

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

FORM 8-K

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

Date of Report: July 7, 2014
Commission file number 001-11602

APPLIED NANOTECH HOLDINGS, INC.
(Exact name of registrant as specified in its charter)

Texas
(State or other jurisdiction
of incorporation or organization)

76-0273345
(I.R.S. Employer
Identification No.)

3006 Longhorn Boulevard, Suite 107, Austin, Texas 78758
(Address of principal executive offices) (Zip Code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 1.01 Entry into a Material Definitive Agreement.

Amendment to Merger Agreement

On July 2, 2014, Applied Nanotech Holdings, Inc., a Texas corporation (the “Company”), together with its wholly owned direct subsidiaries PEN INC, a Delaware corporation and NanoMerger Sub Inc., a Delaware corporation entered into a Second Amendment to Agreement and Plan of Merger and Exchange (the “Second Amendment to Merger Agreement”) with NanoHolding Inc. and Carl Zeiss, Inc. The Second Amendment to Merger Agreement changed Section 14.1 to extend the termination date from July 31, 2014 to September 3, 2014. The Second Amendment to Merger Agreement is included with this report.

Item 7.01 Regulation FD Disclosure.

On July 7, we issued a joint press release with Nanofilm Ltd. about the timing for mailing of definitive proxy materials and for a shareholders meeting to be held in Dallas Texas on August 22, 2014 for our shareholders to vote on our proposed business combination. The press release is attached hereto as Exhibit 99.1 and incorporated herein by this reference.

The information contained in the press release attached hereto is being furnished and shall not be deemed filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), or otherwise subject to the liability of that Section, and shall not be incorporated by reference into any registration statement or other document filed under the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.

Item 9.01 Financial Statements and Exhibits.

10.1 Second Amendment to Agreement and Plan of Merger and Exchange dated July 2, 2014

99.1 Joint Press Release of Applied Nanotech Holdings, Inc. and Nanofilm, Ltd. dated July 7, 2014 (furnished herewith).

ADDITIONAL INFORMATION AND WHERE TO FIND IT

In connection with the merger of APNT and Nanofilm discussed in this Form 8-K, we will be filing a proxy statement and relevant documents concerning the transaction with the Securities and Exchange Commission (“SEC”). OUR SECURITY HOLDERS ARE URGED TO READ THE PROXY STATEMENT AND ANY OTHER RELEVANT DOCUMENTS FILED WITH THE SEC WHEN THEY BECOME AVAILABLE BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION. Investors and security holders can obtain free copies of the proxy statement and other documents when they become available by contacting our Investor Relations Department, 3006 Longhorn Boulevard, Suite 107, Austin, Texas 78758 (Telephone: (512) 339-5020). In addition, documents we filed with the SEC are available free of charge at the SEC’s web site at <http://www.sec.gov> and at our website www.appliednanotech.net under “Investor Information - SEC Filings.”

Our company and our directors and executive officers and other persons may be deemed to be participants in the solicitation of proxies in respect of the proposed merger discussed in this Form 8-K. Information regarding our directors and executive officers is available in our Annual Report on Form 10-K for the year ended December 31, 2013, which was filed with the SEC on February 25, 2014, and the proxy statement and other relevant materials to be filed with the SEC in connection with these matters. Other information regarding the participants in the proxy solicitation and a description of their direct and indirect interests, by security holdings or otherwise, will be contained in the proxy statement and other relevant materials to be filed with the SEC when they become available.

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 hereunto duly authorized.

Applied Nanotech Holdings, Inc.

Date: July 7, 2014

By: /s/ Jacqu Soptick
Jacque Soptick, Chief Accounting Officer

**SECOND AMENDMENT TO
AGREEMENT AND PLAN OF MERGER
AND EXCHANGE**

This SECOND AMENDMENT TO AGREEMENT AND PLAN OF MERGER AND EXCHANGE, dated as of July 2, 2014 is entered into by and among APPLIED NANOTECH HOLDINGS, INC., a corporation incorporated in the State of Texas, USA ("**APNT**"), PEN INC., a corporation incorporated in the State of Delaware and a wholly-owned subsidiary of APNT ("**PEN**"), NANOMERGER SUB INC., a corporation incorporated in the State of Delaware and a wholly-owned subsidiary of APNT ("**MergerSub**"), NANO HOLDING INC., a Delaware corporation ("**Nano**") AND CARL ZEISS INC., a New York corporation ("**Zeiss**").

