in material costs as a percentage of product revenue was the result of improved manufacturing yields and a reduced raw material cost per square foot. The reduction in manufacturing expense as a percentage of product revenue was the result of increased manufacturing capacity utilization and improved manufacturing throughput and efficiency, offset, in part, by an increase of \$1.6 million in employee compensation expenses.

Research services cost of revenue decreased \$0.2 million, or 14%, to \$1.3 million for the nine months ended September 30, 2014 from \$1.5 million in the comparable period in 2013. The decrease in research services cost of revenue was due to a reduction in active research contracts during 2014, offset, in part, by an unfavorable mix of labor and expense required to perform the contracted research.

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Gross Profit

	Nine Months Ended September 30,				Change	
	2014		2013		Amount	Percentage
	Amount	Percentage of Revenue	Amount	Percentage of Revenue		
	(\$ in thousands)					
Gross profit	\$11,844	16%	\$7,150	12%	\$4,694	66%

Gross profit increased \$4.7 million, or 66%, to \$11.8 million for the nine months ended September 30, 2014 from \$7.2 million in the comparable period in 2013. The increase in gross profit of \$4.7 million was principally the result of a reduction in material costs and manufacturing expenses as a percentage of product revenue due to improved manufacturing yields, purchasing efficiency and productivity at our East Providence facility, offset, in part, by an increase in employee compensation expenses of \$1.6 million. In addition, price increases during 2013 and 2014 and the mix of aerogel products sold also contributed to the increase in gross profit during the nine months ended September 30, 2014 as compared to the same period in the prior year. Gross profit as a percentage of total revenue increased to 16% of total revenue for the nine months ended September 30, 2014 from 12% in the comparable period in 2013.

Research and Development Expenses

	Nine Months Ended September 30,				Change	
	2014		2013		Amount	Percentage
	Amount	Percentage of Revenue	Amount	Percentage of Revenue		
	(\$ in thousands)					
Research and development expenses	\$4,461	6%	\$3,801	6%	\$ 660	17%

Research and development expenses increased \$0.7 million, or 17%, to \$4.5 million for the nine months ended September 30, 2014 from \$3.8 million in the comparable period in 2013. This \$0.7 million increase was primarily the result of a \$0.8 million increase in employee compensation expenses including \$0.7 million of stock-based compensation charges and \$0.1 million of incentive compensation expenses, offset by a reduction in outside engineering services of \$0.1 million.

Sales and Marketing Expenses

	Nine Months Ended September 30,				Change	
	2014		2013		Amount	Percentage
	Amount	Percentage of Revenue	Amount	Percentage of Revenue		
	(\$ in thousands)					
Sales and marketing expenses	\$7,871	11%	\$6,984	11%	\$ 887	13%

Sales and marketing expenses increased \$0.9 million, or 13%, to \$7.9 million for the nine months ended September 30, 2014 from \$7.0 million in the comparable period in 2013. The \$0.9 million increase is the result of a \$0.5 million increase in stock-based compensation charges and a \$0.4 million increase in payroll and related costs associated with an increase in sales personnel. Sales and marketing expenses as a percentage of total revenue remained consistent at 11% during both the nine months ended September 30, 2014 and September 30, 2013.

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General and Administrative Expenses

	Nine Months Ended September 30,				Change	
	2014		2013		Amount	Percentage
	Amount	Percentage of Revenue	Amount	Percentage of Revenue		
	(\$ in thousands)					
General and administrative expenses	\$12,894	17%	\$9,693	16%	\$3,201	33%

G&A expenses increased \$3.2 million, or 33%, during the nine months ended September 30, 2014 compared to the comparable period in 2013. G&A expenses as a percentage of total revenue increased to 17% for the nine months ended September 30, 2014 from 16% in the comparable period in 2013. The \$3.2 million increase was primarily the result of an increase in stock based compensation charges of \$2.0 million, an increase in incentive compensation expenses of \$0.3 million, an increase in general payroll expenses of \$0.2 million and an increase in professional services expenses of \$0.7 million resulting from operating as publicly-traded company.

Other Income (Expense)

	Nine Months Ended September 30,				Change	
	2014		2013		Amount	Percentage
	Amount	Percentage of Revenue	Amount	Percentage of Revenue		
	(\$ in thousands)					
Other income (expense):						
Interest expense	\$(50,225)	(67)%	\$(20,292)	(33)%	\$(29,933)	148%
Gain on extinguishment of convertible notes	—	— %	8,898	14%	(8,898)	NA
Loss on exchange of convertible notes	—	— %	(5,697)	(9)%	5,697	NA
Costs associated with postponed public offering	—	— %	(241)	(0)%	241	NA
Total other expense, net	<u>\$(50,225)</u>	(67)%	<u>\$(17,332)</u>	(28)%	<u>\$(32,893)</u>	(190)%

Total other expense was \$50.2 million for the nine months ended September 30, 2014 as compared to \$17.3 million in the comparable period in 2013.

During the nine months ended September 30, 2014, we incurred \$50.2 million in interest expense comprised of changes in fair value of \$1.5 million for the subordinated notes, \$11.4 million for the senior convertible notes and \$37.1 million for the convertible notes, and \$0.2 million in debt closing costs and other interest expense. The changes in fair value of the respective notes were calculated based on the final payment and conversion amounts of the notes into equity at the closing of our initial public offering. The increase of \$32.9 million period over period was due primarily to the accretion of the convertible notes to their final conversion value during the nine months ended September 30, 2014.

During the nine months ended September 30, 2013, we incurred \$20.3 million in interest expense comprised of changes in fair value of the subordinated notes of \$3.0 million, senior convertible notes of \$3.3 million, expense related to recognition of fair value upon issuance of Series C preferred stock warrants of \$10.7 million and interest expense of \$2.1 million on the convertible notes. In addition, we recorded financing costs of \$0.6 million and other interest charges of \$0.6 million to interest expense during the period.

During the nine months ended September 30, 2013, we also incurred a \$5.7 million loss on exchange of convertible notes, an \$8.9 million gain on the extinguishment of convertible notes and \$0.2 million of costs associated with a postponed public offering. No such transactions occurred during the nine months ended September 30, 2014.

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Liquidity and Capital Resources

Overview

We have experienced significant losses and invested significant resources since inception to develop and commercialize our aerogel technology and to build a manufacturing infrastructure capable of supplying aerogel products at the volumes and costs required by our customers. These investments have included research and development and other operating expenses, capital expenditures and investment in working capital balances.

We are currently experiencing rapid revenue growth as we gain share in our target markets. Our current financial forecast anticipates continued revenue growth, increased gross profit and improving cash flows from operations. However, we expect to incur significant capital expenditures through 2017 related to the expansion of our manufacturing capacity to keep pace with expected growth in demand.

We believe that our existing cash balance and available credit will be sufficient (i) to fund the design, development and construction of our third production line in East Providence, and (ii) to fund a portion of the design, development and construction of a second production plant in Europe, Asia or North America. We expect to supplement our cash balance with anticipated cash flows from operations, local government grants, debt financings and potential equity financings to provide the capital required to complete the first production line in our second facility.

Primary Sources of Liquidity

Our principal source of liquidity is currently our cash and cash equivalents. Cash and cash equivalents consist primarily of cash on deposit with banks. As of September 30, 2014, we had \$53.7 million of cash.

From our inception to September 2014, our primary sources of liquidity were funds raised through issuances of common stock, preferred stock, subordinated notes, senior convertible notes and convertible notes to venture capital funds and other private investors. In June 2014, we completed an initial public offering of our common stock and received net proceeds after underwriting discounts and offering expenses of \$74.7 million. Upon the closing of the offering, all principal and accrued interest of our senior convertible notes and our convertible notes automatically converted into shares of our common stock. In addition, we utilized \$19.8 million of the net proceeds of the offering to repay all amounts outstanding under our subordinated notes and revolving credit facility. At September 30, 2014, our total debt obligations were \$0.2 million in capital lease obligations. At September 30, 2014, we also had \$1.7 million of outstanding letters of credit.

In March 2011, we entered into a \$10.0 million revolving credit facility with Silicon Valley Bank. This facility has been amended at various dates through 2014. On September 3, 2014, we amended our line of credit agreement to extend the maturity date of the facility to August 31, 2016 and increase the maximum amount we are permitted to borrow, subject to continued covenant compliance and borrowing base requirements, from \$10 million to \$20.0 million. At our election, the interest rate applicable to borrowings under the amended line of credit may be based on the prime rate or the LIBOR. Prime rate-based rates vary from prime rate plus 0.75% per annum to prime rate plus 1.75% per annum, while LIBOR-based rates vary from LIBOR plus 3.75% per annum to LIBOR plus 4.25% per annum.

Based on the available borrowing base, the effective amount available to us at September 30, 2014 was \$10.7 million due to the \$1.7 million of outstanding letters of credit. As of September 30, 2014, we had no outstanding balance drawn on the line of credit. In addition, we are required to pay a monthly unused revolving line facility fee of 0.5% per annum of the average unused portion of the revolving credit facility. The revolving credit facility has a maturity date of August 31, 2016.

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Analysis of Cash Flow

Net Cash Provided by (Used in) Operating Activities

During the nine months ended September 30, 2014, we generated \$1.9 million net cash from operating activities, as compared to using \$14.0 million in net cash during the comparable period of 2013, an increase of \$15.9 million. This increase was primarily the result of the change in net loss adjusted for non-cash items in the period of \$3.7 million and an increase in cash from changes in operating assets and liabilities of \$12.2 million.

Net Cash Used in Investing Activities

Net cash used in investing activities is primarily related to capital expenditures to support our growth. Net cash used in investing activities for the nine months ended September 30, 2014 and 2013 was \$4.6 million and \$1.7 million, respectively, and included capital expenditures primarily for machinery and equipment to improve the throughput and efficiency and to expand the capacity of our East Providence manufacturing operations.

Net Cash Provided by Financing Activities

Cash flows from financing activities primarily include (i) the net proceeds from the completion of our initial public offering, (ii) issuances of senior convertible notes and convertible notes, (iii) repayments of our subordinated notes, (iv) borrowings and repayments under our line of credit, (v) repayments under capital leases, (vi) issuances of common stock, and (vii) related expenses.

Net cash provided by financing activities for the nine months ended September 30, 2014 totaled \$54.8 million. Financing activities during the period included \$74.7 million of net proceeds from the initial public offering and \$4.5 million for borrowings under the line of credit, offset, in part, by \$18.8 million of repayments on our subordinated notes, \$5.5 million of repayments under the line of credit and other payments of \$0.1 million.

Net cash provided by financing activities for the nine months ended September 30, 2013 totaled \$16.3 million. Financing activities during the period primarily consisted of \$18.5 million of proceeds from the issuance of senior convertible notes offset by \$0.9 million of related financing costs and \$1.3 million of net repayments under the line of credit.

Off Balance Sheet Arrangements

Since inception, we have not engaged in any off balance sheet activities as defined in Item 303(a)(4) of Regulation S-K.

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Recent Accounting Pronouncements

Information regarding new accounting pronouncements is included in note 3 to our unaudited consolidated financial statements contained in Item 1 of this Quarterly Report on Form 10-Q.

Critical Accounting Policies and Estimates

Our financial statements are prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of our financial statements and related disclosures requires us to make estimates, assumptions and judgments that affect the reported amount of assets, liabilities, revenue, costs and expenses and related disclosures. We believe that the estimates, assumptions and judgments involved in these accounting policies have the greatest potential impact on our financial statements; and therefore, we consider these to be our critical accounting policies. Accordingly, we evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions and conditions. See our Prospectus and note 3 to our consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for information about these critical accounting policies, as well as a description of our other significant accounting policies.

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Certain Factors That May Affect Future Results of Operations

The Securities and Exchange Commission, or SEC, encourages companies to disclose forward-looking information so that investors can better understand a company's future prospects and make informed investment decisions. This Quarterly Report on Form 10-Q contains such "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These statements involve known and unknown risks, uncertainties and other important factors which may cause our actual results, performance or achievements to be materially different from any future results, performances or achievements expressed or implied by the forward-looking statements. Forward-looking statements include, but are not limited to, statements about: our beliefs in the appropriateness of our assumptions, the accuracy of our estimates regarding expenses, loss contingencies, future revenues, future profits, capital requirements, and the need for additional financing; the performance of our aerogel blankets; the estimated effects of our third production line on our annual nameplate capacity; our estimates of annual production capacity; our beliefs about the usefulness of the square foot operating metric; our beliefs about the financial metrics that are indicative of our core performance; our beliefs about the usefulness of our presentation of Adjusted EBITDA; our expectations about the effect of manufacturing capacity on financial metrics such as Adjusted EBITDA; our beliefs about the outcome, effects or estimated liabilities of current or potential litigation; our expectations about hiring additional personnel; our plans to devote substantial resources to the development of new aerogel technology; our expectations about product mix; our beliefs about the impact of sales price increases; our expectations about future material costs and manufacturing expenses as a percentage of revenue; our expectations of future gross profit and the effect of manufacturing expenses, manufacturing capacity and productivity on gross profit; our expectations about our resources and other investments in new technology and related research and development activities and associated expenses; our expectations about short and long term (a) research and development (b) general and administrative and (c) sales and marketing expenses; our expectations of continued revenue growth, increased gross profit, and improving cash flows; our expectations about incurring significant capital expenditures in the future; our expectations about the expansion of our workforce and resources and its effect on sales and marketing, general and administrative, and related expenses; our expectations about future product revenue and growth of demand for our products; our expectations about the effect of stock based compensation on various costs and expenses; our expectations about potential sources of future financing; our beliefs about the impact of accounting policies on our financial statements; our beliefs about the effect of interest rates, inflation and foreign currency fluctuations on our results of operations and financial condition; and our beliefs about the expansion of our international operations.

Words such as "may," "will," "anticipate," "estimate," "expects," "projects," "intends," "plans," "believes" and words and terms of similar substance used in connection with any discussion of future operating or financial performance, identify forward-looking statements. All forward-looking statements are management's present expectations of future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those described in the forward-looking statements. These risks include, but are not limited to, those set forth in Part II, Item 1A of this Quarterly Report on Form 10-Q and under the heading "Risk Factors" contained in the Prospectus.

In light of these assumptions, risks and uncertainties, the results and events discussed in the forward-looking statements contained in this Quarterly Report on Form 10-Q might not occur. Stockholders are cautioned not to place undue reliance on the forward-looking statements, which speak only as of the date of this Quarterly Report on Form 10-Q. We are not under any obligation, and we expressly disclaim any obligation, to update or alter any forward-looking statements, whether as a result of new information, future events or otherwise. All subsequent forward-looking statements attributable to Aspen Aerogels, Inc. or to any person acting on its behalf are expressly qualified in their entirety by the cautionary statements contained or referred to in this section.

