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

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**FORM S-8  
REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933**

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**ASPEN AEROGELS, INC.**  
(Exact name of registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

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

**30 Forbes Road, Building B  
Northborough, Massachusetts 01532  
(508) 691-1111**  
(Address, including zip code, of principal executive offices)

**ASPEN AEROGELS, INC. 2014 EMPLOYEE, DIRECTOR AND CONSULTANT EQUITY INCENTIVE PLAN**  
(Full Title of the Plan)

**Donald R. Young  
President and Chief Executive Officer  
Aspen Aerogels, Inc.  
30 Forbes Road, Building B  
Northborough, Massachusetts 01532  
(508) 691-1111**  
(Name, address and telephone number, including area code, of agent for service)

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*Copies to:*

**Sahir Surmeli, Esq.  
John T. Rudy, Esq.  
Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.  
One Financial Center  
Boston, Massachusetts 02111  
(617) 542-6000  
Facsimile: (617) 542-2241**

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Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Non-accelerated filer

Accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

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**CALCULATION OF REGISTRATION FEE**

<b>Title of Securities to be Registered</b>	<b>Amount to be Registered (1)</b>	<b>Proposed Maximum Offering Price Per Share (2)</b>	<b>Proposed Maximum Aggregate Offering Price (2)</b>	<b>Amount of Registration Fee</b>
Common Stock, par value \$0.00001 per share	556,433 shares	\$21.28	\$11,840,894.24	\$1,291.84

- (1) The number of shares of common stock, par value \$0.00001 per share (“Common Stock”), of Aspen Aerogels, Inc. (the “Registrant”) stated above consists of additional shares of common stock available for issuance under the Aspen Aerogels, Inc. 2014 Employee, Director and Consultant Equity Incentive Plan (the “2014 Plan”) by operation of the 2014 Plan’s “evergreen” provision. The maximum number of shares which may be sold upon the exercise of such options or issuance of stock-based awards granted under the 2014 Plan are subject to adjustment in accordance with certain anti-dilution and other provisions of the 2014 Plan. Accordingly, pursuant to Rule 416 under the Securities Act of 1933, as amended (the “Securities Act”), this Registration Statement covers, in addition to the number of shares stated above, an indeterminate number of shares which may be subject to grant or otherwise issuable after the operation of any such anti-dilution and other provisions.
- (2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) and Rule 457(h) promulgated under the Securities Act. The offering price per share and the aggregate offering price for shares reserved for future grant or issuance under the 2014 Plan are based on the average of the high and the low price of Registrant’s Common Stock as reported on the New York Stock Exchange as of a date (March 5, 2021) within five business days prior to filing this Registration Statement.

## EXPLANATORY NOTE

This Registration Statement registers an aggregate of 556,433 additional shares of the Registrant's common stock reserved under the Aspen Aerogels, Inc. 2014 Employee, Director and Consultant Equity Incentive Plan (the "2014 Plan"), representing an increase of 556,433 shares reserved under the 2014 Plan effective January 1, 2021 by operation of the 2014 Plan's "evergreen" provision. This Registration Statement registers additional securities of the same class as other securities for which a registration statement filed on [Form S-8](#) of the Registrant relating to an employee benefit plan is effective (SEC File No. 333-198124). The information contained in the Registrant's registration statement on Form S-8 (SEC File No. 333-198124) is hereby incorporated by reference pursuant to General Instruction E of Form S-8.

### PART II INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

#### Item 8. Exhibits.

<u>Exhibit Number</u>	<u>Exhibit Description</u>	<u>Filed Herewith</u>	<u>Incorporated by Reference herein from Form or Schedule</u>	<u>Filing Date</u>	<u>SEC File/Reg. Number</u>
4.1	<a href="#">Restated Certificate of Incorporation of the Registrant, as filed with the Secretary of State of the State of Delaware on June 18, 2014.</a>		8-K (Exhibit 3.2)	6/19/2014	001-36481
4.2	<a href="#">Restated Bylaws of the Registrant.</a>		8-K (Exhibit 3.3)	6/19/2014	001-36481
4.3	<a href="#">Form of common stock certificate.</a>		S-1/A (Exhibit 4.1)	5/14/2014	333-195523
4.4	<a href="#">2014 employee, director and consultant equity incentive plan.</a>		S-8 (Exhibit 99.10)	8/13/2014	333-198124
4.5	<a href="#">Form of stock option agreement under 2014 employee, director and consultant equity incentive plan.</a>		S-1/A (Exhibit 10.2.2)	5/14/2014	333-195523
4.6	<a href="#">Form of restricted stock unit agreement for executive officers under 2014 employee, director and consultant equity incentive plan.</a>		10-Q (Exhibit 10.3)	11/7/2014	001-36481
4.7	<a href="#">Form of restricted stock agreement for directors under 2014 employee, director and consultant equity incentive plan.</a>		S-1/A (Exhibit 10.2.3)	5/14/2014	333-195523

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5.1	<a href="#">Opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.</a>	X
23.1	<a href="#">Consent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. (included in opinion of counsel filed as Exhibit 5.1).</a>	X
23.2	<a href="#">Consent of KPMG LLP.</a>	X
24.1	<a href="#">Power of Attorney to file future amendments (set forth on the signature page of this Registration Statement).</a>	X

## SIGNATURES

*The Registrant.* Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Northborough, Massachusetts on March 12, 2021.