WHEREAS, APNT, PEN, MergerSub, Nano and Zeiss are parties to an Agreement and Plan of Merger and Exchange Dated as of March 10, 2014, as amended by an earlier Amendment dated May 28, 2014 (the "**Merger & Exchange Agreement**").

WHEREAS, the parties desire to amend the Merger & Exchange Agreement to change the date when the parties may have the right to terminate the Merger & Exchange Agreement so that it is after the scheduled meeting of the shareholders of APNT.

NOW, THEREFORE, in consideration of the agreements contained in this Amendment and other good and valuable consideration, the parties agree that the date in Section 14.1 clause (b)(i) is hereby changed from July 31, 2014 to September 3, 2014. Except as stated in the preceding sentence, the Merger & Exchange Agreement remains in full force and effect.

[Signatures begin next page]

IN WITNESS WHEREOF, the Parties hereto have caused this Second Amendment to be duly executed by their respective authorized signatories as of the date first indicated above.

APPLIED NANOTECH HOLDINGS, INC.

By: /s/ Robert Ronstadt
Robert Ronstadt, Chairman

PEN INC.

By: /s/ Robert Ronstadt
Robert Ronstadt, Chairman

NANOMERGER SUB INC.

By: /s/ Robert Ronstadt
Robert Ronstadt, Chairman

NANOHOLDINGS INC.

By: /s/ Scott E. Rickert
Scott E. Rickert, President

CARL ZEISS, INC.

By: /s/ James Sharp
James Sharp, President

**Applied Nanotech Holdings, Inc. sets earlier meeting date of August 22, 2014,
and commences mailing of definitive proxy statement for vote
on proposed combination with Nanofilm, Ltd.**

Austin, Texas and Valley View, Ohio – July 7, 2014 – Applied Nanotech Holdings, Inc. (OTCQB:APNT) (Applied Nanotech), a global leader in nanotechnology research and development, and NanoHolding Inc., the parent company of Nanofilm, Ltd. (Nanofilm), a private company with a leading market position for specialty optical coatings, cleaners and nano-composite products, jointly announced that Applied Nanotech will start mailing today the definitive proxy materials in preparation for an August 22, 2014 shareholder meeting. At the meeting Applied Nanotech shareholders will be asked to approve a combination of the two companies to create PEN Inc. It is anticipated that the new publicly traded company will have expanded capability to develop, commercialize and deliver innovative nanotechnology-based products to consumer, commercial and industrial markets.

The APNT Board of Directors unanimously recommends that shareholders vote "FOR" the combination. Dr. Robert Ronstadt, APNT's Chairman, noted, "The APNT Board considers the combination a growth strategy. The combination of Applied Nanotech's intellectual property portfolio with strong management, manufacturing, marketing, and sales is, in my opinion, our best option to commercialize and monetize APNT technology."

Nanofilm has a 25-year track record in developing and commercializing nanotechnology-based consumer and industrial products; APNT has an extensive technology portfolio. The new combined company will have the personnel, development facilities, operating facilities, and customer relations to develop and commercialize next-generation nanotechnology-based products to support revenue growth.

Scott Rickert, Ph.D., the chief executive officer of Nanofilm, will become the chairman and chief executive officer of PEN upon closing of the combination. "I'm enthusiastic about PEN's potential to unlock the commercial value of the combined APNT and Nanofilm technology portfolio, commented Dr. Rickert. "Integrating its nanotechnology and a disciplined business strategy, Nanofilm is already successfully marketing technology-based products around the world. I believe the combination with the technology of Applied Nanotech will be a springboard to new opportunities."

Based on 2013 pro forma historical financial statements of Applied Nanotech and Nanofilm, assuming the combination had occurred at the beginning of 2013, PEN would have had 2013 revenues exceeding \$13 million. Projected 2014 revenues of PEN are anticipated to be greater than 2013 pro forma revenues, generating positive operating income, not including transaction expenses. Upon completion of the combination, current Applied Nanotech stockholders and holders of certain debt convertible into Applied Nanotech's common stock are expected to own approximately 38% of PEN's outstanding common stock, and owners of Nanofilm are expected to receive approximately 62% of PEN's outstanding common stock.