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Item 3. Quantitative and Qualitative Disclosures About Market Risk.

Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure results primarily from fluctuations in interest rates as well as from inflation. In the normal course of business, we are exposed to market risks, including changes in interest rates which affect our line of credit under our revolving credit facility as well as cash flows. We may also face additional exchange rate risk in the future as we expand our business internationally.

Interest Rate Risk

We are exposed to changes in interest rates in the normal course of our business. At September 30, 2014, we had unrestricted cash of \$53.7 million. These amounts were held for working capital purposes in our operating cash account at a financial institution in the United States. We believe that we do not have any material exposure to changes in the fair value of our cash as a result of changes in interest rates.

As of September 30, 2014, we have no debt outstanding other than capital leases obligations of approximately \$0.2 million with fixed interest rates. In September 2014, we amended our revolving credit agreement to extend the maturity date of the facility to August 31, 2016 and increase the maximum amount we are permitted to borrow, subject to continued covenant compliance and borrowing base requirements, from \$10 million to \$20.0 million. As of September 30, 2014, we had no outstanding balance drawn on the revolving credit facility and outstanding letters of credit of \$1.7 million. At our election, the interest rate applicable to borrowings under the amended line of credit may be based on the prime rate or the LIBOR. Prime rate-based rates vary from prime rate plus 0.75% per annum to prime rate plus 1.75% per annum, while LIBOR-based rates vary from LIBOR plus 3.75% per annum to LIBOR plus 4.25% per annum. Based on the available borrowing base, the effective amount available to us at September 30, 2014 was \$10.7 million due to the \$1.7 million of outstanding letters of credit.

Inflation Risk

Although we expect that our operating results will be influenced by general economic conditions, we do not believe that inflation has had a material effect on our results of operations during the periods presented. However, our business may be affected by inflation in the future.

Foreign Currency Exchange Risk

We are subject to certain risks inherent to operating in a global economy. Principally all of our revenue, receivables, purchases and debts are denominated in U.S. dollars. Although our international operations involving foreign currencies are currently not significant compared to our operations denominated in U.S. dollars, we expect to expand our international operations in the long-term. An expansion of our international operations will increase our potential exposure to fluctuations in foreign currencies.

Item 4. Controls and Procedures.

(a) *Evaluation of Disclosure Controls and Procedures*. We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in the reports that we file or submit under the Securities and Exchange Act of 1934, as amended, or the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and is accumulated and communicated to our management, including our principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

As of September 30, 2014, our management, with the participation of our principal executive officer and principal financial officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act). Our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on such evaluation, our principal executive officer and principal financial officer have concluded, that, as of September 30, 2014, our disclosure controls and procedures were effective to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and is accumulated and communicated to our management, including our principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

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(b) *Changes in Internal Controls* . During the three months ended September 30, 2014, there were no changes in our internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15(d)-15(f) promulgated under the Exchange Act, 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.

We are not currently a party to any material legal proceedings.

Item 1A. Risk Factors.

Risks Related to Our Business and Strategy

We have incurred net losses since our inception, and we may continue to incur net losses in the future and may never reach profitability.

We have a history of losses, and we may not ever achieve profitability. We experienced net losses of \$32.8 million, \$56.1 million and \$47.6 million for the years ended December 31, 2011, 2012 and 2013, respectively, and \$63.6 million for the nine months ended September 30, 2014. As of September 30, 2014, our accumulated deficit was \$396.4 million. We expect to continue to incur operating losses as a result of expenses associated with the continued development and expansion of our business. Our expenses include sales and marketing, research and development, and general and administrative costs. Furthermore, these expenses are not the only factors that may contribute to our net losses. For example, interest expense on any debt that we incur in the future could contribute to our net losses. Any failure to increase revenue or manage our cost structure as we implement initiatives to grow our business could prevent us from achieving profitability, or sustaining profitability if we do achieve it. In addition, our ability to achieve profitability is subject to a number of the risks and uncertainties discussed below, many of which are beyond our control. Failure to become and remain profitable may adversely affect the market price of our common stock and our ability to raise capital and continue operations.

We have yet to achieve positive cash flow, and our ability to generate positive cash flow is uncertain.

To develop and expand our business, we have made significant up-front investments in our manufacturing capacity and incurred research and development, sales and marketing and general and administrative expenses. In addition, our growth has required a significant investment in working capital over the last several years. We have had negative cash flows from operating activities of \$24.2 million, \$25.9 million and \$13.7 million for the years ended December 31, 2011, 2012 and 2013, respectively.

While we had cash provided by operating activities of \$1.9 million for the nine months ended September 30, 2014, we expect that for the foreseeable future our overall cash flow will remain negative. In particular, we will need cash to fund our significant planned future capital expenditures to expand our manufacturing capacity. We will also require significant amounts of working capital to support our growth and we will need to increase our inventories of raw materials and our products as we seek to grow our business. In addition, from time to time, we may have debt maturities that will require cash in order to repay those obligations. We may not achieve sufficient revenue growth to generate positive future cash flow and, therefore, we may need to raise additional capital from investors to achieve our expected growth. An inability to generate positive cash flow for the foreseeable future or raise additional capital on reasonable terms, if at all, may decrease our long-term viability.

We are dependent on a sole manufacturing facility. Any significant disruption to this facility or the failure of either of our two production lines in this facility to operate according to our expectation could have a material adverse effect on our business and results of operations.

We currently operate only two production lines in one manufacturing facility, which is located in East Providence, Rhode Island. Our ability to meet the demands of our customers depends on efficient, proper and uninterrupted operations at this manufacturing facility. In the event of a significant disruption to our sole manufacturing facility or breakdown of either production line, we currently do not expect that we would have sufficient inventory in stock to meet demand until the production lines return to operation.

Power failures or disruptions, the breakdown, failure or substandard performance of equipment, or the damage or destruction of buildings and other facilities due to fire or natural disasters could severely affect our ability to continue our operations. In the event of such disruptions, we are unlikely to find suitable alternatives or may not be able to make needed repairs on a timely basis and at reasonable cost, which could have a material adverse effect on our business and results of operations. In particular, our manufacturing processes include the use of both high temperatures and flammable chemicals, which subjects us to a significant risk of loss resulting from fire.

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We had occasional incidences of fires at our initial facility in Northborough, Massachusetts that preceded our current manufacturing facility in East Providence, Rhode Island. If our manufacturing facility were to be damaged or cease operations, it may reduce revenue, cause us to lose customers and otherwise adversely affect our business. The insurance policies we maintain to cover losses caused by fire or natural disaster, including business interruption insurance, may not adequately compensate us for any such losses and will not address a loss of customers that we expect would result. If our sole manufacturing facility was damaged or destroyed prior to the commencement of operations at a second manufacturing facility, which is currently expected to be 2017, we would be unable to operate our business for an extended period of time and our business and results of operations may be materially adversely affected, potentially even threatening our viability.

If we fail to achieve the increase in production capacity that our continued growth requires in a timely manner, or at all, our growth may be hindered and our business or results of operations may be materially adversely affected.

Our continued growth requires that we increase our production capacity. Consequently, we are engaged in the design, engineering and initial procurement phase of building a third production line in our manufacturing facility in East Providence and also plan to construct a second manufacturing facility located in Europe, Asia or North America. If, for any reason, including our inability to obtain financing, the third production line or the second manufacturing facility should fail to be completed in a timely manner, or at all, or any of the production lines in any future manufacturing facilities do not operate according to our expectations, sales may be impeded, our growth may be hindered and our business or results of operations may be materially adversely affected.

Many factors could delay or prevent the addition of a third production line or the construction of a second manufacturing facility or cause us to reduce the scale or scope of the new facilities, including:

- our inability to obtain financing on favorable terms, or at all;
- design, engineering and construction difficulties or delays;
- our failure or delay in obtaining necessary legal, regulatory and other approvals;
- interruptions in the supply of the necessary equipment, or construction materials or labor or an increase in their price;
- opposition of local interests; and
- natural disasters, accidents, political unrest or unforeseen events.

Many factors could prevent the third production line or the second manufacturing facility from producing at their expected effective or nameplate capacity or could cause us to reduce the scale or scope of the new facilities, including:

- design and engineering failures;
- inability to retain and train a skilled workforce;
- the challenges of operating significantly higher volume equipment at the planned second facility than currently employed at our existing facility in East Providence;
- improper operation of the manufacturing equipment;
- decreases in our manufacturing yields due to an increase in the cost of the materials needed to make our products or the inefficient use of these materials in our manufacturing process;
- strikes or labor disputes; and
- damage to the manufacturing equipment due to design and engineering flaws, construction difficulties or operator error.

Any such expansion will place a significant strain on our senior management team and our financial and other resources. The costs associated with our expansion could exceed our expectations and result in a materially adverse impact on our business, results of operations, financial condition and cash flows.

If we are unable to complete the projects contemplated, the costs incurred in connection with such projects may not be recoverable. For example, during 2013, we redesigned and reduced the planned scale of the third production line. As a result, we reviewed the construction in progress assets associated with the third production line and determined that \$3.0 million had no future use.

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In addition, we concluded that an additional \$0.4 million of construction in progress assets were not utilized or functional. Accordingly, we recorded a \$3.4 million impairment charge during 2013 related to the write-off of construction in progress assets. A similar redesign or reduction in scale could affect the planned third production line or the second manufacturing facility and similar impairments of our assets in the future could harm our financial condition.

If the expected growth in the demand for our products does not follow each of our planned capacity expansions, then our business will be materially adversely affected.

As we pursue our capacity expansion plans, we will incur significant capital expenses and increased levels of manufacturing expenses in anticipation of expected growth in demand for our products. In particular, we expect that these substantial additional expenditures will be made by us significantly in advance of the existence of the level of demand that would ensure the most efficient use of our planned new capacity. As a result, if the expected growth in demand for our products fails to materialize within a reasonable amount of time following each of our planned capacity expansions, then we would suffer decreased levels of cash flow and our financial condition and results of operations would be adversely affected.

We will require significant additional capital to pursue our growth strategy beyond the construction of our third line in our East Providence facility, but we may not be able to obtain additional financing on acceptable terms or at all.

The growth of our business will depend on substantial amounts of additional capital for construction of new production lines or facilities, ongoing operating expenses and continued development of our aerogel product lines. Our capital requirements will depend on many factors, including the rate of our revenue growth, our introduction of new products and enhancements to existing products, and our expansion of sales and marketing and product development activities. In particular, our plans to construct a second manufacturing facility in Europe, Asia or North America are dependent on our ability to secure grants from governments and to raise debt and potentially equity. There is no assurance of our ability to obtain any such type of financing on terms acceptable to us or at all.

In addition, we may consider strategic acquisitions of complementary businesses or technologies to grow our business, which could require significant capital and could increase our capital expenditures related to future operation of the acquired business or technology.

We may not be able to obtain loans or additional capital on acceptable terms or at all. Moreover, our loan and security agreement with Silicon Valley Bank under which we have the ability to borrow up to \$20.0 million contain restrictions on our ability to incur additional indebtedness, which, if not waived, could prevent us from obtaining needed capital. Any future credit facilities or debt instruments would likely contain similar restrictions. We may not be able to obtain bank credit arrangements or effect an equity or debt financing on terms acceptable to us or at all in order to fund our future capacity expansion plans. A failure to obtain additional financing when needed could adversely affect our ability to maintain and grow our business.

The market for insulation products incorporating aerogel blankets is relatively undeveloped and our products may never be widely adopted, which would have a material adverse effect on our business.

The market for insulation products utilizing aerogel blankets is relatively undeveloped. Accordingly, our future results of operation will depend in large part on our ability to gain market share of the global energy infrastructure insulation market. Our ability to gain market share in this market is highly dependent on the acceptance of our products by large, well-established end-users, distributors, contractors and OEMs. The energy infrastructure insulation market has historically been slow to adopt new technologies and products. Most insulation types currently in use in these markets have been in use for over 50 years. In addition, there is a tendency of end-users in some of our markets to opt for the frequently lower short-term costs of traditional insulation materials. If we fail to successfully educate existing and potential end-users, distributors, contractors and OEMs regarding the benefits of our aerogel products, or if existing users of our products no longer rely on aerogel insulation for their insulation needs, our ability to sell our products and grow our business could be limited.

In particular, because we are still often a new supplier to our end-use customers, we may face concerns from these end-use customers about our reliability and our ability to produce our products in a volume sufficient to meet their supply needs. As a result, we may experience a reluctance or unwillingness by existing end-use customers to expand their use of our products and by potential end-use customers to begin using our products. Our products may never reach mass adoption, and changes or advances in technologies could adversely affect the demand for our products.

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A failure to increase, or a decrease in, demand for aerogel insulation products caused by lack of end-user or distribution channel acceptance, technological challenges or competing technologies and products would result in a lower revenue growth rate or decreased revenue, either of which could materially adversely affect our business and results of operations.

Our products are expensive relative to other insulation products, which could make it more difficult for us to grow our revenue and achieve broader adoption of our aerogel products.

While we believe our products have superior performance attributes and may sometimes have the lowest cost on a fully-installed basis or offer life-cycle cost savings, our competitors offer many traditional insulation products that are priced below our products. Our products are expensive relative to other insulation products and end-use customers may not value our products' performance attributes sufficiently to pay their premium price. This could make it more difficult for us to grow our revenue and achieve broader adoption of our aerogel products. In addition, some of the benefits of our products are based on reduced installation time and related labor expense. In regions where labor costs are significantly lower than in the United States and Europe, the cost benefits of reduced installation times may not be adequate to overcome the relatively high price of our products and may make it more difficult for us to grow our revenue in such regions.

Growth has placed significant demands on our management systems and our infrastructure. If we fail to manage our growth effectively, we may be unable to execute our business plan, address competitive challenges and meet applicable product specifications and technical and delivery requirements.

We may be unable to manage our growth. To manage our anticipated future growth, we must continue to:

- improve our existing, and implement additional, managerial capabilities, manufacturing, sales and marketing, and engineering operations, research and development capabilities, regulatory compliance systems and financial control and reporting systems;
- expand our manufacturing and distribution facilities; and
- continue to recruit and train additional qualified personnel.

All of these measures will require significant expenditures and will demand the attention of management. At certain points in the past, significant growth in demand for our product has put our management and manufacturing systems under strain. In addition, the physical expansion of our operations may lead to significant costs and may divert our management and business development resources. Furthermore, we compete for personnel and advisors with other companies and other organizations, many of which are larger and have greater name recognition and financial and other resources than we do. Due to our limited resources, we may not be able to effectively manage the expansion of our operations or recruit and adequately train additional qualified personnel or retain personnel. Any inability to manage growth could result in a loss of existing customers and revenues, delays in the execution of our business plans, and disruption of our operations. If we fail to achieve the necessary level of efficiency in our organization as it grows, our business, results of operations and financial condition would be harmed.