### ASPEN AEROGELS, INC.

By /s/ Donald R. Young

Donald R. Young  
President and Chief Executive Officer

Each person whose signature appears below constitutes and appoints Donald R. Young, John F. Fairbanks and Poongunran Muthukumaran, and each of them singly, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them singly, for him or her and in his or her name, place and stead, and in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement on Form S-8 of Aspen Aerogels, Inc., and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting to the attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in or about the premises, as full to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that the attorneys-in-fact and agents or any of each of them or their substitute may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Donald R. Young</u> Donald R. Young	President, Chief Executive Officer and Director (principal executive officer)	March 12, 2021
<u>/s/ John F. Fairbanks</u> John F. Fairbanks	Vice President, Chief Financial Officer and Treasurer (principal financial officer and principal accounting officer)	March 12, 2021
<u>/s/ William P. Noglows</u> William P. Noglows	Chairman of the Board	March 12, 2021
<u>/s/ Rebecca B. Blalock</u> Rebecca B. Blalock	Director	March 12, 2021
<u>/s/ Robert M. Gervis</u> Robert M. Gervis	Director	March 12, 2021

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/s/ Steven R. Mitchell  
Steven R. Mitchell

Director

March 12, 2021

/s/ Mark L. Noetzel  
Mark L. Noetzel

Director

March 12, 2021

/s/ Richard F. Reilly  
Richard F. Reilly

Director

March 12, 2021



March 12, 2021

Aspen Aerogels, Inc.  
30 Forbes Road, Building B  
Northborough, MA 01532

Ladies and Gentlemen:

We have acted as legal counsel to Aspen Aerogels, Inc., a Delaware corporation (the “Company”), in connection with the preparation and filing with the Securities and Exchange Commission (the “Commission”) of a Registration Statement on Form S-8 (the “Registration Statement”), pursuant to which the Company is registering the issuance under the Securities Act of 1933, as amended (“Securities Act”), of an aggregate of 556,433 shares (the “Shares”) of the Company’s common stock, \$0.00001 par value per share (“Common Stock”), in accordance with the terms of the Aspen Aerogels, Inc. 2014 Employee, Director and Consultant Equity Incentive Plan (the “Plan”). This opinion is being rendered in connection with the filing of the Registration Statement with the Commission. All capitalized terms used herein and not otherwise defined shall have the respective meanings given to them in the Registration Statement.

In connection with this opinion, we have examined the Company’s Restated Certificate of Incorporation and Restated Bylaws, each as currently in effect; such other records of the corporate proceedings of the Company and certificates of the Company’s officers as we have deemed relevant; and the Registration Statement and the exhibits thereto.

In our examination, we have assumed the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as copies, the authenticity of the originals of such copies, and the truth and correctness of any representations and warranties contained therein. In addition, we have assumed that the Company will receive any required consideration in accordance with the terms of the Plan.

Our opinion expressed herein is limited to the General Corporation Law of the State of Delaware and we express no opinion with respect to the laws of any other jurisdiction. No opinion is expressed herein with respect to the qualification of the Shares under the securities or blue sky laws of any state or any foreign jurisdiction.

Please note that we are opining only as to the matters expressly set forth herein, and no opinion should be inferred as to any other matters. This opinion is based upon currently existing statutes, rules, regulations and judicial decisions, and we disclaim any obligation to advise you of any change in any of these sources of law or subsequent legal or factual developments which might affect any matters or opinions set forth herein.

Based upon the foregoing, we are of the opinion that the Shares, when issued and delivered in accordance with the terms of the Plan, will be validly issued, fully paid and non-assessable.

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BOSTON

LONDON

LOS ANGELES

NEW YORK

SAN DIEGO

SAN FRANCISCO

WASHINGTON

MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND POPEO, P.C.



We understand that you wish to file this opinion with the Commission as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K promulgated under the Securities Act, and we hereby consent thereto. In giving this consent, we do not admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ Mintz, Levin, Cohn, Ferris, Glovsky & Popeo, P.C.

Mintz, Levin, Cohn, Ferris, Glovsky & Popeo, P.C.

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BOSTON

LONDON

LOS ANGELES

NEW YORK

SAN DIEGO

SAN FRANCISCO

WASHINGTON

MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND POPEO, P.C.



**Consent of Independent Registered Public Accounting Firm**

The Board of Directors  
Aspen Aerogels, Inc.:

We consent to the use of our report dated March 12, 2021, with respect to the consolidated balance sheets of Aspen Aerogels, Inc. and subsidiaries as of December 31, 2020 and 2019, the related consolidated statements of operations, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes, and financial statement schedule II – Valuation and Qualifying Accounts, and the effectiveness of internal control over financial reporting as of December 31, 2020 incorporated by reference herein.

Our report refers to a change in accounting principles related to leases.

/s/ KPMG LLP  
Hartford, Connecticut  
March 12, 2021