Three additional proposals are on the ballot:

- Proposal 2 seeks an increase in the authorized number of shares of Applied Nanotech in case the combination does not occur.
 - Proposal 3, required under SEC rules, asks, on a non-binding, advisory basis, whether shareholders approve the compensation arrangements which will become effective if the combination is approved and closes for Dr. Zvi Yaniv, who is currently Chief Operating Officer of Applied Nanotech. After the closing, Dr. Yaniv will report to Scott Rickert and will be part of the team identifying new and existing technologies that can best be commercialized by PEN.
 - Proposal 4 allows the shareholder meeting to be adjourned until a later date if there are not sufficient votes to approve the combination.
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Whether or not shareholders plan to attend the special meeting, the APNT Board urges them to vote their shares FOR all four proposals by Internet, telephone or mail, as identified in the proxy materials.

APNT stockholders who have questions about the proxy materials or need assistance in submitting their proxy or voting their shares should contact Morrow & Co., LLC, which is assisting APNT, toll-free at 888.813.7566.

About APNT (OTCQB: APNT)

Applied Nanotech Holdings, Inc. (APNT) is an Austin, Texas-based global leader in nanotechnology research and development and has ongoing research programs and license agreements with product innovators around the world. For information about Applied Nanotech Holdings, Inc., please visit www.appliednanotech.net.

About Nanofilm, Ltd.

Nanofilm, Ltd. is a Valley View, Ohio private company that develops nano-layer coatings, nano-based cleaners, and nano-composite products. Nanofilm's primary commercial products center around its unique eyecare glass cleaning and de-fogging products; other products include precision mold release treatments, stay-clean surface treatments for ceramic insulators, and scuff-resistant treatments for commercial dinnerware. For information about Nanofilm, please visit www.nanofilmtechnology.com.

DISCLOSURE NOTICE: The information contained in this release is as of July 7, 2014. APNT and Nanofilm assume no obligation to update forward-looking statements contained in this release as the result of new information or future events or developments.

This release contains forward-looking information that involves substantial risks and uncertainties about the proposed combination of APNT and Nanofilm and their expectations regarding completion of the combination and their ability to expand, develop and enhance new products. Such risks and uncertainties include, among other things, the uncertainty regarding the completion of bridge financing, conversion of certain APNT debt into equity, approval by the respective shareholders of APNT and NanoHolding Inc., and market acceptance of products using their technologies.

A further description of risks and uncertainties regarding APNT's business can be found in its Annual Report on Form 10-K for the fiscal year ended December 31, 2013 and in its reports on Form 10-Q and Form 8-K.

ADDITIONAL INFORMATION AND WHERE TO FIND IT

In connection with the combination of APNT and Nanofilm discussed in this press release, APNT has filed a proxy statement and relevant documents concerning the transaction with the Securities and Exchange Commission ("SEC"). The definitive proxy statement and a form of proxy are being mailed to the APNT stockholders. SECURITY HOLDERS OF APNT ARE URGED TO READ THE PROXY STATEMENT AND ANY OTHER RELEVANT DOCUMENTS FILED BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION. Investors and security holders can obtain free copies of the proxy statement and other relevant documents filed with the SEC from the SEC's website at www.sec.gov. APNT shareholders can also obtain free copies of the proxy statement and other relevant documents by contacting our Investor Relations Department, 3006 Longhorn Boulevard, Suite 107, Austin, Texas 78758 (Telephone: (512) 339-5020) or from APNT's website, www.appliednanotech.net.

APNT and its directors and executive officers and other persons may be deemed to be participants in the solicitation of proxies in respect of the proposed combination of APNT and Nanofilm. Information regarding our directors and executive officers is available in our Annual Report on Form 10-K for the year ended December 31, 2013, which was filed with the SEC on February 25, 2014, and the proxy statement and other relevant materials to be filed with the SEC in connection with these matters. Other information regarding the participants in the proxy solicitation and a description of their direct and indirect interests, by security holdings or otherwise, will be contained in the proxy statement and other relevant materials to be filed with the SEC when they become available.

Contact Information:

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