

INTERMOLECULAR INC  
Form SC 13G  
February 13, 2012

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

SCHEDULE 13G

Under the Securities Exchange Act of 1934  
(Amendment No. )\*

INTERMOLECULAR, INC.  
(Name of Issuer)

COMMON STOCK, \$.001 PAR VALUE PER SHARE  
(Title of Class of Securities)

45882D 109  
(CUSIP Number)

December 31, 2011  
(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule 13G 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. 45882D 109

(1) Names of Reporting Persons.

ATMI, Inc.

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

(b)  X

(3) SEC Use Only

(4) Citizenship or Place of Organization: Delaware, United States

Number of Shares Beneficially  
Owned by Each Reporting  
Person With

(5) Sole Voting Power:

(6) Shared Voting Power: 3,857,242

(7) Sole Dispositive Power:

(8) Shared Dispositive Power: 3,857,242

(9) Aggregate Amount Beneficially Owned by Each Reporting Person:

3,857,242

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

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

9.15%1

(12) Type of Reporting Person (See Instructions):

CO

1 Based on 42,133,168 shares of common stock outstanding as disclosed in the Issuer's prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b)(4) of the Securities Act of 1933, as amended, on November 18, 2011.

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CUSIP No. 45882D 109

(1) Names of Reporting Persons.

Advanced Technology Materials, Inc.

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

(b)  X

(3) SEC Use Only

(4) Citizenship or Place of Organization: Delaware, United States

Number of Shares Beneficially  
Owned by Each Reporting  
Person With

(5) Sole Voting Power:	
(6) Shared Voting Power:	3,857,242
(7) Sole Dispositive Power:	
(8) Shared Dispositive Power:	3,857,242

(9) Aggregate Amount Beneficially Owned by Each Reporting Person:

3,857,242

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

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

9.15%

(12) Type of Reporting Person (See Instructions):

CO



Item 1(a). Name Of Issuer:  
Intermolecular, Inc.

Item 1(b). Address of Issuer's Principal Executive Offices:

3011 N. First Street  
San Jose, CA 95134

Item 2(a). Name of Person Filing:

This Schedule 13G is being filed by ATMI, Inc., a Delaware corporation ("ATMI") and its wholly owned subsidiary Advanced Technology Materials, Inc., a Delaware corporation ("Advanced").

Item 2(b). Address of Principal Business Office or, if None, Residence:

The address for each of the Reporting Persons is:

7 Commerce Drive  
Danbury, CT 06810

Item 2(c). Citizenship:

ATMI and Advanced are Delaware corporations.

Item 2(d). Title of Class of Securities: common stock, \$.001 par value per share

Item 2(e). CUSIP No.: 45882D 109

Item 3. If This Statement Is Filed Pursuant to §§240.13d-1(b) or 240.13d-2(b) or (c), check whether the Person Filing is a:

- a.  Broker or dealer registered under Section 15 of the Act;
- b.  Bank as defined in Section 3(a)(6) of the Act;
- c.  Insurance company as defined in Section 3(a)(19) of the Act;
- d.  Investment company registered under Section 8 of the Investment Company Act of 1940;
- e.  An investment adviser in accordance with Rule 13d-1(b)(1)(ii)(E);
- f.  An employee benefit plan or endowment fund in accordance with Rule 13d-1(b)(1)(ii)(F);
- g.  A parent holding company or control person in accordance with Rule 13d-1(b)(1)(ii)(G);
- h.  A savings associations as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);

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i.  A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940;

j.  A non-U.S. institution in accordance with Rule 240.13d-1(b)(1)(ii)(J);

k.  Group, in accordance with Rule 240.13d-1(b)(1)(ii)(K). If filing as a non-U.S. institution in accordance with Rule 240.13d-1(b)(1)(ii)(J),

please specify the type of institution: \_\_\_\_\_

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Item 4. Ownership

- (a) Amount Beneficially Owned: 3,857,242
- (b) Percent of Class: 9.15%
- (c) Number of Shares as to which the person has:

- (i) sole power to vote or to direct the vote:

N/A

- (ii) shared power to vote or to direct the vote:

ATMI may be deemed to have shared voting power with respect to the 3,857,242 shares of common stock directly held by Advanced.

- (iii) sole power to dispose or to direct the disposition of:

N/A

- (iv) shared power to dispose or to direct the disposition of:

ATMI may be deemed to have shared dispositive power with respect to the 3,857,242 shares of common stock directly held by Advanced.

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

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the owner of more than five percent of the class of securities, check the following: [ ].

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

Not Applicable.

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SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: February 13, 2012

ATMI, Inc.

By: /s/ Timothy C. Carlson  
Name: Timothy C. Carlson  
Title: Executive Vice President  
& CFO

ADVANCED TECHNOLOGY MATERIALS,  
INC.

By: /s/ Timothy C. Carlson  
Name: Timothy C. Carlson  
Title: Executive Vice President  
& CFO

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EXHIBIT A  
JOINT FILING AGREEMENT

The undersigned hereby agree that the statement on Schedule 13G with respect to the common stock of Intermolecular, Inc. dated as of February 13, 2012 is, and any further amendments thereto signed by each of the undersigned shall be, filed on behalf of each of the undersigned pursuant to and in accordance with the provisions of Rule 13d-1(k) under the Securities Exchange Act of 1934, as amended.

Dated: February 13, 2012

ATMI, Inc.

By: /s/ Timothy C. Carlson  
Name: Timothy C. Carlson  
Title: Executive Vice President  
& CFO

ADVANCED TECHNOLOGY MATERIALS,  
INC.

By: /s/ Timothy C. Carlson  
Name: Timothy C. Carlson  
Title: Executive Vice President  
& CFO