We allocate our operations, sales and marketing, research and development, general and administrative and financial resources based on our business plan, which includes assumptions about current and future orders from customers. However, these factors are uncertain. If our assumptions regarding these factors prove to be incorrect or if competing products gain further acceptance, then actual demand for our aerogel products could be significantly less than the demand we anticipate and we may not be able to sustain our revenue growth or achieve profitability.

From time to time we have had difficulty consistently producing product that meets applicable product specifications and technical and delivery requirements, and such difficulties could expose us to financial, contractual or other liabilities.

Our insulation products are technologically advanced and require a precise and complex manufacturing process. Because of the precision and complexity of this manufacturing process and the high-performance characteristics of our products, from time to time we have had difficulty consistently producing product that meets applicable specifications and technical and delivery requirements, including our, our customers' and the end-user's specifications and requirements. The rapid growth in demand for our products has contributed to this difficulty by putting significant pressure on our management, our personnel and our production facilities. See "Risk Factors — Growth has placed significant demands on our management systems and our infrastructure. If we fail to manage our growth effectively, we may be unable to execute our business plan, address competitive challenges and meet applicable product specifications and technical and delivery requirements." Any failure to meet these product specifications or technical and delivery requirements could result in the termination of existing customer contracts or purchase orders, the elimination or reduction of future purchase orders, the impairment of customer relationships, and the incurrence of financial, contractual or other liabilities. Products that do not meet these specifications or requirements may also expose us to warranty and product liability claims and associated adverse publicity. Any such termination, reduction, impairment, liability or publicity could result in a broader loss of existing customers and revenues and delay the execution of our business plans, disrupt our operations and harm our results of operation and financial condition.

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The markets we serve are subject to general economic conditions and cyclical demand, which could harm our business and lead to significant shifts in our results of operations from quarter to quarter that make it difficult to project long-term performance.

Our results of operations have been, and may in the future be, adversely affected by general economic conditions and the cyclical pattern of certain industries in which our customers and end-users operate. Demand for our products and services depends in large part upon the level of capital and maintenance expenditures by many of our customers and end-users, in particular those in the energy, petrochemical and power generation industries, and firms that design, construct and operate facilities for these industries.

These customers' expenditures historically have been cyclical in nature and vulnerable to economic downturns. In particular, profitability in the energy industry is highly sensitive to supply and demand cycles and commodity prices, which historically have been volatile; and our customers in this industry historically have tended to delay large capital projects, including expensive maintenance and upgrades, during industry downturns. Customer project delays may cause fluctuations in the timing or the amount of revenue earned and our results of operations in a particular period. Prolonged periods of little or no economic growth could decrease demand for oil and gas which, in turn, could result in lower demand for our products and a negative impact on our results of operations and cash flows. In addition, this historically cyclical demand and potential customer project delays may lead to significant shifts in our results of operations from quarter to quarter, which limits our ability to make accurate long-term predictions about our future performance. We estimate that sales to end-use customers in the energy industry accounted for approximately 87% of our 2013 revenues and we expect that they will account for a significant portion of our future revenues.

A sustained downturn in the energy industry, due to reduced energy demand or lower oil and gas prices, could decrease demand for some of our products and services, which could have a material adverse effect on our business, financial condition and results of operations.

Demand for a significant portion of our products and services depends upon the level of capital expenditure by companies in the energy industry, which depends, in part, on energy prices. Prices of oil and gas have been volatile over the past three years, with a moderate increase throughout 2010 and higher volatility from 2011 through 2013. A sustained downturn in the capital expenditures of our customers, whether due to a decrease in the market price of oil and gas or otherwise, may delay projects, decrease demand for our products and services and cause downward pressure on the prices we charge, which, in turn, could have a material adverse effect on our business, financial condition and results of operations. Such downturns, including the perception that they might continue, could have a significant negative impact on the market price of our common stock.

A substantial portion of our revenue comes from sales in foreign countries and we may expand our operations outside of the United States, which subjects us to increased economic, operational and political risks that could increase our costs and make it difficult for us to continue to operate profitably.

A substantial portion of our sales are to shipment destinations outside the United States, including in Canada, Taiwan, Brazil, South Korea, Norway, Japan, Germany, Singapore, India and the United Kingdom. Total revenue generated from outside of the United States, based on our shipment destination or research services location, amounted to \$30.8 million or 67% of total revenue, \$43.5 million or 69% of total revenue, and \$55.9 million or 65% of total revenue, in the years ended December 31, 2011, 2012 and 2013, respectively, and \$39.4 million or 64% of total revenue and \$48.9 million or 66% of total revenue in the nine months ended September 30, 2013 and 2014, respectively. In addition, we may expand our operations outside of the United States, including our manufacturing operations in connection with our planned second manufacturing facility expected to be located in Europe, Asia or North America. As a result, we are subject to a number of risks, including, but not limited to:

- labor rules and collective bargaining arrangements in foreign jurisdictions, in particular in the event that our planned second manufacturing facility is located outside of the United States;
- difficulty in staffing and managing (including ensuring compliance with internal policies and controls) geographically widespread operations;
- the effect of applicable U.S. and foreign tax structures, including tax rates that may be higher than tax rates in the United States or taxes that may be duplicative of those imposed in the United States;
- trade relations between the United States and those foreign countries in which our customers and suppliers have operations, including protectionist measures such as tariffs and import or export licensing requirements;
- general economic and political conditions in each country, which may interfere with, among other things, our supply chain, our customers and all of our activities in a particular location;
- difficulty in the enforcement of contractual obligations in non-U.S. jurisdictions and the collection of accounts receivable from foreign accounts;
- different regulatory regimes in the various countries in which we operate or sell our products;
- inadequate intellectual property protection in foreign countries;

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- the difficulties and increased expense in complying with multiple and potentially conflicting domestic and foreign laws, regulations, product approvals and trade standards, including the U.S. Foreign Corrupt Practices Act and similar anti-bribery laws in non-U.S. jurisdictions, as well as the rules and regulations of the U.S. Office of Foreign Assets Control and similar sanctions laws;
- foreign currency exchange controls, restrictions and fluctuations, which could result in reduced revenue and increased operating expense;
- transportation delays or interruptions; and
- terrorist activity and political unrest, particularly given the use of our products at energy facilities.

Our success will depend in large part on our ability to manage the effects of continued global political or economic uncertainty, especially in our significant geographic markets.

Because of our significant international operations we could be materially adversely affected by violations of the U.S. Foreign Corrupt Practices Act and similar anti-corruption, anti-bribery and anti-kickback laws.

We operate on a global basis, with 68% of our product sales in 2013 being made to destinations outside the United States, including Canada, Europe, Asia, South America and the Middle East. Our business operations and sales in countries outside the United States are subject to anti-corruption, anti-bribery and anti-kickback laws and regulations, including restrictions imposed by the Foreign Corrupt Practices Act, or FCPA, as well as the United Kingdom Bribery Act of 2010, or UK Bribery Act. The FCPA, UK Bribery Act, and similar anti-corruption, anti-bribery and anti-kickback laws in other jurisdictions generally prohibit companies and their intermediaries and agents from making improper payments to government officials or any other persons for the purpose of obtaining or retaining business. We operate and sell our products in many parts of the world that have experienced governmental corruption to some degree and, in certain circumstances, strict compliance with anti-corruption, anti-bribery and anti-kickback laws may conflict with local customs and practices. We train our employees concerning anti-corruption, anti-bribery and anti-kickback laws and have policies in place that prohibit employees from making improper payments. We are implementing internal controls and procedures designed to ensure that we comply with anti-corruption, anti-bribery and anti-kickback laws, rules and regulations and mitigate and protect against corruption risks. We cannot provide assurance that our internal controls and procedures will protect us from reckless, criminal or other acts committed by our employees or third-parties with whom we work. If we are found to be liable for violations of the FCPA or similar anti-corruption, anti-bribery and anti-kickback laws in international jurisdictions, either due to our own acts or out of inadvertence, or due to the acts or inadvertence of others, we could suffer criminal or civil fines or penalties or other repercussions, including reputational harm, which could have a material and adverse effect on our business, results of operations and financial condition.

A failure to comply with export control or economic sanctions laws and regulations could have a material adverse impact on our business, results of operations or financial condition. We may be unable to ensure that our distributors comply with applicable sanctions and export control laws.

We operate on a global basis, with 68% of our product sales in 2013 being made to destinations outside the United States, including Canada, Europe, Asia, South America and the Middle East. We face several risks inherent in conducting business internationally, including compliance with applicable economic sanctions laws and regulations, such as laws and regulations administered by the United States Department of Treasury's Office of Foreign Assets Control, or OFAC, the United States Department of State and the United States Department of Commerce. We must also comply with all applicable export control laws and regulations of the United States and other countries. Violations of these laws or regulations could result in significant additional sanctions including criminal or civil fines or penalties, more onerous compliance requirements, more extensive debarments from export privileges or loss of authorizations needed to conduct aspects of our international business.

In certain countries, we may engage third party agents or intermediaries, such as customs agents, to act on our behalf and if these third party agents or intermediaries violate applicable laws, their actions may result in criminal or civil fines or penalties or other sanctions being assessed against us. We take certain measures designed to ensure our compliance with U.S. export and economic sanctions law and we believe that we have never sold our products to Iran, Cuba, Sudan or Syria through third party agents or intermediaries or made any effort to attract business from any of these countries. However, it is possible that some of our products were sold or will be sold to distributors or other parties that, without our knowledge or consent, re-exported or will re-export such products to these countries. Although none of our non-U.S. distributors are located in, or to our knowledge, conduct business with Iran, Cuba, Sudan or Syria, we may not be successful in ensuring compliance with limitations or restrictions on business with these or other countries subject to economic sanctions. There can be no assurance that we will be in compliance with export control or economic sanctions laws and regulations in the future.

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Any such violation could result in significant criminal or civil fines, penalties or other sanctions and repercussions, including reputational harm that could materially adversely impact our business, results of operations or financial condition.

We rely on sales to a limited number of direct customers, including distributors, contractors and OEMs, for the substantial majority of our revenue, and the loss of one or more significant direct customers or several of our smaller direct customers could materially harm our business. In addition, we understand from our direct customers that a substantial majority of their sales of our products are to a small number of end-use customers and the loss of one or more significant end-use customers or several of our smaller end-use customers could materially harm our business.

A substantial majority of our revenue is generated from sales to a limited number of direct customers, including distributors, contractors and OEMs. For the years ended December 31, 2011, 2012 and 2013, total revenue from our top ten direct customers represented 60%, 59% and 65% of our revenues, respectively, and represented 63% of our revenues for the nine months ended September 30, 2014. In 2011, Enershield Industries Ltd. represented 13% of our total revenue and Aerogel Korea Co., Ltd. represented 10% of our total revenue; in 2012, Distribution International represented 13% of our total revenue; in 2013, Distribution International, Inc. represented 15% of our total revenue and AllTech Consulting Co., Ltd. represented 11% of our total revenue; for the nine months ended September 30, 2013, sales to Distribution International, Inc. and AllTech Consulting Co., Ltd represented 14% and 13% of our total revenue, respectively; and for the nine months ended September 30, 2014, a major Asian energy company and Technip represented 14% and 10% of our total revenue. For each of the periods discussed above, there were no other customers that represented 10% or more of our total revenues. Although the composition of our significant distributors, contractors and OEMs will vary from period to period, we expect that most of our revenues will continue, for the foreseeable future, to come from sales to a relatively small number of direct customers. In addition, we understand from our direct customers that a substantial majority of their sales of our products are to a small number of end-use customers.

Our direct customer concentration also creates risk for accounts receivable exposure. As of September 30, 2014, one of our direct customers accounted for 18% of our accounts receivable.

The majority of our sales to distributors are effected on a purchase order basis. The contracts we enter into with our direct customers generally do not include long-term commitments or minimum volumes that ensure future sales of our products. In addition, we understand that our direct customers' contracts with end-use customers also generally do not include such commitments or minimums. Consequently, our results of operations may fluctuate significantly from period-to-period based on the actions of one or more significant direct customers or end-use customers.

A direct customer may take actions that affect us for reasons that we cannot anticipate or control, such as reasons related to an end-use customer's financial condition, changes in business strategy or operations, the introduction of alternative competing products or as the result of the perceived quality or cost-effectiveness of our products. Our agreements with these direct customers may be cancelled if we fail to meet certain product specifications or materially breach the agreement or for other reasons outside of our control. In addition, our direct customers may seek to renegotiate the terms of current agreements or renewals. The loss of, or a reduction in sales or anticipated sales to, one or more of our significant direct customers or end-use customers or several of our smaller direct customers or end-use customers could have a material adverse effect on our business, financial condition and results of operations.

If we are unable to maintain our technological advantage over our competitors, our business may be adversely affected.

We are researching, developing, manufacturing and selling high-performance aerogel insulation products. Rapid and ongoing changes in technology and product standards could quickly render our products less competitive, or even obsolete, particularly if we fail to continue to improve the performance of our insulation products. We are currently developing new applications for our existing products as well as new aerogel technologies; however, we may not be successful in doing so and new applications or technologies may not be commercially useful. Other companies that are seeking to enhance traditional insulation materials have recently introduced or are developing other emerging and potential insulation technologies. These competitors are engaged in significant development work on these various insulation products. Competing technologies that outperform our insulation in one or more performance attributes could be developed and successfully introduced.

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We are also aware of certain companies that have developed or are developing products using aerogel technology similar to our technology and these or other companies could introduce aerogel products that compete directly with our products and outperform them in one or more performance attributes. As a result of this competition and potential competition, our products may not compete effectively in our target markets.

The energy infrastructure insulation market is highly competitive; if we are unable to compete successfully, we may not be able to increase or maintain our market share and revenues.

We face strong competition primarily from established manufacturers of traditional insulation materials. Large producers of traditional insulation materials, such as Johns Mansville, Saint-Gobain, Knauf Gips, Owens Corning and Rockwool, dominate the insulation market. In addition, we face competition from other companies seeking to develop high-performance insulation materials, including aerogel insulation. For example, Cabot Corporation manufactures, markets and sells a different form of aerogel insulation that is competitive with our products, particularly in the offshore oil and gas sector for use in pipe-in-pipe applications. Many of our competitors are substantially larger and better capitalized than we are and possess greater financial resources. In addition, we are aware of competitors in China that manufacture and market aerogel insulation products. Our competitors could focus their substantial financial resources to develop new or additional competing products or develop products that are more attractive to potential customers than the products that we offer.

