

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13G

Under the Securities Exchange Act of 1934

Applied Optoelectronics, Inc.
(Name of Issuer)

Common Stock, Par value \$0.001
(Title of Class of Securities)

03823U102
(CUSIP Number)

April 13, 2017
(Date of Event Which Requires Filing of this Statement)

Check the following box to designate the rule pursuant to which the Schedule is filed:

- Rule 13d-1(b)
- Rule 13d-1(c)
- Rule 13d-1(d)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

CUSIP No. 03823U102

1. Names of Reporting Persons

I.R.S. Identification Nos. of above persons (entities only)

D. E. Shaw & Co., L.P.

13-3695715

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

3. SEC Use Only

4. Citizenship or Place of Organization

Delaware

**Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With**

5. Sole Voting Power

-0-

6. Shared Voting Power

949,364

7. Sole Dispositive Power

-0-

8. Shared Dispositive Power

949,364

9. Aggregate Amount Beneficially Owned by Each Reporting Person

949,364

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9)

5.1%

12. Type of Reporting Person (See Instructions)

IA, PN

1. Names of Reporting Persons

I.R.S. Identification Nos. of above persons (entities only)

David E. Shaw

2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

3. SEC Use Only

4. Citizenship or Place of Organization

United States

**Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With**

5. Sole Voting Power

-0-

6. Shared Voting Power

949,364

7. Sole Dispositive Power

-0-

8. Shared Dispositive Power

949,364

9. Aggregate Amount Beneficially Owned by Each Reporting Person

949,364

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)

11. Percent of Class Represented by Amount in Row (9)

5.1%

12. Type of Reporting Person (See Instructions)

IN

Item 1.

- (a) **Name of Issuer**
Applied Optoelectronics, Inc.
- (b) **Address of Issuer's Principal Executive Offices**
13139 Jess Pirtle Blvd.
Sugar Land, TX 77478

Item 2.

- (a) **Name of Person Filing**
D. E. Shaw & Co., L.P.
David E. Shaw
- (b) **Address of Principal Business Office or, if none, Residence**
The business address for each reporting person is:
1166 Avenue of the Americas, 9th Floor
New York, NY 10036
- (c) **Citizenship**
D. E. Shaw & Co., L.P. is a limited partnership organized under the laws of the state of Delaware.
David E. Shaw is a citizen of the United States of America.
- (d) **Title of Class of Securities**
Common Stock, Par value \$0.001
- (e) **CUSIP Number**
03823U102

Item 3. If this statement is filed pursuant to Rule 13d-1(b) or 13d-2(b) or (c), check whether the person filing is a:

Not Applicable

Item 4. Ownership

As of April 13, 2017:

(a) Amount beneficially owned:

D. E. Shaw & Co., L.P.:

949,364 shares

This is composed of (i) 580,569 shares in the name of D. E. Shaw Valence Portfolios, L.L.C., (ii) 20,000 shares that D. E. Shaw Valence Portfolios, L.L.C. has the right to acquire through the exercise of listed call options, (iii) 342,867 shares in the name of D. E. Shaw Oculus Portfolios, L.L.C., (iv) 1,019 shares in the name of D. E. Shaw Asymptote Portfolios, L.L.C., (v) 100 shares in the name of D. E. Shaw Heliant Capital, L.L.C., and (vi) 4,809 shares under the management of D. E. Shaw Investment Management, L.L.C.

David E. Shaw:

949,364 shares

This is composed of (i) 580,569 shares in the name of D. E. Shaw Valence Portfolios, L.L.C., (ii) 20,000 shares that D. E. Shaw Valence Portfolios, L.L.C. has the right to acquire through the exercise of listed call options, (iii) 342,867 shares in the name of D. E. Shaw Oculus Portfolios, L.L.C., (iv) 1,019 shares in the name of D. E. Shaw Asymptote Portfolios, L.L.C., (v) 100 shares in the name of D. E. Shaw Heliant Capital, L.L.C., and (vi) 4,809 shares under the management of D. E. Shaw Investment Management, L.L.C.

(b) Percent of class:		
D. E. Shaw & Co., L.P.:		5.1%
David E. Shaw:		5.1%
(c) Number of shares to which the person has:		
(i) Sole power to vote or to direct the vote:		
D. E. Shaw & Co., L.P.:		-0- shares
David E. Shaw:		-0- shares
(ii) Shared power to vote or to direct the vote:		
D. E. Shaw & Co., L.P.:		949,364 shares
David E. Shaw:		949,364 shares
(iii) Sole power to dispose or to direct the disposition of:		
D. E. Shaw & Co., L.P.:		-0- shares
David E. Shaw:		-0- shares
(iv) Shared power to dispose or to direct the disposition of:		
D. E. Shaw & Co., L.P.:		949,364 shares
David E. Shaw:		949,364 shares

