

Mail Stop 4561

April 13, 2006

Matthew Foster  
Ascent Solar Technologies, Inc.  
8120 Shaffer Parkway  
Littleton, CO 80127

**RE: Ascent Solar Technologies, Inc.  
Registration Statement on Form SB-2/A  
File No. 333-131216  
Amendment Filed on March 13, 2006**

Dear Mr. Foster:

We have reviewed your filing and have the following comments in addition to those released on March 31, 2006. Where indicated, we think you should revise your document in response to these comments.

Prospectus Summary

1. Please refer to comments 7 and 8 in our letter dated February 17, 2005. We have reviewed your response where you indicate that paragraphs 14-18 in EITF 00-19 “suggest” that if the registration statement does not preclude delivery of unregistered shares against the contract and if the contract permits delivery of either registered or unregistered shares then one should classify the contract as equity. Paragraph 18 of EITF 00-19, however, states that if a derivative involves the delivery of shares at settlement that are registered as of the inception of the derivative transaction (e.g. this offering) and there are no further timely filing or registration requirements, then share delivery is within control of the issuer. Given that the offer and sale of the warrants and the securities underlying the warrants are included in the “units” being registered, the offer and sale of the underlying securities are registered at the time of effectiveness and at the inception of the securities. The Company will be required to timely file updates to its registration statement and deliver a current prospectus at the time such warrants are exercised. The requirements to timely file are not considered to be within your control and you therefore do not meet the requirements of paragraph 18 of EITF 00-19. Such warrants should accordingly be classified as liabilities, initially measured at fair value, with changes in fair value reported in earnings and

disclosed in the financial statements. Paragraph 18 of EITF 00-19 contemplated securities laws requirements and the fact remains that the timely filing requirements of the Securities Act of 1933 precludes you from classifying the warrants in equity. Tell us how you plan on complying with EITF 00-19 in your classification of the warrants based on the information above and tell us how you plan on valuing this liability at the time of the sale of the "units." Also, revise your disclosures throughout the document to clearly indicate that such warrants will be included in liabilities and will be revalued on a quarterly basis. Your disclosures should also address the fact that the changes in fair value will have a direct impact on the Company's results of operations.

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As appropriate, please amend your registration statement in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested supplemental information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

You may contact at Patrick Gilmore at (202) 551-3406 if you have questions regarding comments on the financial statements and related matters. Questions on other disclosure issues may be directed to Jay Ingram at (202) 551-3397. If you require further assistance, please contact me at (202) 551-3462, or the Assistant Director, Barbara C. Jacobs at (202) 551-3735.

Sincerely,

Mark P. Shuman  
Branch Chief

cc. Mark A. von Bergen *via telecopier*  
(503) 241-8014