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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, \$0.001 par value

(Title of Class of Securities)

03823U102

(CUSIP Number)

November 13, 2019

(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).

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1. **Names of Reporting Persons**  
**I.R.S. Identification Nos. of above persons (entities only)**  
D. E. Shaw & Co., L.L.C.  
13-3799946
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**  
1,087,178
7. **Sole Dispositive Power**  
-0-
8. **Shared Dispositive Power**  
1,087,178

9. **Aggregate Amount Beneficially Owned by Each Reporting Person**  
1,087,178
10. **Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) [ ]**
11. **Percent of Class Represented by Amount in Row (9)**  
5.2%<sup>1</sup>
12. **Type of Reporting Person (See Instructions)**  
OO

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<sup>1</sup> On November 13, 2019, D. E. Shaw & Co., L.L.C., D. E. Shaw & Co., L.P., and David E. Shaw (collectively, the “Reporting Persons”) became the beneficial owners of more than 5% of the class of securities. On December 13, 2019, the Reporting Persons ceased to be beneficial owners of more than 5% of the class of securities. On December 27, 2019, the Reporting Persons again became the beneficial owners of more than 5% of the class of securities. The beneficial ownership information provided in this document is as of December 31, 2019.

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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**  
1,090,400
7. **Sole Dispositive Power**  
-0-
8. **Shared Dispositive Power**  
1,090,400

9. **Aggregate Amount Beneficially Owned by Each Reporting Person**  
1,090,400
10. **Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)**
11. **Percent of Class Represented by Amount in Row (9)**  
5.3%<sup>2</sup>
12. **Type of Reporting Person (See Instructions)**  
IA, PN

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<sup>2</sup> On November 13, 2019, the Reporting Persons became the beneficial owners of more than 5% of the class of securities. On December 13, 2019, the Reporting Persons ceased to be beneficial owners of more than 5% of the class of securities. On December 27, 2019, the Reporting Persons again became the beneficial owners of more than 5% of the class of securities. The beneficial ownership information provided in this document is as of December 31, 2019.

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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**  
1,090,400
7. **Sole Dispositive Power**  
-0-
8. **Shared Dispositive Power**  
1,090,400

9. **Aggregate Amount Beneficially Owned by Each Reporting Person**  
1,090,400
10. **Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions)**
11. **Percent of Class Represented by Amount in Row (9)**  
5.3%<sup>3</sup>
12. **Type of Reporting Person (See Instructions)**  
IN

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<sup>3</sup> On November 13, 2019, the Reporting Persons became the beneficial owners of more than 5% of the class of securities. On December 13, 2019, the Reporting Persons ceased to be beneficial owners of more than 5% of the class of securities. On December 27, 2019, the Reporting Persons again became the beneficial owners of more than 5% of the class of securities. The beneficial ownership information provided in this document is as of December 31, 2019.

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**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.L.C.  
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, 9<sup>th</sup> Floor  
New York, NY 10036
- (c) **Citizenship**  
D. E. Shaw & Co., L.L.C. is a limited liability company organized under the laws of the state of Delaware.  
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, \$0.001 par value
- (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 December 31, 2019:

(a) Amount beneficially owned:

D. E. Shaw & Co., L.L.C.:	1,087,178 shares This is composed of (i) 359,413 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 call options, (iii) 622,895 shares that D. E. Shaw Valence Portfolios, L.L.C. has the right to acquire through convertible securities, and (iv) 84,870 shares in the name of D. E. Shaw Oculus Portfolios, L.L.C.
D. E. Shaw & Co., L.P.:	1,090,400 shares This is composed of (i) 359,413 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 call options, (iii) 622,895 shares that D. E. Shaw Valence Portfolios, L.L.C. has the right to acquire through convertible securities, (iv) 84,870 shares in the name of D. E. Shaw Oculus Portfolios, L.L.C., and (v) 3,222 shares under the management of D. E. Shaw Investment Management, L.L.C.
David E. Shaw:	1,090,400 shares This is composed of (i) 359,413 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 call options, (iii) 622,895 shares that D. E. Shaw Valence Portfolios, L.L.C. has the right to acquire through convertible securities, (iv) 84,870 shares in the name of D. E. Shaw Oculus Portfolios, L.L.C., and (v) 3,222 shares under the management of D. E. Shaw Investment Management, L.L.C.

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(b) Percent of class:		
D. E. Shaw & Co., L.L.C.:		5.2%
D. E. Shaw & Co., L.P.:		5.3%
David E. Shaw:		5.3%
(c) Number of shares to which the person has:		
(i) Sole power to vote or to direct the vote:		
D. E. Shaw & Co., L.L.C.:		-0- shares
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.L.C.:		1,087,178 shares
D. E. Shaw & Co., L.P.:		1,090,400 shares
David E. Shaw:		1,090,400 shares
(iii) Sole power to dispose or to direct the disposition of:		
D. E. Shaw & Co., L.L.C.:		-0- shares
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.L.C.:		1,087,178 shares
D. E. Shaw & Co., L.P.:		1,090,400 shares
David E. Shaw:		1,090,400 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 investment adviser of D. E. Shaw Valence Portfolios, L.L.C. and D. E. Shaw Oculus Portfolios, L.L.C. and the managing member of D. E. Shaw Investment Management, 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 Valence Portfolios, L.L.C. and D. E. Shaw Oculus Portfolios, 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 1,090,400 shares as described above constituting 5.3% 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 1,090,400 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.L.C., 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. Powers of Attorney, dated March 1, 2017, granted by David E. Shaw in favor of Nathan Thomas, are attached hereto.

Dated: January 6, 2020

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

By: /s/ Nathan Thomas  
Nathan Thomas  
Authorized Signatory

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

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**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

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Exhibit 2

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 Lebwohl,

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. II, Inc. (acting for itself or as the managing member of D. E. Shaw & Co., L.L.C. 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. II, Inc.  
/s/ David E. Shaw  
New York, New York

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**Exhibit 3**

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, \$0.001 par value, 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 6<sup>th</sup> day of January, 2020.

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

By: /s/ Nathan Thomas  
Nathan Thomas  
Authorized Signatory

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

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