Because some insulation manufacturers are substantially larger and better capitalized than we are, they may have the ability to sell their products at substantially lower costs to a large, existing customer base. Our products are expensive relative to other insulation products and end-use customers may not value our products' superior performance attributes sufficiently to pay their premium price. In addition, from time to time we may increase the prices for our products and these price increases may not be accepted by our end-use customers and could result in a decreased demand for our products. Similarly, we may make changes to our products in order to respond to customer demand or to improve their performance attributes and these changes may not be accepted by our end-use customers and could result in a decrease in demand for our products. Any of these competitive factors could make it more difficult for us to attract and retain customers, cause us to lower our prices in order to compete and reduce our market share and revenues, any of which could have a material adverse effect on our financial condition and results of operations.

Negative perceptions regarding the safety or other attributes of our products or a failure or a perceived failure of our products could have a material adverse effect on our results of operations and could make us unable to continue our business.

Given the history of asbestos as an insulation material, we believe that there is an elevated level of attention towards perceived health and safety risks in the insulation industry. As a consequence, it is essential to our existing business and to our future growth that our products are considered safe. Even modest perceptions by existing or potential distributors, contractors or end-use customers in our target markets that our products are not safe could have a critical impact on our ability to sell our products and to continue as a business. There is risk of an actual or perceived failure of our products or other negative perceptions regarding our products, such as perceived health hazards. For example, dust is produced by our products during their installation and use, which increases the likelihood of the perception of hazard. Another example is the potential for material failure in very high temperature applications. Like most insulation products, our Pyrogel XT and XT-E products will normally go through a controlled burn-in process immediately after exposure to very high temperatures. If installed improperly, the burn-in may proceed too rapidly and the material may become damaged. Further, our competitors have in the past, and may in the future, seek to perpetuate such perceptions. We are currently taking steps to educate our distributors, contractors, OEMs and end-use customers on the nature of our products and the proper installation procedures in order to mitigate these risks. Such an event, or the perception of such an event, could quickly result in our direct and end-use customers replacing our products with traditional insulation materials which could have a material adverse effect on our results of operations.

Our activities and operations are subject to numerous health and safety laws and regulations. If we violate such regulations, we could face penalties and fines or be required to curtail or cease operations.

We are subject to numerous health and safety laws and regulations in each of the jurisdictions in which we operate. These health and safety laws and regulations apply to us including with regards to hazardous substances that we use in our manufacturing process and that certain of our products contain. These hazardous substances include titanium dioxide and carbon black, each of which has been determined, in certain forms and at certain levels, to be possibly carcinogenic or otherwise harmful to humans.

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Our processes also require the use of other regulated substances in raw material delivery and manufacturing, including among others, ethanol. These laws and regulations require us to obtain and maintain permits and approvals and implement health and safety programs and procedures to control risks associated with our operations. Compliance with those laws and regulations can require us to incur substantial costs. Moreover, if our compliance programs are not successful, we could be subject to penalties or to revocation of our permits, which may require us to curtail or cease operations of the affected facilities. In particular, the construction of our third production line in our East Providence facility will require us to obtain new permits from various regulatory authorities and if the issuance of such permits was delayed or denied, it would slow or potentially prevent the expansion of our manufacturing capacity. Violations of laws, regulations and permit requirements may also result in criminal sanctions or injunctions.

While we use hazardous substances, including titanium dioxide and carbon black, in forms and at levels that are subject to current rules and regulations, such rules and regulations may become more stringent such that we are required to modify our manufacturing process and such that our customers' use of our products may be impacted. In addition, changes in our production or manufacturing process may result in uses above currently permitted levels. Such uses or changes in rules or regulations could materially adversely affect our business, financial condition and results of operations.

Health and safety laws, regulations and permit requirements may become more stringent or otherwise change. Any such changes could require us to incur materially higher costs than we currently have. Our costs of complying with current and future health and safety laws, regulations and permit requirements, and any liabilities, fines or other sanctions resulting from violations of them, could adversely affect our business, financial condition and results of operations.

Our revenue may fluctuate, which may result in a high degree of variability in our results of operations and make it difficult for us to plan based on our future outlook and to forecast our future performance.

Our revenue may fluctuate from period to period due to a wide variety of factors. Since we rely on sales to a limited number of direct customers and end-use customers, changes in demand from one or more direct customers or end-users can significantly impact our revenue from period to period. In addition, the sales cycles for our products, including their qualification for use, are long and can result in unpredictability in our revenues. We expect to have an increasing percentage of our products sold for use in capital projects, which orders tend to be larger and more sporadic, that will further increase this unpredictability and the difficulty for us in forecasting quarterly or annual performance. Because of these factors, we have a limited basis on which to predict our quarterly revenue. Our profitability from period-to-period may also vary due to the mix of products that we sell in different periods. These factors may result in a high degree of variability in our results of operations and will make it difficult for us to accurately evaluate and plan based on our future outlook and to forecast quarterly or annual performance.

Our results of operations could be adversely affected if our operating expenses incurred do not correspond with the timing of our revenues.

Most of our operating expenses, such as manufacturing facility expenses, employee compensation and research expenses, are either relatively fixed in the short-term or incurred in advance of sales. In addition, our spending levels are based in part on our expectations regarding future revenues. As a result, if revenues for a particular quarter are below expectations, we may not be able to proportionately reduce operating expenses for that quarter. Our reliance on sales to a limited number of direct customers and end-use customers, the length of our sales cycles and the potentially increasing percentage of our products sold for use in capital projects each can cause sporadic demand for our products which would limit our ability to predict future sales. This limitation could result in our being unable to reduce spending quickly enough to compensate for reductions in sales and could therefore adversely affect our results of operations for any particular operating period.

Shortages of the raw materials used in the production of our products, increases in the cost of such materials or disruptions in our supply chain could adversely impact our financial condition and results of operations.

The raw materials used in the production of our products consist primarily of polyester and glass fiber battings, silica precursors and additives. Although we are not dependent on any one supplier, we are dependent on the ability of our third-party suppliers to supply such materials on a timely and consistent basis. While these raw materials are available from numerous sources, they may be subject to fluctuations in availability and price.

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In addition, fluctuations in ethanol prices may affect the cost of silica precursors. Our third-party suppliers may not dedicate sufficient resources to meet our scheduled delivery requirements or our suppliers may not have sufficient resources to satisfy our requirements during any period of sustained demand. Failure of suppliers to supply, delays in supplying or disruptions in the supply chain for our raw materials, or allocations in the supply of certain high demand raw components, could materially adversely affect our ability to meet our delivery schedules on a timely and competitive basis and results of operations.

Fluctuations in the prices of these raw materials could have a material adverse effect on results of operations. Our ability to pass increases in raw material prices on to our customers is limited due to competitive pricing pressure and the time lag between increased costs and implementation of related price increases.

In particular, we purchase silica precursors from several suppliers, mostly pursuant to individual purchase orders and not pursuant to long-term contracts. We do not have a secure, long-term supply of silica precursors. We may not be able to establish arrangements for secure, long-term silica precursors supplies at prices consistent with our current costs or may incur a delay in supply while we seek alternative sources. Any inability to continue to purchase silica precursors pursuant to purchase orders, without long-term agreements in place, or to otherwise establish a long-term supply of silica precursors at prices consistent with our current costs, would have a material adverse effect on our ability to increase our sales and achieve profitability.

If we do not continue to develop and maintain distribution channels for our products and to meet our customers' demand for our products, our results of operations could be adversely affected.

For a significant portion of our revenues, we rely on sales to distributors who then sell our products to end-users in our target markets. Our success depends, in part, on our maintaining satisfactory relationships with these distributors. Our distributors require us to meet expectations of delivery, quality and pricing of our products, at both the distribution channel level and at the level of the end-user of our products. If we fail to meet expected standards, our revenues would decline and this could materially adversely affect our business, results of operations and financial condition. In addition, we have been unable at times to produce sufficient amounts of our products to meet demand from our customers and we may not be able to avoid capacity constraints in the future if demand exceeds our expectations or we fail to bring into operation as planned the third production line at our East Providence facility or the second manufacturing facility to be located in Europe, Asia or North America. If we are unable to deliver our products within such short timeframes, we may be at risk of losing direct or end-use customers. Accordingly, shortfalls in sales could materially adversely affect our business and results of operations.

The qualification process for our products can be lengthy and unpredictable, potentially delaying adoption of our products and incurring significant expense.

Qualification of our products by many of our direct and end-use customers can be lengthy and unpredictable and many of these direct and end-use customers have extended budgeting and procurement processes. This extended sales process requires the dedication of significant time by our personnel and our use of significant financial resources, with no certainty of success or recovery of our related expenses. Furthermore, even after an extensive qualification process, our products may fail to meet the standards sought by our end-use customers and may not be qualified for use by such end-use customers. Such a failure to qualify may result in us losing such companies as end-users of our products, which would cause a decrease in our revenue or revenue growth rate either of which could materially adversely affect our business and results of operations.

We may enter into agreements that may limit our ability to broadly market our products or could involve future obligations, which could make it more difficult for us to commercialize certain of our products and negatively affect our business and results of operations.

In order to commercialize our products, we may enter into commercial arrangements with distributors, OEMs or other customers. These agreements have contained, and may in the future contain, exclusivity, ownership and other terms that may limit our ability to commercialize any products or technology developed in connection with such agreements, including in ways that we do not envision at the time of entering into the agreement. These agreements may contain technical specifications or minimum volumes that must be achieved. However, these agreements may not obligate either party to make any purchases. As a result, our ability to commercialize products in a certain region or for a certain application may be limited and as a consequence our business, financial condition and results of operations could be materially adversely affected.

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We are exposed to the credit risk of some of our direct customers, including distributors, contractors and OEMs, which subjects us to the risk of non-payment for our products.

We distribute our products through a network of distributors, contractors and OEMs, some of which may not be well-capitalized and may be of a lower credit quality. This direct customer network subjects us to the risk of non-payment for our products. Although we have not experienced a significant incidence of non-payment for our products, such non-payments may occur in the future. In addition, during periods of economic downturn in the global economy, our exposure to credit risks from our direct customers may increase, and our efforts to monitor and mitigate the associated risks may not be effective. In the event of non-payment by one or more of our direct customers, our business, financial condition and results of operations could be materially adversely affected.

Our working capital requirements involve estimates based on demand and production expectations and may decrease or increase beyond those currently anticipated, which could harm our results of operations and financial condition.

In order to fulfill the product delivery requirements of our direct and end-use customers, we plan for working capital needs in advance of customer orders. As a result, we base our funding and inventory decisions on estimates of future demand. If demand for our products does not increase as quickly as we have estimated or drops off sharply, our inventory and expenses could rise, and our business and results of operations could suffer. Alternatively, if we experience sales in excess of our estimates, our working capital needs may be higher than those currently anticipated. Our ability to meet this excess customer demand depends on our ability to arrange for additional financing for any ongoing working capital shortages, since it is likely that cash flow from sales will lag behind these investment requirements. In addition, we plan to increase our inventory in order to meet our expected future demand. This would result in an increase in our working capital requirements that could harm our results of operations and financial condition.

Breakdowns, security breaches and other disruptions of our information technology systems could compromise our information and expose us to liability, which would cause our business and reputation to suffer.

In the ordinary course of our business, we collect and store sensitive data, including intellectual property, our proprietary business information and that of our suppliers, customers and business partners, and personally identifiable information. The secure maintenance of this information is critical to our operations and business strategy. Despite our security measures, our information technology and infrastructure may be vulnerable to breakdowns, attacks by hackers or breaches due to employee error, malfeasance or other disruptions. Any such breakdown or breach could compromise our networks and the information stored there could be accessed, publicly disclosed, lost or stolen. There can be no assurance that our management or diligence efforts will prevent such breakdowns or breaches in our systems. Any such access, disclosure or other loss of information could result in legal claims or proceedings, liability under laws that protect the privacy of personal information or other laws, disrupt our operations and damage our reputation, which could adversely affect our business.

We may incur significant costs complying with environmental laws and related claims, and failure to comply with these laws and regulations could expose us to significant liabilities, which could adversely affect our results of operations.

Costs of compliance with regional, national, state and local existing and future environmental laws and regulations could adversely affect our cash flow and results of operations. We are required to comply with numerous environmental laws and regulations and to obtain numerous governmental permits in order to operate our facilities and in connection with the design, development, manufacture and transport of our products and the storage, use, handling and disposal of hazardous substances, including environmental laws, regulations and permits governing air emissions. We may incur significant additional costs to comply with these requirements. If we fail to comply with these requirements, we could be subject to civil or criminal liability, damages and fines, and our operations could be curtailed or suspended. In addition, certain foreign laws and regulations may affect our ability to export products outside of the United States. Existing environmental laws and regulations could be revised or reinterpreted and new laws and regulations could be adopted or become applicable to us or our products, and future changes in environmental laws and regulations could occur. These factors may materially increase the amount we must invest to bring our processes into compliance and impose additional expense on our operations.

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Among the changes to environmental laws and regulations that could occur is the adoption of regulatory frameworks to reduce greenhouse gas emissions, which a number of countries, particularly in the European Union, have adopted, or are considering adopting. These include adoption of cap and trade regimes, carbon taxes, restrictive permitting, increased efficiency standards, and incentives or mandates for renewable energy, any of which could increase the costs of manufacturing our products and increase our compliance costs, which could materially adversely affect our business and results of operations.

In addition, private lawsuits, including claims for remediation of contamination, personal injury or property damage, or actions by regional, national, state and local regulatory agencies, including enforcement or cost-recovery actions, may materially increase our costs. Certain environmental laws make us potentially liable on a joint and several basis for the remediation of contamination at or emanating from properties or facilities we currently or formerly owned or operated or properties to which we arranged for the disposal of hazardous substances. Such liability may require us to pay more than our fair share and could require us to address contamination caused by others. For example, the site of our East Providence facility contains certain levels of contamination caused by prior third-party activities on and near the site. Such contamination remains in place under a state-approved deed restriction, and we are required to comply with such deed restriction and the accompanying soil management plan. In general, the deed restriction prohibits the residential use of the property and the use of groundwater as potable water, and requires the maintenance of engineering controls and annual inspections to help prevent exposure to contaminated soils. The soil management plan requires us to notify the state environmental agency with respect to any soil excavation, stockpiling, sampling and off-site disposal of excavated soil. Although we have not had to make material expenditures to satisfy these requirements to date, in the future, we may incur additional costs to comply with these requirements and failure to do so could disrupt the operation of our facility or could subject us to liability for environmental remediation. We may incur liability relating to the remediation of contamination, including contamination we did not cause.

We may not be able to obtain or maintain, from time to time, all required environmental regulatory approvals. A delay in obtaining any required environmental regulatory approvals or failure to obtain and comply with them could materially adversely affect our business and results of operations.

