



DIVISION OF
CORPORATION FINANCE

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

October 19, 2011

Via E-mail

David Lazovsky
President and Chief Executive Officer
Intermolecular, Inc.
3011 N. First Street
San Jose, CA 95134

**Re: Intermolecular, Inc.
Amendment No. 3 to Registration Statement on Form S-1
Filed October 14, 2011
File No. 333-175877**

Dear Mr. Lazovsky:

We have reviewed your registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

Cover Page

1. With a view toward revising the graphics following the prospectus cover page, please tell us the extent to which you have generated revenue from the development of products reflected in your pictures. Also, tell us why it is appropriate to include the captions "clean energy," "energy efficiency" and "LED" and the respective pictures, given your disclosure in the last sentence of the second paragraph on page 1.

Summary Consolidated Financial Data, page 8

2. If true, in footnote 4, please clarify that the amount of the loan payable to Symyx is based upon the midpoint of the price range. Also provide additional information to assist an investor in understanding how changes in the offering price may impact the amount of the loan.

Note 13. Subsequent Events, page F-36

3. In light of your response to prior comment 4 indicating that Symyx is a beneficial owner of approximately 10.9% of your common stock, please tell us why you do not consider Symyx to be a related party effective May 2011. Refer to ASC 850-10 and the definition of principal owner.
4. With respect to prior comment 6, please tell us your consideration of whether a pro forma statement of operations adjusted for the Symyx transaction would be impacted by reduced royalty expenses, increased amortization for intangible assets, increased interest expenses and the related tax effects.
5. We note that the arrangement discussed in your response to prior comment 7 encompasses multiple aspects, including for example (i) the sale of stock, (ii) a price guarantee, and (iii) a future transfer of intangible assets. Please tell us how you viewed the separate aspects of the arrangement in determining your accounting. Discuss your consideration of accounting for these aspects separately at the appropriate time that US GAAP would require recognition as opposed to one interdependent transaction where all aspects must be recorded at the same time.
6. Tell us how you determined that the amount of guaranteed minimum proceeds from the sale of your shares held by Symyx should be \$67 million.
7. Further to your response to comment 7, please respond to the following:
 - Provide us with a more robust accounting analysis that supports your conclusion that you should record an asset reflecting your right under the agreement to receive the Symyx patents upon the occurrence of the IPO.
 - Describe to us in more detail your reasons for concluding that the Patent Right meets the definition of a contractual intangible asset.
 - Tell us how you will determine the value of the Symyx patents you will acquire upon occurrence of the IPO. Discuss your consideration of SAB Topic 5.G as part of that determination.
8. Further to your response to comment 8, please tell us the following assumptions used in your valuation:
 - The probability of an IPO;
 - The volatility;
 - The value of the company's stock price;
 - The timing of an expected IPO;
 - Proceeds from the IPO; and
 - The obligation to pay a portion of Symyx's selling costs.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Dennis Hult at (202) 551-3618 or Kaitlin Tillan, Assistant Chief Accountant, at (202) 551-3604 if you have questions regarding comments on the financial statements and related matters. Please contact Louis Rambo at (202) 551-3289 or Tim Buchmiller, reviewing attorney, at (202) 551-3635 with any other questions.

Sincerely,

/s/ Martin James for

Amanda Ravitz
Assistant Director

cc (via e-mail): Patrick A. Pohlen, Esq.
Latham & Watkins LLP