



UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549-7010

DIVISION OF  
CORPORATION FINANCE

August 23, 2006

Mail Stop 7010

*By U.S. Mail and facsimile to (212) 930-9725*

Robert Rubin  
Chief Executive Officer  
Solar Thin Films, Inc.  
108 Village Square, Suite 327  
Somers, NY 10589

**Re: Solar Thin Films, Inc.  
Registration Statement on Form SB-2  
Filed July 27, 2006  
File No. 333-136060**

**Information Statement on Schedule 14C  
Filed July 27, 2005  
File No. 001-13549**

**Response to comment letter on Form 10-K for the year ended  
December 31, 2005 dated June 9, 2006  
Submitted July 25, 2006**

**Current Report on Form 8-K  
Filed July 17, 2006**

Dear Mr. Rubin:

We have reviewed your filings and have the following comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure. After reviewing this information, we may raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We

welcome any questions you may have about our comments or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Registration Statement on Form SB-2  
General

1. We are in receipt of the information provided in your letters dated July 28, 2006 and August 10, 2006 regarding the proper characterization of the pending transaction. Please be advised that our review of this issue continuing and we may request additional information in the future.
2. Please update all information in the registration statement to the latest practicable date.

Cover Page

3. Please revise your fee table to reconcile the number of shares you are registering to your discussion under Selling Stockholders. For example, the fee table lists 8,059,200 shares of common stock being registered, whereas the footnotes to your selling stockholders' table indicates that an aggregate of 8,179,200 shares are being registered for resale. In addition, please indicate by footnote the transactions in which the shares of common stock and shares underlying convertible notes were sold to investors. Please also re-label the top line of the fee table to indicate that the shares being registered underlie convertible notes, rather than debentures.

Selling Stockholders, page 13

4. Please tell us whether any of the selling security holders are broker-dealers or affiliates of broker-dealers. Revise the prospectus to name the selling security holders who are broker-dealers and state that they are underwriters with respect to the shares that they are offering for resale.
5. If any selling security holders are affiliates of broker-dealers, disclose the following:
  - that the selling security holders purchased in the ordinary course of business; and
  - that, at the time of purchase of the securities to be resold, the seller had no agreements or understandings, directly or indirectly, with any person to distribute the securities.

If these selling security holders are unable to make these representations, please state that they are underwriters.

6. It appears that the aggregate number of shares represented in the shares included in the prospectus column of the table is 21,096,700 shares, rather than the 22,046,700 shares being registered and that are represented in the total line of the table. Please advise and revise as appropriate.
7. We note that the aggregate number of shares listed in the footnotes of the Group A shareholders differ from those represented in the selling stockholders' table for each selling stockholder. Please revise the footnotes to clearly indicate the source of the securities being registered for resale. In addition, we note that the number of shares underlying the Class D Common Stock Purchase Warrants for Kuekenhof Equity Fund exceeds the number of shares underlying other classes of warrants by the same number that the aggregate number of warrants described in the footnotes to the table exceeds the number of shares underlying warrants listed in the fee table. Please revise.
8. We also note your statement on page 19 that 1,139,200 shares were sold to Group C selling stockholders in late 2005 and early 2006, while selling stockholders' table indicates that you are registering 1,419,200 shares for these shareholders. Please advise.
9. Please revise your discussion of the Group A investors to disclose whether any have converted the September 2005 Notes. To the extent that there have been conversions of the September 2005 Notes, please disclose the date of conversion, the market price on that date, and the number of shares of common stock issued to the investor.
10. Please delete the information in the parentheses at the end of footnote number 1. This information is confusing because there is no time parameter to provide a reference for the reader.

Group A, page 19

11. Please disclose in what circumstances, if any, the Floor Price can be adjusted.

Description of Business, page 24

Business Overview, page 25

12. Please disclose the relationship with TerraSolar.

Product Development – PV Modules on Glass Substrate, page 25

13. Your statement in this section that there is ongoing R&D activity appears to contradict the information on page 30 that you have spent \$0 on R&D in 2005 and the three months ended March 31, 2006. Please advise.

Market, page 26

14. Please provide us with the basis for your statements that “the PV industry is currently growing from infancy to adolescence,” “the energy industry is moving in a large part from fossil fuels to alternative sources,” and that “PV electricity costs are expected to be lower than fossil fuel generated electricity by 2010.”

Property, page 28

15. Please explain the significant decrease in rent expense between 2004 and 2005.

Legal Proceedings, page 28

16. In the third paragraph, please quantify the amount of the loan that is past due.

Directors and Executive Officers, Promoters and Control Persons, page 34

17. Please revise your discussion of Mr. Kiss’ business experience to discuss his business activities over the past five years. See Regulation S-B, Item 401(a)(4).