We may face certain product liability or warranty claims from our products, including from improper installation of our products by third parties. As a consequence, we could lose existing and future business and our ability to develop, market and sell our insulation could be harmed.

The design, development, production and sale of our products involve an inherent risk of product liability claims and associated adverse publicity. We may be named directly in product liability suits relating to our products, even for defects resulting from errors of our distributors, contractors, OEMs or end-use customers. These claims could be brought by various parties, including distributors, contractors, OEMs and other direct end-use customers who are purchasing products directly from us, or end-use customers who purchase our products from our distributors. We could also be named as co-parties in product liability suits that are brought against the distributors, contractors, OEMs and end-use customers. Our products are often installed in our end-use customers' complex and capital intensive facilities in inherently hazardous or dangerous environments, including in the energy, petrochemical and power generation industries, where the potential liability from risk of loss could be substantial. The failure of our products to perform to customer expectations, whether or not because of improper installation, could give rise to warranty claims against us. We are currently taking steps to educate our distributors, contractors, OEMs and end-use customers about the proper installation procedures to mitigate the risk of an uncontrolled burn-in for very high temperature applications of Pyrogel XT and XT-E. However, installation of our products is handled by third parties over whom we have no control and errors or defects in their installation may also give rise to claims against us, diminish our brand or divert our resources from other purposes. Any of these claims, even if without merit, could result in costly litigation or divert management's attention and resources. In addition, many of our products are integrated into the final products of our customers. The integration of our products may entail the risk of product liability or warranty claims based on malfunctions or hazards from both our products and the final products of our customers.

A material product liability claim may seriously harm our results of operations, as well as damage our customer relationships and reputation. Although we carry general liability insurance, our current insurance coverage could be insufficient to protect us from all liability that may be imposed under these types of claims. Insurance coverage is expensive, may be difficult to obtain and may not be available in the future on acceptable terms or at all. Our distributors, contractors, OEMs and end-use customers may not have adequate insurance to cover against potential claims. This insurance may not provide adequate coverage against potential losses, and if claims or losses exceed our liability insurance coverage, we may go out of business. In addition, insurance coverage may become more expensive, which would harm our results of operations.

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Our contracts with U.S. government agencies may subject us to audits, criminal penalties, sanctions and other expenses and fines.

We perform contract research services for U.S. government agencies and our products are sold to customers that may incorporate them into government projects. U.S. government agencies, including the Defense Contract Audit Agency and the Department of Labor, routinely audit government contractors. These agencies review a contractor's compliance with contract terms and conditions, performance under its contracts, cost structure and compliance with applicable laws, regulations and standards. The U.S. government also may review the adequacy of a contractor's systems and policies, including a contractor's purchasing, property, estimating, billing, accounting, compensation and management information systems. Any costs found to be overcharged or improperly allocated to a specific contract or any amounts improperly billed or charged for products or services will be subject to reimbursement to the government. As a government contractor, we are required to disclose to the U.S. government credible evidence of certain violations of law and contract overpayments. If we are found to have participated in improper or illegal activities, we may be subject to civil and criminal penalties and administrative sanctions, including termination of contracts, forfeiture of profits, suspension of payments, fines and suspension or prohibition from doing business with the U.S. government. Any negative publicity related to such contracts, regardless of the accuracy of such publicity, may adversely affect our business or reputation.

Our contracts with U.S. government agencies may not be funded by future appropriations and are subject to modification or termination at any time prior to their completion.

Our contracts with U.S. government agencies are subject to the availability of appropriated funds. The U.S. government funds our contract research work through a variety of funding programs that rely on monies appropriated by Congress. At any point, the availability of funding could change, thus reducing the opportunities for new or continued revenues to us from government contract work. Revenue from contracts with U.S. government agencies constituted 7.0%, 4.8%, 4.7% and 3.3% of total revenue in 2011, 2012, 2013 and the first nine months of 2014, respectively. We expect that our revenue under such contracts will continue to decline due to the recent trend toward tightening of federal spending guidelines and programs.

In addition, under our contracts, the U.S. government generally has the right not to exercise options to extend or expand our contracts and may modify, curtail or terminate the contracts at its convenience. Our government customers may not renew our existing contracts after the conclusion of their terms and we may not be able to enter into new contracts with U.S. government agencies. Any decision by the U.S. government not to exercise contract options or to modify, curtail or terminate our contracts or not to renew our contracts or enter into new contracts with us would adversely affect our revenues.

Our revolving credit facility contains financial and operating restrictions that may limit our access to credit. If we fail to comply with covenants in our revolving credit facility, we may be required to repay our indebtedness thereunder, which may have an adverse effect on our liquidity.

Provisions governing our revolving credit facility impose restrictions on our ability to operate, including, for some of the agreements and instruments, but not for others, our ability to:

- incur additional debt;
- pay dividends and make distributions;
- redeem or repurchase capital stock;
- create liens;
- enter into transactions with affiliates; and
- merge or consolidate with or into other entities.

Our revolving credit facility also contains other customary covenants. We may not be able to comply with these covenants in the future. Our failure to comply with these covenants may result in the declaration of an event of default and could cause us to be unable to borrow funds under our revolving credit facility. In addition to preventing additional borrowings under our revolving credit facility,

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an event of default, if not cured or waived, may result in the acceleration of the maturity of indebtedness outstanding under the revolving credit facility, which would require us to pay all amounts outstanding. Such an event may also lead our lenders to exercise their security interest in our assets, including all of our intellectual property and all of our real property and equipment at our East Providence facility. If an event of default occurs, we may not be able to cure it within any applicable cure period, if at all. If the maturity of our indebtedness is accelerated, we may not have sufficient funds available for repayment or we may not have the ability to borrow or obtain sufficient funds to replace the accelerated indebtedness on terms acceptable to us, or at all.

If we lose key personnel upon whom we are dependent, or if we are unable to successfully recruit and retain skilled employees, we may not be able to manage our operations and meet our strategic objectives.

Our continued success depends to a considerable degree upon the continued services of a small number of our employees with critical knowledge of our products, our manufacturing process, our intellectual property, our customers and our global operations. The loss or unavailability of any of these individuals could harm our ability to execute our business plan, maintain important business relationships and complete certain product development initiatives, which could harm our business. In the event that any of these key individuals leave their employment with us or take new employment with a competitor, our business and results of operations could be materially adversely affected. In addition, our continued success depends upon the availability, contributions, vision, skills, experience and effort of our senior management, financial, sales and marketing, engineering and production teams. We do not maintain “key person” insurance on any of our employees. We have entered into employment agreements with certain members of our senior management team, but none of these agreements guarantee the services of the individual for a specified period of time. All of the agreements with members of our senior management team provide that employment is at-will and may be terminated by the employee at any time and without notice.

Although we do not have any reason to believe that we may lose the services of any our employees with critical knowledge of our products, our manufacturing processes, our customers and our global operations or any of our senior management, financial, sales and marketing, engineering and production teams in the foreseeable future, the loss of the services of any of these individuals might impede our operations or the achievement of our strategic and financial objectives. The loss or interruption of the service of any of these individuals or our inability to attract or retain other qualified personnel or advisors could have a material adverse effect on our business, financial condition and results of operations and could significantly reduce our ability to manage our operations and implement our strategy.

Our ability to use our net operating loss carryforwards may be subject to limitation, which could result in a higher effective tax rate and adversely affect our financial condition and results of operations.

We performed analyses pursuant to Internal Revenue Code Section 382, as well as similar state provisions, in order to determine whether any limitations might exist on the utilization of net operating losses and other tax attributes. Based on these analyses, we determined that it is more likely than not that an ownership change occurred on June 10, 2008, resulting in an annual limitation on the use of our net operating losses and other tax attributes as of such date. Generally, a change of more than 50% in the ownership of a company’s stock, by value, over a three year period constitutes an ownership change for U.S. federal income tax purposes. An ownership change may limit a company’s ability to use its net operating loss carryforwards attributable to the period prior to such change. We also determined that we had built-in gains of \$29.5 million at the date of that ownership change. Built-in gains increase the limitation under the Internal Revenue Code Section 382 to the extent triggered during the five year period subsequent to the date of change, which period ended in June 2013. As a result, the entire \$29.5 million of net operating losses expired unutilized in June 2013.

At September 30, 2014, we had \$173.3 million of net operating losses available to offset future federal income, if any, which expire on various dates through December 31, 2033. We expect that our initial public offering completed on June 18, 2014 resulted in an ownership change and, as a result, we expect a significant portion of these net operating losses will likely expire unutilized.

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Risks Related to Our Intellectual Property

Our inability to protect our intellectual property rights could negatively affect our business and results of operations.

Our ability to compete effectively depends in part upon developing, maintaining and/or protecting intellectual property rights relevant to our aerogel product forms, applications, manufacturing technologies and brand names. We rely principally on a combination of patent protection, trade secret laws, confidentiality and nondisclosure agreements, trademark registrations, common law rights and licensing arrangements to establish and protect the intellectual property rights relevant to our business. However, these measures may not be adequate in every given case to permit us to gain or keep any competitive advantage, particularly in those countries where the laws do not protect our proprietary rights as fully as or where the enforcement tools are weaker or less effective than those in the United States. In particular, since aerogels were developed approximately 80 years ago, there has been a wide range of research, development and publication related to aerogels, which makes it difficult to establish intellectual property rights to many key elements of aerogel technology and to obtain patent protection. Accordingly, much of the general technology that we use in our manufacture of aerogel blankets is not protected by patents.

Where we consider it appropriate, our strategy is to seek patent protection in the United States and other countries on technologies used in or relating to our aerogel product forms, applications and manufacturing technologies. As of September 30, 2014, we had 21 issued U.S. patents and 34 issued foreign patents, including two U.S. patents and one European patent that we co-own with third parties. The issuance of a patent is not conclusive as to its scope, validity or enforceability. Thus, any patent held by us or to be issued to us from a pending patent application, could be challenged, invalidated or held unenforceable in litigation or proceedings before the U.S. Patent and Trademark Office and/or other patent tribunals. Third parties could develop technologies that circumvent the patent protection we have secured. No consistent policy regarding the breadth of patent claims has emerged to date in the United States and the landscape could become more uncertain in view of future rule changes by the United States Patent and Trademark Office, the introduction of patent reform legislation and decisions in patent law cases by the federal courts including the United States Supreme Court.

The patent landscape outside the United States is even less predictable. As a result, the validity and enforceability of patents cannot be predicted with certainty. For example, we are aware of competitors that manufacture and market aerogel insulation products in China, where it may be difficult for us to enforce our intellectual property rights against these or other competitors. In addition, we may fail to apply for patents on important technologies or product candidates in a timely fashion, if at all, and our existing and future patents may not be sufficiently broad to prevent others from practicing our technologies or from developing competing products or technologies, in particular given the long history of aerogel development. Furthermore, third parties could practice our intellectual property rights in territories where we do not have patent protection. Such third parties may then try to import products made using our intellectual property rights into the United States or other countries. Our strategy is to seek registration of trademarks for our brands in many, but not all of the jurisdictions in which we sell our products based on various factors, including our sales volumes in the jurisdiction, our ability to enforce local laws and cost. Our strategy may not be adequate to protect our brands in all circumstances, especially in foreign jurisdictions.

As of September 30, 2014, we had 17 pending U.S. patent applications and 15 pending foreign patent applications, as well as a family of pending foreign patent applications that we co-own with another third party. Our pending patent applications are directed to various enabling technologies for the product forms, applications and manufacturing technologies that support our current business, as well as aspects of products under development or contemplated for the future. The issuance of patents from these applications involves complex legal and factual questions and, thus, we cannot assure you that any of our pending patent applications will result in the issuance of patents to us. The U.S. Patent and Trademark Office, relevant foreign patent offices and other relevant patent tribunals may deny or require significant narrowing of claims in our pending patent applications. Patents issued as a result of any of our pending patent applications may not cover our enabling technology and/or the products or processes that support our current or future business or afford us with significant commercial protection against others with similar technology. Proceedings before the U.S. Patent and Trademark Office could result in adverse decisions as to the priority of our inventions and the narrowing or invalidation of claims in issued patents. In addition, our pending patent applications filed in foreign countries are subject to laws, rules and procedures that differ from those of the United States, and thus foreign patent applications may not be granted even if counterpart United States patents are issued.

Patents covering technologies that are similar or superior to our technologies may be developed or obtained by third parties. We may need to seek licenses to these technologies, which could limit our ability to manufacture our products and have a material adverse effect on our business and results of operations.

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Competitors or other third parties may independently develop and obtain patents covering technologies that are similar or superior to the product forms, applications or manufacturing technologies that we employ. In such event, we may need to obtain licenses for these technologies. However, we may not be able to obtain licenses on reasonable terms, if at all, which could limit our ability to manufacture our current and/or future products and operate our business.

Our contracts with the U.S. government and other third parties could negatively affect our intellectual property rights.

To further our product development efforts, our scientists and engineers work closely with customers, the U.S. government and other third parties to research and develop advancements in aerogel product forms, applications and manufacturing technologies. We have entered into agreements with private third parties and have been awarded numerous research contracts with the U.S. government to independently or jointly research, design and develop new devices and systems that incorporate aerogel material. We also expect to enter into similar private agreements and be awarded similar government contracts in the future. In some instances, the research and development activities that we conduct under contract with the U.S. government and/or with private third parties may produce intellectual property to which we may not have ownership or exclusive rights and will be unable to protect or monetize.

Moreover, when we develop new technologies using U.S. government funding, the government may obtain certain rights in any resulting patents, technical data and/or other confidential and proprietary information, generally including, at a minimum, a non-exclusive license authorizing the U.S. government to use the invention, technical data or software for non-commercial purposes. This federal government funding may limit when and how we can deploy our technology developed under those contracts. In addition, inventions must be reported promptly to the funding agencies, the federal funding must be disclosed in any resulting patent applications, and our rights in such inventions will normally be subject to government license rights, periodic post-contract utilization reporting, foreign manufacturing restrictions and “march-in” rights. March-in rights refer to the right of the U.S. government to require us to grant a license to the technology to a responsible applicant or, if we refuse, the government may grant the license itself. The U.S. government may exercise its march-in rights if it determines that action is necessary because we fail to achieve practical application of any technology developed under contract with the government or because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations or to give preference to United States industry. The U.S. government may also have the right to disclose our confidential and proprietary information to third parties. In addition, failure to comply with all the government contract requirements may result in us losing the patent rights.

Our U.S. government-sponsored research contracts are also subject to audit and require that we provide regular written technical updates on a monthly, quarterly or annual basis, and, at the conclusion of the research contract, a final report on the results of our technical research. Because these reports are generally available to the public, third parties may obtain some aspects of our confidential and proprietary information relating to our product forms, applications and/or manufacturing processes. If we fail to provide these reports or to provide accurate or complete reports, the U.S. government could obtain rights to any intellectual property arising from the related research.