David E. Shaw does not own any shares directly. By virtue of David E. Shaw's position as President and sole shareholder of D. E. Shaw & Co., Inc., which is the general partner of D. E. Shaw & Co., L.P., which in turn is the manager and investment adviser of D. E. Shaw Valence Portfolios, L.L.C., the investment adviser of D. E. Shaw Oculus Portfolios, L.L.C., and the managing member of (i) D. E. Shaw Investment Management, L.L.C., (ii) D. E. Shaw Adviser, L.L.C., which in turn is the investment adviser of D. E. Shaw Asymptote Portfolios, L.L.C., and (iii) D. E. Shaw Heliant Adviser, L.L.C., which in turn is the investment adviser of D. E. Shaw Heliant Capital, L.L.C., and by virtue of David E. Shaw's position as President and sole shareholder of D. E. Shaw & Co. II, Inc., which is the managing member of D. E. Shaw & Co., L.L.C., which in turn is the manager of D. E. Shaw Oculus Portfolios, L.L.C. and the managing member of (i) D. E. Shaw Manager, L.L.C., which in turn is the manager of D. E. Shaw Asymptote Portfolios, L.L.C., and (ii) D. E. Shaw Heliant Manager, L.L.C., which in turn is the manager of D. E. Shaw Heliant Capital, L.L.C., David E. Shaw may be deemed to have the shared power to vote or direct the vote of, and the shared power to dispose or direct the disposition of, the 949,364 shares as described above constituting 5.1% of the outstanding shares and, therefore, David E. Shaw may be deemed to be the beneficial owner of such shares. David E. Shaw disclaims beneficial ownership of such 949,364 shares.

Item 5. Ownership of Five Percent or Less of a Class

Not Applicable

Item 6. Ownership of More than Five Percent on Behalf of Another Person.

Not Applicable

Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company or Control Person.

Not Applicable

Item 8. Identification and Classification of Members of the Group

Not Applicable

Item 9. Notice of Dissolution of Group

Not Applicable

Item 10. Certification

By signing below, each of D. E. Shaw & Co., L.P. and David E. Shaw certify that, to the best of such reporting person's knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having such purposes or effect.

SIGNATURE

After reasonable inquiry and to the best of their knowledge and belief, the undersigned certify that the information set forth in this statement is true, complete and correct. A Power of Attorney, dated March 1, 2017, granted by David E. Shaw in favor of Nathan Thomas, is attached hereto.

Dated: April 24, 2017

D. E. Shaw & Co., L.P.

By: /s/ Nathan Thomas
Nathan Thomas
Chief Compliance Officer

David E. Shaw

By: /s/ Nathan Thomas
Nathan Thomas
Attorney-in-Fact for David E. Shaw

Exhibit 1

POWER OF ATTORNEY
FOR CERTAIN REGULATORY FILINGS
INCLUDING CERTAIN FILINGS
UNDER THE SECURITIES EXCHANGE ACT OF 1934
AND THE INVESTMENT ADVISERS ACT OF 1940

I, David E. Shaw, hereby make, constitute, and appoint each of:

Edward Fishman,

Julius Gaudio,

Martin Lebwahl,

Maximilian Stone,

David Sweet,

Nathan Thomas, and

Eric Wepsic,

acting individually, as my agent and attorney-in-fact, with full power of substitution, for the purpose of, from time to time, (i) executing in my name and/or my capacity as President of D. E. Shaw & Co., Inc. (acting for itself or as the general partner of D. E. Shaw & Co., L.P. and general partner, managing member, or manager of other entities, any of which in turn may be acting for itself or other entities) all documents, certificates, instruments, statements, other filings, and amendments to the foregoing (collectively, "documents") determined by such person to be necessary or appropriate to comply with any registration or regulatory disclosure requirements and/or ownership or control-person reporting requirements imposed by any United States or non-United States governmental or regulatory authority, including without limitation Form ADV, Forms 3, 4, 5, and 13F, and Schedules 13D and 13G required to be filed with the United States Securities and Exchange Commission, and (ii) delivering, furnishing, or filing any such documents to or with the appropriate governmental or regulatory authority. Any such determination shall be conclusively evidenced by such person's execution, delivery, furnishing, and/or filing of the applicable document.

This power of attorney shall be valid from the date hereof and replaces the power granted on January 1, 2017, which is hereby cancelled.

IN WITNESS HEREOF, I have executed this instrument as of the date set forth below.

Date: March 1, 2017

DAVID E. SHAW, as President of
D. E. Shaw & Co., Inc.
/s/ David E. Shaw
New York, New York

Exhibit 2

JOINT FILING AGREEMENT

In accordance with Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, as amended, each of the undersigned Reporting Persons hereby agrees to the joint filing, along with all other such Reporting Persons, on behalf of each of them of a statement on Schedule 13G (including amendments thereto) with respect to the Common Stock, Par value \$0.001, of Applied Optoelectronics, Inc., and that this Agreement be included as an Exhibit to such joint filing. This Agreement may be executed in any number of counterparts, all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF, each of the undersigned hereby executes this Agreement as of this 24th day of April, 2017.

D. E. Shaw & Co., L.P.

By: /s/ Nathan Thomas
Nathan Thomas
Chief Compliance Officer

David E. Shaw

By: /s/ Nathan Thomas
Nathan Thomas
Attorney-in-Fact for David E. Shaw