Information Statement on Schedule 14C

One for 1.6 Reverse Stock Split, page 6

18. Please revise this section to disclose your reason for engaging in the reverse stock-split in tandem with increasing the number of authorized shares of common stock.

Response to Comment Letter on Form 10-K for the Year Ended December 31, 2005

General

19. Where a comment below requests additional disclosures or other revisions to be made, please show us in your supplemental response what the revisions will look like. With the exception of the comments below that specifically request an amendment, all other revisions may be included in your future filings.
20. Please also revise the financial statements contained in your Registration Statement on Form SB-2 and Information Statement on Schedule 14C to reflect the following comments.

Financial Statements

Note 4 – Other Short Term Borrowings, page F-15

21. Given that it does not appear that the \$525,000 Senior Secured Convertible Notes are convertible into a fixed number of shares, please provide us with a comprehensive explanation as to the consideration given to SFAS 150, SFAS 133, and EITF 00-19 in determining the appropriate accounting for the conversion feature.
22. We have reviewed your response to prior comment 7. As previously requested, please tell us how you determined it was appropriate to record a debt discount related to the 525,000 shares.

Note 8 – Stockholders Equity, page F-18

23. We have reviewed your response to prior comment 10. Please provide us with a comprehensive explanation as to how you accounted for your convertible preferred stock. Your explanation should include the following:
  - Tell us how you determined it was appropriate to classify the convertible preferred stock as equity in accordance with SFAS 150;
  - Tell us how you determined the conversion feature is not a derivative in accordance with SFAS 133 as well as what consideration was given to EITF 00-19 in determining the appropriate accounting for the conversion feature;
  - If you continue to believe that you do not need to account for the conversion option pursuant to SFAS 133 or EITF 00-19, please provide us with detailed computations which support your conclusion that there are no beneficial conversion features. Please refer to EITF 98-5 and EITF 00-27, with particular attention to paragraphs 5 to 7 of EITF 00-27; and
  - Please also perform this analysis regarding the 95,000 shares of convertible preferred stock you issued to the shareholders of Kraft RT.

Exhibit 31

24. We have reviewed your response to prior comment 12. Please file an amendment to your Form 10-K to include certifications that conform to the format provided in Item 601(b)(31) of Regulation S-K and refer to the appropriate locations for the definitions. In doing so, please refile the Form 10-K in its entirety.

Exhibit 32

25. We have reviewed your response to prior comment 13. Please file an amendment to your Form 10-K to include certifications that refer to the annual report, instead of quarterly report. In doing so, please refile the Form 10-K in its entirety.

Current Report on Form 8-K Filed July 17, 2006  
Pro Forma Consolidated Balance Sheet, page F-22

26. Please tell us why you believe it is appropriate to adjust your additional paid in capital account balance to zero.
27. Please present your historical, pro forma and pro forma as adjusted shares authorized, issued and outstanding on the face of your pro forma balance sheet.

Pro Forma Consolidated Statement of Operations, page F-23

28. Please help us understand how you arrived at your pro forma weighted average number of shares. We remind you that the historical financial statements (Kraft RT) are required to reflect the shares issued by Solar Thin Films to acquire Kraft RT as outstanding for all periods presented in a manner similar to a stock split. Please reconcile in a footnote the historical weighted average common shares outstanding to the pro forma weighted average common shares outstanding for both your basic and diluted earnings per share computations. Please also disclose any shares not included for anti-dilution reasons.
29. Please tell us how you determined it was appropriate to include the \$2,599,819 of organization costs in your pro forma statement of operations in accordance with Rule 11-02(b)(5) of Regulation S-X.

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 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.

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 all information required under the Securities Act of 1933 and that they have provided all information investors require for an informed investment decision. 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 the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, 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.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in connection with our review of your filing or in response to our comments on your filing.

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. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

You may contact Jeff Gordon, Staff Accountant, at (202) 551-3866 or Nudrat Salik, Senior Staff Accountant, at (202) 551-3692 if you have questions regarding comments on the financial statements and related matters. Please contact Matt Franker, Staff Attorney, at (202) 551-3749 or Chris Edwards, Special Counsel, at (202) 551-3742 with any other questions. Alternatively, you may contact me at (202) 551-3760.

Sincerely,

Pamela A. Long  
Assistant Director

Robert Rubin  
Solar Thin Films, Inc.  
August 23, 2006  
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cc: Richard A. Friedman, Esq.  
Stephen M. Fleming, Esq.  
Sichenzia Ross Friedman Ference LLP  
1065 Avenue of the Americas  
New York, New York 10018