Furthermore, there could be disputes between us and a private third party as to the ownership rights to any inventions that we develop in collaboration with such third party. Any such dispute may cause us to incur substantial costs, and could place a significant strain on our financial resources, divert the attention of management from our core business and harm our reputation.

We rely on trade secrets to protect our technology, and our failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

We rely in part on trade secret protection to protect confidential and proprietary information relating to our technology, particularly where we do not believe patent protection is appropriate or obtainable. We continue to develop and refine the manufacturing technologies used to produce our aerogel products and believe that we have already developed, and will continue to develop, significant know-how related to these technologies. However, trade secrets can be difficult to protect. We may not be able to maintain the secrecy of this information and competitors may develop or acquire equally or more valuable information related to the manufacture of comparable aerogel products. Our strategy for scale-up of commercial production will continue to require us to share confidential and proprietary information with the U.S. government and other third parties. While we take reasonable efforts to protect our trade secrets, our employees, consultants, contractors or scientific and other advisors, or those of our business partners, may intentionally or inadvertently disclose our confidential and proprietary information to competitors. Any enforcement of claims by us that a third party has obtained and is using our trade secrets is expensive, time consuming and uncertain. In addition, foreign courts are sometimes less willing than United States courts to protect trade secrets.

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We require all employees and consultants to execute confidentiality and/or nondisclosure agreements upon the commencement of an employment or consulting arrangement with us, which agreements generally require that all confidential and proprietary information developed by the individual or made known to the individual by us during the course of the individual's relationship with us be kept confidential and not disclosed to third parties. These agreements further generally provide that inventions conceived by the individual in the course of rendering services to us will be our exclusive property. Nevertheless, these agreements may not be honored and our confidential and proprietary information may be disclosed, or these agreements may be unenforceable or difficult to enforce. We also require customers and vendors to execute confidentiality and/or nondisclosure agreements. However, we have not obtained such agreements from all of our customers and vendors. Moreover, some of our customers may be subject to laws and regulations that require them to disclose information that we would otherwise seek to keep confidential. Our confidential and proprietary information may be otherwise disclosed without our authorization or knowledge. Moreover, third parties could reverse engineer our manufacturing processes, independently develop substantially equivalent confidential and proprietary information or otherwise gain access to our trade secrets. Failure to maintain trade secret protection could enable others to produce competing products and adversely affect our competitive business position.

We could become subject to intellectual property litigation that could be costly, limit or invalidate our intellectual property rights, divert time and efforts away from business operation, require us to pay damages and/or otherwise have an adverse material impact on our business.

The success of our business is highly dependent on protecting our intellectual property rights. Unauthorized parties may attempt to copy or otherwise obtain and use our products and/or enabling technology. Policing the unauthorized use of our intellectual property rights is difficult and expensive, as is enforcing these rights against unauthorized use by others. Identifying unauthorized use of our intellectual property rights is difficult because we may be unable to monitor the technologies and/or materials being employed by other parties. The steps we have taken or will take may not prevent unauthorized use of our intellectual property rights, particularly in foreign countries where enforcement of intellectual property rights may be more difficult than in the United States.

Our continued commercial success will also depend in part upon not infringing the patents or violating other intellectual property rights of third parties. We are aware of patents and patent applications generally relating to aspects of our technologies filed by, and issued to, third parties. Our knowledge of the patent landscape with respect to the technologies currently embodied within our aerogel products and the technologies that we practice in manufacturing those products indicates that the third-party patent rights most relevant to our business are those owned by Cabot and licensed to us under the cross license agreement with Cabot. Nevertheless, we cannot determine with certainty whether patents or patent applications of other parties may materially affect our ability to conduct our business. There may be existing patents of which we are unaware that we may inadvertently infringe, resulting in claims against us or our customers. In recent years, Chinese and Japanese entities have filed significantly more application patents related to aerogel products in both their home countries and in foreign countries. These application patents may make it more difficult for OEMs and end-use customers in these countries to use our products in new and different applications, which in turn may limit our ability to penetrate new markets.

In the event that the manufacture, use and/or sale of our products or technologies is challenged, or if our product forms or technologies conflict with patent rights of others or our operations conflict with trademark or similar rights of others, third parties could bring legal actions against us in the United States, Europe or other countries, claiming damages and seeking to enjoin the manufacturing and/or marketing of our products. In addition, it is not possible to predict with certainty what patent claims may arise from pending patent applications of third parties. In the United States, for example, patent prosecution can proceed in secret prior to issuance of a patent, provided such application is not filed in a foreign jurisdiction. For U.S. patent applications that are also filed in foreign jurisdictions, such patent applications will not be published until 18 months from the filing date of the application. As a result, third parties may be able to obtain patents with claims relating to our product forms, applications and/or manufacturing processes which they could attempt to assert against us or our end-users. In either case, litigation may be necessary to enforce, protect or defend our intellectual property rights or to determine the validity and scope of the intellectual property rights of others. Any such litigation could be unsuccessful, cause us to incur substantial costs, divert resources and the efforts of our personnel away from daily operations, harm our reputation and/or result in the impairment of our intellectual property rights. In some cases, litigation may be threatened or brought by a patent holding company (otherwise known as non-practicing entities or patent "trolls") or other adverse patent owner who has no relevant product revenues and against which our patents may provide little or no deterrence. If we are found to infringe any patents, we could be required to:

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- pay substantial monetary damages, including lost profits, reasonable royalties and/or treble damages if an infringement is found to be willful;
- totally discontinue or substantially modify any products or processes that are found to be in violation of another party's intellectual property rights; and/or
- seek a license to continue making and selling our products and/or using our manufacturing processes, which we may not be able to obtain on reasonable terms, if at all, which could significantly increase our operating expenses and/or decrease our revenue.

If our competitors are able to use our technology without payment to us, our ability to compete effectively could be harmed. Our contracts generally indemnify our customers for third-party claims of intellectual property infringement related to our manufacture of the products, and typically up to the amount of the purchase price paid for the product. The expense of defending these claims may adversely affect our results of operations.

Loss of the intellectual property rights that we license from Cabot Corporation would have a material adverse impact on our business.

We have licensed certain intellectual property rights from Cabot under a cross license agreement. These intellectual property rights have been and continue to be critical to the manufacture of our existing products and may also be important to our research, development and manufacture of new products. Any loss of the intellectual property rights granted to us thereunder, including as a result of ineffective protection of such rights by Cabot or a breach of or dispute under the agreement by either party would have a material adverse impact on our financial condition, results of operations and growth prospects, and might prevent us from continuing our business.

Risks Related to Our Common Stock

We have incurred and will continue to incur costs and demands upon management as a result of complying with the laws and regulations affecting public companies in the United States, which may adversely affect our results of operations.

We are subject to the reporting requirements of the Exchange Act that require us to file, among other things, quarterly reports on Form 10-Q and annual reports on Form 10-K. Under Section 302 of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), as a part of each of these reports, our chief executive officer and chief financial officer are required to evaluate and report their conclusions regarding the effectiveness of our disclosure controls and procedures and to certify that they have done so. Effective internal controls are necessary for us to provide reliable financial reports and prevent fraud. In addition, under Section 404 of the Sarbanes-Oxley Act, we will be required to include a report of management on our internal control over financial reporting in our Form 10-K. This requirement will first apply to our Form 10-K for our fiscal year ended December 31, 2015. In addition, upon the later of our second annual report or the first annual report required to be filed with the SEC following the date we are no longer an "emerging growth company" as defined in the JOBS Act, the independent registered public accounting firm auditing our financial statements will be required to attest to and report on the effectiveness of our internal control over financial reporting. The process of improving and documenting our internal controls and complying with Section 404 will be expensive and time consuming, and will require significant attention of management.

Complying with these and other requirements applicable to public companies may place a strain on our personnel, information technology systems and resources and divert management's attention from other business concerns. We may need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge, and we may not be able to do so without incurring additional costs.

These and other requirements may also make it more difficult or more costly for us to obtain certain types of insurance, including directors' and officers' liability insurance. We may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage.

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The impact of these requirements could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, our board committees or as executive officers. Any one of these requirements could have a material adverse effect on our business, financial condition and results of operations.

Because we are a public company, we are obligated to develop and maintain proper and effective internal control over financial reporting. If our internal controls over financial reporting are determined to be ineffective, or if our auditors are otherwise unable to attest to their effectiveness when required, investor confidence in our company, and our common stock price, may be adversely affected.

We will be required, pursuant to Section 404 of the Sarbanes-Oxley Act, to furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting for the first fiscal year beginning after the completion of our initial public offering, which will be for the fiscal year ended December 31, 2015, and in each year thereafter. Our independent registered public accounting firm will not be required to formally attest to the effectiveness of our internal control over financial reporting until the later of our second annual report or the first annual report required to be filed with the SEC following the date we are no longer an “emerging growth company,” as defined in the JOBS Act. These assessments will be required to include disclosure of any material weaknesses identified by our management in our internal control over financial reporting.

Although our independent registered public accounting firm did not complete an audit of internal controls over financial reporting as of December 31, 2013, one significant deficiency in internal controls was identified in connection with the preparation of our financial statements. In light of our becoming a public company, we determined that we had a significant deficiency relating to our need for additional accounting and financial reporting staff. While we have taken actions to remediate this significant deficiency, including hiring external consultants to provide additional resources in connection with the 2013 year-end and hiring an additional full-time financial and accounting staff person during the quarter ended June 30, 2014, we cannot assure you that there will not be material weaknesses or other significant deficiencies in our internal controls in the future.

We are in the very early stages of the costly and challenging process of compiling our system of internal controls over financial reporting and processing documentation necessary to perform the evaluation needed to comply with Section 404. We may discover, and not be able to remediate, future significant deficiencies or material weaknesses. We may not be able to complete our evaluation, testing and any required remediation in a timely fashion, any of which would make us less likely to detect or prevent fraud. During the evaluation and testing process, if we identify one or more material weaknesses in our internal control over financial reporting, we will be unable to assert that our internal controls are effective. If we are unable to assert that our internal controls over financial reporting are effective, we could lose investor confidence in the accuracy and completeness of our financial reports or it could cause us to fail to meet our reporting obligations, which could have a material adverse effect on the price of our common stock. In addition, a delay in compliance with Section 404 could subject us to a variety of administrative sanctions, including SEC action, ineligibility for short form resale registration, the suspension or delisting of our common stock from The New York Stock Exchange, and the inability of registered broker-dealers to make a market in our common stock, which would further reduce our stock price and could harm our business.

We are eligible to be treated as an “emerging growth company” as defined in the JOBS Act, and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies makes our common stock less attractive to investors.

We are an “emerging growth company”, as defined in the JOBS Act. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including:

- not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, as described above;
- reduced disclosure obligations regarding executive compensation in this prospectus and our periodic reports and proxy statements; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

We will remain an emerging growth company until the earliest to occur of (i) the end of the fiscal year for which we report \$1.0 billion or more in annual revenues, (ii) the end of the fiscal year in which the market value of our common stock held by non-affiliates exceeds \$700 million on the last business day of our second fiscal quarter, (iii) our issuance, in a three year period, of more than \$1.0 billion of non-convertible debt, and (iv) December 31, 2019. Even after we no longer qualify as an emerging growth company, we may still qualify as a “smaller reporting company” which would allow us to take advantage of many of the same exemptions from disclosure requirements, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements. We cannot predict if investors find or will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

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The trading market in our common stock has been limited and substantially less liquid than the average trading market for a stock quoted on The New York Stock Exchange.

Since our initial listing on The New York Stock Exchange on June 13, 2014, the trading market in our common stock has been limited and substantially less liquid than the average trading market for companies quoted on the New York Stock Exchange. The quotation of our common stock on The New York Stock Exchange does not assure that a meaningful, consistent and liquid trading market currently exists. We cannot predict whether a more active market for our common stock will develop in the future. An absence of an active trading market could adversely affect our stockholders' ability to sell our common stock at current market prices in short time periods, or possibly at all. An inactive market may also impair our ability to raise capital by selling our common stock and may impair our ability to acquire other companies, products or technologies by using our common stock as consideration. Additionally, market visibility for our common stock may be limited and such lack of visibility may have a depressive effect on the market price for our common stock. As of September 30, 2014, more than 55% of our outstanding shares of common stock was held by our officers, directors, beneficial owners of 5% or more of our securities and their respective affiliates, which adversely affects the liquidity of the trading market for our common stock, in as much as federal securities laws restrict sales of our shares by these stockholders. If our affiliates continue to hold their shares of common stock, there will be limited trading volume in our common stock, which may make it more difficult for investors to sell their shares or increase the volatility of our stock price. In addition, approximately 15,490,845 shares of common stock are currently restricted from resale under securities laws or as a result of lock-up agreements, further limiting the liquidity of our common stock.

We expect that the price of our common stock will fluctuate substantially which could subject us to securities class action litigation and result in substantial losses to our stockholders.

The price of our common stock may fluctuate substantially due to a number of factors, including the following, some of which are beyond our control:

- volume and timing of orders for our products;
- quarterly and yearly variations in our or our competitors' results of operations;
- our announcement or our competitors' announcements regarding new products, product enhancements, significant contracts, number of distributors, acquisitions or strategic investments;
- announcements of technological innovations relating to aerogels, thermal management and energy infrastructure insulation;
- results of operations that vary from the expectations of securities analysts and investors;
- the periodic nature of our sales cycles, in particular for capital projects in the industrial markets;
- our ability to develop, obtain regulatory clearance or approval for and market new and enhanced products on a timely basis;
- future sales of our common stock, including sales by our executive officers, directors and significant stockholders;
- announcements by third parties of significant claims or proceedings against us, including with regards to intellectual property and product liability;
- changes in accounting principles; and
- general U.S. and global economic conditions and other factors, including factors unrelated to our operating performance or the operating performance of our competitors.

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Furthermore, the U.S. stock market has at times experienced extreme volatility that in some cases has been unrelated or disproportionate to the operating performance of particular companies. These broad market and industry fluctuations may adversely affect the market price of our common stock, regardless of our actual operating performance.

In the past, following periods of market volatility, stockholders have instituted securities class action litigation. If we were involved in securities litigation, it could have a substantial cost and divert resources and the attention of our senior management team from our business regardless of the outcome of such litigation.

Securities analysts may not continue coverage of our common stock or may issue negative reports, which may have a negative impact on the market price of our common stock.

The trading market for our common stock relies in part on the research and reports that industry or financial analysts publish about us or our business. Securities analysts may elect not to provide research coverage of our common stock. If securities analysts do not cover our common stock, the lack of research coverage may cause the market price of our common stock to decline. If one or more of the analysts who elects to cover us downgrades our stock, our stock price would likely decline substantially. If one or more of these analysts ceases coverage of us, we could lose visibility in the market, which in turn could cause our stock price to decline. In addition, rules mandated by the Sarbanes-Oxley Act and a global settlement reached in 2003 between the SEC, other regulatory agencies and a number of investment banks have led to a number of fundamental changes in how analysts are reviewed and compensated. In particular, many investment banking firms are required to contract with independent financial analysts for their stock research. It may be difficult for companies such as ours, with smaller market capitalizations, to attract independent financial analysts that will cover our common stock. This could have a negative effect on the market price of our stock.

Our directors, officers and principal stockholders have significant voting power and may take actions that may not be in the best interests of our other stockholders.

As of September 30, 2014, our officers, directors and principal stockholders and their affiliates collectively controlled approximately 55.5% of our outstanding common stock without giving effect to the voting waiver by the Fidelity Funds referenced in the immediately subsequent risk factor. As a result, these stockholders, if they act together, will be able to control the management and affairs of our company and most matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions. This concentration of ownership may have the effect of delaying or preventing a change of control and might adversely affect the market price of our common stock. This concentration of ownership may not be in the best interests of our other stockholders.

As a result of the issuance of shares of our common stock upon conversion of our convertible notes and the reverse stock split at the time of our initial public offering, the percentage of our outstanding shares held by our executive officers on a fully diluted basis (including shares issuable upon exercise of options held by our executive officers) is approximately 0.2%, which is significantly less than the approximately 5.4% it would have been had the initial public offering price of our common stock been at the mid-point of the price range indicated in our preliminary prospectus, subject to completion, dated June 2, 2014 rather than at the actual public offering price of \$11.00 as described in the Prospectus. We have historically used stock options as a means of seeking to align employee incentives with the interests of our stockholders. Given the reduction in the anticipated equity incentive component for our employees as noted above, we granted stock options and restricted stock units to employees in September 2014. As a result of this grant, the percentage of our outstanding shares held by our executive officers on a fully diluted basis increased to 2.9%.

Anti-takeover provisions in our restated certificate of incorporation and restated by-laws, and Delaware law, could delay or discourage a takeover.

Anti-takeover provisions in our restated certificate of incorporation and restated by-laws and Delaware law may have the effect of deterring or delaying attempts by our stockholders to remove or replace management, engage in proxy contests and effect changes in control. The provisions of our charter documents include:

- procedures for advance notification of stockholder nominations and proposals;

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- the inability of our stockholders to call a special meeting of the stockholders and the inability of our stockholders to act by written consent;
- the ability of our board of directors to create new directorships and to fill any vacancies on the board of directors;
- the ability of our board of directors to amend our restated by-laws without stockholder approval; and
- the ability of our board of directors to issue up to 5,000,000 shares of preferred stock without stockholder approval upon the terms and conditions and with the rights, privileges and preferences as our board of directors may determine.

Further, as a result of the agreement we entered into with the Fidelity Funds in June 2014 whereby the Fidelity Funds have waived their right to vote with respect to any shares they or their affiliates possess in excess of 14.9% of our total outstanding shares, it could be more difficult for stockholders to achieve any specific percentage voting threshold. Based on a recent SEC filing by Fidelity Funds on July 10, 2014, we believe the Fidelity Funds hold approximately 29.8% of our common stock and, as a result, approximately 14.9% of our shares of common stock will not be voted for so long as such shares are held by the Fidelity Funds.

In addition, as a Delaware corporation, we are subject to Delaware law, including Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder unless certain specific requirements are met as set forth in Section 203. These provisions, alone or together, could have the effect of deterring or delaying changes in incumbent management, proxy contests or changes in control.

Our restated certificate of incorporation designates a state or federal court located within the State of Delaware as the exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our restated certificate of incorporation provides that, subject to limited exceptions, a state or federal court located within the State of Delaware will be the exclusive forum for (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (3) any action asserting a claim against us arising pursuant to any provision of the Delaware General Corporation Law, our restated certificate of incorporation or our amended and restated by-laws, or (4) any other action asserting a claim against us that is governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock shall be deemed to have notice of and to have consented to the provisions of our restated certificate of incorporation described above. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers and employees. Alternatively, if a court were to find these provisions of our restated certificate of incorporation inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business and financial condition.

Future sales of our common stock or the possibility or perception of such future sales may depress our stock price and impair our ability to raise future capital through the sale of our equity securities.

Our stockholders from prior to our initial public offering (the "Pre-IPO Stockholders") hold a substantial number of shares of our common stock that they will be able to sell in the public market in the near future. A significant portion of these shares are held by a small number of stockholders. Sales by Pre-IPO Stockholders of a substantial number of shares or the perception that these sales could occur, could significantly reduce the market price of our common stock. Substantially all of the remaining shares of our common stock are available for resale in the public market, subject to the restrictions on sale or transfer during the usual 180-day post-initial public offering lockup period. Registration of the sale of these shares of our common stock would permit their sale into the market immediately. As restrictions on resale end or upon registration of any of these shares for resale, the market price of our common stock could drop significantly if the holders of these shares sell them or are perceived by the market as intending to sell them. These sales could also impede our ability to raise future capital.

Moreover, the holders of approximately 15,438,137 shares of common stock, as well as approximately 120 shares underlying certain outstanding warrants to purchase our common stock, have rights, subject to some conditions, to require us to include their shares in registration statements that we may file for ourselves or other stockholders.

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The 15,438,137 registrable shares of common stock outstanding represent approximately 67% of the total number of shares of our common stock outstanding as of September 30, 2014. By exercising their registration rights and selling a large number of shares, these holders could cause the prevailing market price of our common stock to decline.

In addition, because we require additional funds to develop new products and continue to expand our business, we may conduct substantial future offerings of equity securities. Future equity issuances, including future public offerings or future private placements of equity securities and any additional shares issued in connection with acquisitions, will result in further dilution to investors and, as a result, may decrease the market price of our common stock.

We do not intend to pay cash dividends in the foreseeable future and, consequently, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We have never declared or paid cash dividends on our common stock and we do not intend to pay any cash dividends on our common stock in the foreseeable future. We currently expect to retain all available funds and any future earnings for use in the operation and expansion of our business. In addition, the terms of our revolving credit facility restrict our ability to pay dividends and any future credit facilities, loan agreements, debt instruments or other agreements may further restrict our ability to pay dividends. Payments of future dividends, if any, will be at the discretion of our board of directors after taking into account various factors, including our business, results of operations and financial condition, current and anticipated cash needs, plans for expansion and any legal or contractual limitations on our ability to pay dividends. As a result, capital appreciation, if any, of our common stock will be your sole source of potential gain for the foreseeable future.

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

(a) *Unregistered Sales of Equity Securities.* Not applicable.

(b) *Use of Proceeds from Initial Public Offering of Common Stock.* We registered shares of our common stock in connection with our initial public offering pursuant to a registration statement on Form S-1 (File No. 333-195523), which was declared effective by the SEC on June 12, 2014, and a registration statement on Form S-1 (File No. 333-196719) filed pursuant to Rule 462(b) of the Securities Act of 1933, as amended, or the Securities Act.

We received aggregate net proceeds from the offering of approximately \$74.7 million, after deducting \$4.3 million of underwriting discounts and approximately \$3.5 million of offering expenses.

As of September 30, 2014, we have used \$19.8 million of the net proceeds of the offering to repay all amounts outstanding under our subordinated notes and our revolving credit facility and \$2.4 million of the net proceeds of the offering for capital expenditures. The remainder of the net proceeds is held in a deposit account with a major financial institution in North America. We have broad discretion in the use of the net proceeds from our initial public offering and could spend the proceeds in ways that do not improve our results of operations or enhance the value of our stock. There has been no material change in our planned use of the balance of the net proceeds from the offering as described in the Prospectus.

(c) *Purchases of Equity Securities By the Issuer and Affiliated Purchasers.* We did not repurchase any of our equity securities during the quarter ended September 30, 2014.

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Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

(a) Exhibits

- 10.1 Amended and restated loan and security agreement, dated September 3, 2014 and effective as of August 31, 2014, by and between the Company and Silicon Valley Bank (previously filed as Exhibit 10.1 to the Current Report on Form 8-K filed on September 9, 2014 (File No. 001-36481) and incorporated herein by reference).
- 10.2+ 2014 employee, director and consultant equity incentive plan (previously filed as Exhibit 99.10 to the Registration Statement on Form S-8 filed on August 13, 2014 (File No. 333-198124) and incorporated herein by reference).
- 10.3+ Form of restricted stock unit agreement for executive officers under 2014 employee, director and consultant equity incentive plan.
- 10.4+ Form of restricted stock agreement for directors under 2014 employee, director and consultant equity incentive plan (previously filed as Exhibit 10.2.3 to Amendment No. 1 to the Registration Statement on Form S-1 filed on May 14, 2014 as the form of restricted stock agreement under 2014 employee, director and consultant equity incentive plan (File No. 333-195523) and incorporated herein by reference under its revised name).
- 31.1 Certification of principal executive officer under Section 302(a) of the Sarbanes-Oxley Act of 2002.
- 31.2 Certification of principal financial officer under Section 302(a) of the Sarbanes-Oxley Act of 2002.
- 32 Certifications of the principal executive officer and the principal financial officer under Section 906 of the Sarbanes-Oxley Act of 2002.
- 101 The following materials from Aspen Aerogels, Inc.'s Quarterly Report on Form 10-Q for the quarter ended September 30, 2014, formatted in XBRL (eXtensible Business Reporting Language): (i) the Consolidated Balance Sheets (unaudited) as of September 30, 2014 and December 31, 2013, (ii) the Consolidated Statements of Operations (unaudited) for the three and nine months ended September 30, 2014 and 2013, (iii) the Consolidated Statements of Cash Flows (unaudited) for the nine months ended September 30, 2014 and 2013, and (iv) the Notes to Consolidated Financial Statements (unaudited).

+ Management contract or compensatory plan or arrangement.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

ASPEN AEROGELS, INC.

Date: November 7, 2014

By: /s/ Donald R. Young

Donald R. Young
President and Chief Executive Officer
(principal executive officer)

Date: November 7, 2014

By: /s/ John F. Fairbanks

John F. Fairbanks
Vice President, Chief Financial Officer and Treasurer
(principal accounting and financial officer)

Restricted Stock Unit No. _____

ASPEN AEROGELS, INC.

Restricted Stock Unit Award Grant Notice for Employees, Directors and Consultants
 Restricted Stock Unit Award Grant under the Company's
 2014 Employee, Director and Consultant Equity Incentive Plan

1. Name and Address of Participant: _____

2. Date of Grant of Restricted Stock Unit Award: _____
3. Maximum Number of Shares underlying Restricted Stock Unit Award: _____
4. Vesting of Award: [This Restricted Stock Unit Award shall vest in [_____] installments (provided that the number of shares vesting on each date shall be rounded down to the nearest whole number, whilst the number of shares vesting on the final vesting date shall be the remaining unvested balance of the Shares) as follows provided the Participant is an Employee, director or Consultant of the Company or of an Affiliate on the applicable vesting date:]

[Insert Vesting Schedule]

[Notwithstanding the foregoing vesting schedule, 100% of the then unvested portion of this Restricted Stock Unit Award shall vest in the event of a Change of Control, unless the Participant receives an offer to remain employed by the Company in the position specified in his or her employment agreement (and lacking one, in the position held by such person immediately prior to the Change of Control) (or equivalent position) at a comparable rate of compensation, bonus, benefits and other material terms as contained herein for at least two years following the Change of Control event. In addition, 100% of the then unvested portion of this Restricted Stock Unit Award shall vest in the event of a termination of the Participant's employment with the Company without Cause or by the Participant for Good Reason at any time during the two (2) year period following the consummation of a Change of Control transaction.]

[As used herein, "Cause" means: (i) willful misconduct, dishonesty, fraud or breach of fiduciary duty to the Company; (ii) deliberate disregard of the lawful rules or policies of the Company, or breach of an employment or other agreement with the Company, which results in direct or indirect loss, damage or injury to the Company; (iii) the unauthorized disclosure of any trade secret or confidential information of the Company; (iv) the commission of an act which constitutes unfair competition with the Company or which induces any customer or supplier to breach a contract with the Company or (v) conduct substantially prejudicial to the business of the Company or any Affiliate.]

[As used herein a "Change of Control" means any of the following: (i) any Person or Group (within the meaning of Section 13(d)(3) of the Securities Exchange Act of 1934) (other than a Person or Group which is a shareholder of the Company on March 17, 2010) is or becomes the beneficial owner, directly or indirectly, through a purchase, merger or other acquisition transaction or series of

transactions, of capital stock of the Company entitling such Person or Group to control 50% or more of the total voting power of the capital stock of the Company entitled to vote generally in the election of directors, where any voting capital stock of which such Person or Group is the beneficial owner that are not then outstanding are deemed outstanding for purposes of calculating such percentage; other than in connection with the Company's issuance of its capital stock in a bona-fide financing transaction the proceeds of which are to be utilized for its general corporate purposes (including without limitation the retirement or repayment of outstanding debt obligations), or (ii) any sale or transfer of all or substantially all of the assets of the Company to another Person. "Person" means an individual, a partnership, a corporation, a limited liability company, an association, a joint stock company, a trust, a joint venture, an unincorporated organization or any other entity, including a governmental entity or any department, agency or political subdivision thereof.]

[As used herein, "Good Reason" means: (i) any material breach by the Company of any employment agreement with the Participant that is not cured by the Company within thirty (30) days after written notice specifying in reasonable detail the nature of such material breach is provided to the Company by the Participant; (ii) the demotion of the Participant such that the Participant no longer serves in the position specified in his or her employment agreement (and lacking one, in the position held by such person on the Date of Grant) or a material reduction in the Participant's current duties and authority in such position, in each case, without his or her consent; (iii) the written demand by the Company for the Participant to relocate or commute more than 40 miles from Northborough, Massachusetts without his or her consent; or (iv) any reduction by the Company in the Participant's base salary without his or her consent.]

Notwithstanding the foregoing, in the event the Participant ceases to be an Employee, director or Consultant of the Company or of an Affiliate by reason of Disability while the Participant is an Employee, director or Consultant of the Company or of an Affiliate, the then unvested portion of this Restricted Stock Unit Award shall vest to the extent of a pro rata portion through the date of the Participant's termination of service due to Disability of the number of shares that would have vested on the next vesting date had the Participant not become Disabled. The proration shall be based upon the number of days accrued in the current vesting period prior to the date of the Participant's termination of service due to Disability.

Notwithstanding the foregoing, in the event of the death of the Participant while an Employee, director or Consultant of the Company or of an Affiliate, the then unvested portion of this Restricted Stock Unit Award shall vest to the extent of a pro rata portion through the date of death of the number of shares that would have vested on the next vesting date had the Participant not died. The proration shall be based upon the number of days accrued in the current vesting period prior to the Participant's date of death.

The Company and the Participant acknowledge receipt of this Restricted Stock Unit Award Grant Notice and agree to the terms of the Restricted Stock Unit Agreement attached hereto and incorporated by reference herein, the Company's 2014 Employee, Director and Consultant Equity Incentive Plan and the terms of this Restricted Stock Unit Award as set forth above.

ASPEN AEROGELS, INC.

By: _____
Name: _____
Title: _____

Participant

ASPEN AEROGELS, INC.

**RESTRICTED STOCK UNIT AGREEMENT -
INCORPORATED TERMS AND CONDITIONS**

AGREEMENT made as of the date of grant set forth in the Restricted Stock Unit Award Grant Notice between Aspen Aerogels, Inc. (the "Company"), a Delaware corporation, and the individual whose name appears on the Restricted Stock Unit Award Grant Notice (the "Participant").

WHEREAS, the Company has adopted the Aspen Aerogels, Inc. 2014 Employee, Director and Consultant Equity Incentive Plan (the "Plan"), to promote the interests of the Company by providing an incentive for Employees, directors and Consultants of the Company and its Affiliates;

WHEREAS, pursuant to the provisions of the Plan, the Company desires to grant to the Participant restricted stock units ("RSUs") related to the Company's common stock, par value \$0.00001 per share ("Common Stock"), in accordance with the provisions of the Plan, all on the terms and conditions hereinafter set forth; and

WHEREAS, the Company and the Participant understand and agree that any terms used and not defined herein have the meanings ascribed to such terms in the Plan.

NOW, THEREFORE, in consideration of the premises and the mutual covenants contained herein and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

1. Grant of Award. The Company hereby grants to the Participant the number of RSUs set forth in the Restricted Stock Unit Award Grant Notice (the "Award") which represents a contingent entitlement of the Participant to receive shares of Common Stock, on the terms and conditions and subject to all the limitations set forth herein and in the Plan, which is incorporated herein by reference. The Participant acknowledges receipt of a copy of the Plan.

2. Vesting of Award.

(a) Subject to the terms and conditions set forth in this Agreement and the Plan, the Award granted hereby shall vest as set forth in the Restricted Stock Unit Award Grant Notice and is subject to the other terms and conditions of this Agreement and the Plan. On each vesting date set forth in the Restricted Stock Unit Award Grant Notice, the Participant shall be entitled to receive such number of shares of Common Stock equivalent to the number of RSUs set forth opposite such vesting date provided that, on such vesting date, the Participant is a director, Employee or Consultant of the Company or an Affiliate. Such shares of Common Stock shall thereafter be delivered by the Company to the Participant within five days of the applicable vesting date and in accordance with this Agreement and the Plan. The purchase price is \$0.00001 per share payable if and when shares of Common Stock are issued by the Company, which payment will be made by the Company on behalf of the Participant as compensation for the Participant's prior service to the Company and which amount will be reported as income on the Participant's W-2 (or other applicable form) in the year of payment.

(b) Except as otherwise set forth in this Agreement, if the Participant ceases to be, for any reason, a director, Employee or Consultant of the Company or an Affiliate (the "Termination") prior to a vesting date set forth in the Restricted Stock Unit Award Grant Notice, then as of the date on which such relationship is terminated with the Participant, all unvested RSUs shall immediately be forfeited to the Company and this Agreement shall terminate and be of no further force or effect.

3. Prohibitions on Transfer and Sale. This Award (including any additional RSUs received by the Participant as a result of stock dividends, stock splits or any other similar transaction affecting the Company's securities without receipt of consideration) shall not be transferable by the Participant otherwise than (i) by will or by the laws of descent and distribution, or (ii) pursuant to a qualified domestic relations

order as defined by the Internal Revenue Code or Title I of the Employee Retirement Income Security Act or the rules thereunder. Except as provided in the previous sentence, the shares of Common Stock to be issued pursuant to this Agreement shall be issued, during the Participant's lifetime, only to the Participant (or, in the event of legal incapacity or incompetence, to the Participant's guardian or representative). This Award shall not be assigned, pledged or hypothecated in any way (whether by operation of law or otherwise) and shall not be subject to execution, attachment or similar process. Any attempted transfer, assignment, pledge, hypothecation or other disposition of this Award or of any rights granted hereunder contrary to the provisions of this Section 3, or the levy of any attachment or similar process upon this Award shall be null and void.

4. Adjustments. The Plan contains provisions covering the treatment of RSUs and shares of Common Stock in a number of contingencies such as stock splits. Provisions in the Plan for adjustment with respect to this Award and the related provisions with respect to successors to the business of the Company are hereby made applicable hereunder and are incorporated herein by reference.

5. Securities Law Compliance. The Participant specifically acknowledges and agrees that any sales of shares of Common Stock shall be made in accordance with the requirements of the Securities Act of 1933, as amended. The Company currently has an effective registration statement on file with the Securities and Exchange Commission with respect to the Common Stock to be granted hereunder. The Company intends to maintain this registration statement but has no obligation to do so. If the registration statement ceases to be effective for any reason or there is a restriction under foreign law, a Participant will not be able to transfer or sell any of the shares of Common Stock issued to the Participant pursuant to this Agreement unless exemptions from registration or filings under applicable securities laws are available. Furthermore, despite registration, applicable securities laws may restrict the ability of the Participant to resell his or her Common Stock, including due to the Participant's affiliation with the Company. The Company shall not be obligated to either issue the Common Stock or permit the resale of any shares of Common Stock if such issuance or resale would violate any applicable securities law, rule or regulation.

6. Rights as a Stockholder. The Participant shall have no right as a stockholder, including voting and dividend rights, with respect to the RSUs subject to this Agreement.

7. Incorporation of the Plan. The Participant specifically understands and agrees that the RSUs and the shares of Common Stock to be issued under the Plan will be issued to the Participant pursuant to the Plan, a copy of which Plan the Participant acknowledges he or she has read and understands and by which Plan he or she agrees to be bound. The provisions of the Plan are incorporated herein by reference.

8. Tax Liability of the Participant and Payment of Taxes. The Participant acknowledges and agrees that any income or other taxes due from the Participant with respect to this Award or the shares of Common Stock to be issued pursuant to this Agreement or otherwise sold shall be the Participant's responsibility. Without limiting the foregoing, the Participant agrees that if under applicable law the Participant will owe taxes at each vesting date on the portion of the Award then vested the Company shall be entitled to immediate payment from the Participant of the amount of any tax required to be withheld by the Company. Any taxes due shall be paid, at the option of the Company as follows:

(a) through reducing the number of shares of Common Stock entitled to be issued to the Participant on the applicable vesting date in an amount equal to the amount of minimum withholding tax due and payable by the Company. Fractional shares will not be retained to satisfy any portion of the withholding tax. Accordingly, the Participant agrees that in the event that the amount of withholding tax owed would result in a fraction of a share being owed, that amount will be satisfied by withholding the fractional amount from the Participant's paycheck;

(b) requiring the Participant to deposit with the Company an amount of cash equal to the amount determined by the Company to be required with respect to the statutory minimum of the Participant's estimated total federal, state and local tax obligations or otherwise withholding from the Participant's paycheck an amount equal to the withholding tax due and payable; or

(c) if the Company believes that the sale of shares can be made in compliance with applicable securities laws, authorizing, at a time when the Participant is not in possession of material nonpublic information, the sale by the Participant on the applicable vesting date of such number of shares of Common Stock as the Company instructs a registered broker to sell to satisfy the Company's withholding obligation, after deduction of the broker's commission, and the broker shall be required to remit to the Company the cash necessary in order for the Company to satisfy its withholding obligation. To the extent the proceeds of such sale exceed the Company's tax withholding obligation the Company agrees to pay such excess cash to the Participant as soon as practicable. In addition, if such sale is not sufficient to pay the Company's tax withholding obligation the Participant agrees to pay to the Company as soon as practicable, including through additional payroll withholding, the amount of any tax withholding obligation that is not satisfied by the sale of shares of Common Stock. The Participant agrees to hold the Company and the broker harmless from all costs, damages or expenses relating to any such sale. The Participant acknowledges that the Company and the broker are under no obligation to arrange for such sale at any particular price. In connection with such sale of shares of Common Stock, the Participant shall execute any such documents requested by the broker in order to effectuate the sale of shares of Common Stock and payment of the withholding obligation to the Company. The Participant acknowledges that this paragraph is intended to comply with Section 10b5-1(c)(1)(B) under the Exchange Act.

The Company shall not deliver any shares of Common Stock to the Participant until it is satisfied that all required withholdings have been made.

9. Participant Acknowledgements and Authorizations .

The Participant acknowledges the following:

(a) The Company is not by the Plan or this Award obligated to continue the Participant as an Employee, director or Consultant of the Company or of an Affiliate.

(b) The Plan is discretionary in nature and may be suspended or terminated by the Company at any time.

(c) The grant of this Award is considered a one-time benefit and does not create a contractual or other right to receive any other award under the Plan, benefits in lieu of awards or any other benefits in the future.

(d) The Plan is a voluntary program of the Company and future awards, if any, will be at the sole discretion of the Company, including, but not limited to, the timing of any grant, the amount of any award, vesting provisions and the purchase price, if any.

(e) The value of this Award is an extraordinary item of compensation outside of the scope of any employment or service. As such, the Award is not part of normal or expected compensation for purposes of calculating any severance, resignation, redundancy, end of service payments, bonuses, long-service awards, pension or retirement benefits or similar payments. The future value of the shares of Common Stock is unknown and cannot be predicted with certainty.

(f) The Participant (i) authorizes the Company and its Affiliates or, if the Participant is not employed by the Company or an Affiliate, his or her employer, to furnish the Company and its Affiliates (and any agent administering the Plan or providing recordkeeping services) with such information and data as it shall request in order to facilitate the grant of the Award and the administration of the Plan, (ii) waives any data privacy rights he or she may have with respect to such information or the sharing of such information, and (iii) authorizes the Company and its Affiliates to store and transmit such information in electronic form.

10. Notices. Any notices required or permitted by the terms of this Agreement or the Plan shall be given by recognized courier service, facsimile, registered or certified mail, return receipt requested, addressed as follows:

If to the Company:

Aspen Aerogels, Inc.
30 Forbes Road, Building B
Northborough, MA 01532
Attention: Chief Financial Officer

If to the Participant at the address set forth on the Restricted Stock Unit Award Grant Notice or to such other address or addresses of which notice in the same manner has previously been given. Any such notice shall be deemed to have been given on the earliest of receipt, one business day following delivery by the sender to a recognized courier service, or three business days following mailing by registered or certified mail.

11. Assignment and Successors.

(a) This Agreement is personal to the Participant and without the prior written consent of the Company shall not be assignable by the Participant otherwise than by will or the laws of descent and distribution. This Agreement shall inure to the benefit of and be enforceable by the Participant's legal representatives.

(b) This Agreement shall inure to the benefit of and be binding upon the Company and its successors and assigns.

12. Governing Law. This Agreement shall be construed and enforced in accordance with the laws of the Delaware, without giving effect to the conflict of law principles thereof. For the purpose of litigating any dispute that arises under this Agreement, whether at law or in equity, the parties hereby consent to exclusive jurisdiction in the Commonwealth of Massachusetts and agree that such litigation shall be conducted in the state courts of Middlesex County, Massachusetts or the federal courts of the United States for the District of Massachusetts.

13. Severability. If any provision of this Agreement is held to be invalid or unenforceable by a court of competent jurisdiction, then such provision or provisions shall be modified to the extent necessary to make such provision valid and enforceable, and to the extent that this is impossible, then such provision shall be deemed to be excised from this Agreement, and the validity, legality and enforceability of the rest of this Agreement shall not be affected thereby.

14. Entire Agreement. This Agreement, together with the Plan, constitutes the entire agreement and understanding between the parties hereto with respect to the subject matter hereof and supersedes all prior oral or written agreements and understandings relating to the subject matter hereof. No statement, representation, warranty, covenant or agreement not expressly set forth in this Agreement shall affect or be used to interpret, change or restrict the express terms and provisions of this Agreement provided, however, in any event, this Agreement shall be subject to and governed by the Plan.

15. Modifications and Amendments; Waivers and Consents. The terms and provisions of this Agreement may be modified or amended as provided in the Plan. Except as provided in the Plan, the terms and provisions of this Agreement may be waived, or consent for the departure therefrom granted, only by written document executed by the party entitled to the benefits of such terms or provisions. No such waiver or consent shall be deemed to be or shall constitute a waiver or consent with respect to any other terms or provisions of this Agreement, whether or not similar. Each such waiver or consent shall be effective only in the specific instance and for the purpose for which it was given, and shall not constitute a continuing waiver or consent.

16. Section 409A. The Award of RSUs evidenced by this Agreement is intended to be exempt from the nonqualified deferred compensation rules of Section 409A of the Code as a "short term deferral" (as that term is used in the final regulations and other guidance issued under Section 409A of the Code, including Treasury Regulation Section 1.409A-1(b)(4)(i)), and shall be construed accordingly.

CERTIFICATIONS UNDER SECTION 302

I, Donald R. Young, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Aspen Aerogels, Inc.;
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 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. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or 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) 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 end of the period covered by this report based on such evaluation; and
 - c) 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. The registrant's other certifying officer(s) and 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 functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control 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 control over financial reporting.

Date: November 7, 2014

/s/ Donald R. Young

Donald R. Young
President and Chief Executive Officer
(principal executive officer)

CERTIFICATIONS UNDER SECTION 302

I, John F. Fairbanks, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Aspen Aerogels, Inc.;
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 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. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or 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) 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 end of the period covered by this report based on such evaluation; and
 - c) 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. The registrant's other certifying officer(s) and 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 functions):
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control 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 control over financial reporting.

Date: November 7, 2014

/s/ John F. Fairbanks

John F. Fairbanks

Vice President, Chief Financial Officer and Treasurer
(principal accounting and financial officer)

CERTIFICATIONS UNDER SECTION 906

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, chapter 63 of title 18, United States Code), each of the undersigned officers of Aspen Aerogels, Inc., a Delaware corporation (the "Company"), does hereby certify, to such officer's knowledge, that:

The Quarterly Report on Form 10-Q for the quarter ended September 30, 2014 (the "Form 10-Q") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and the information contained in the Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: November 7, 2014

/s/ Donald R. Young

Donald R. Young
President and Chief Executive Officer
(principal executive officer)

Dated: November 7, 2014

/s/ John F. Fairbanks

John F. Fairbanks
Vice President, Chief Financial Officer and Treasurer
(principal accounting and financial officer)

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.