

Ascent Solar Technologies, Inc.  
Form S-8  
June 28, 2012

As filed with the Securities and Exchange Commission on June 28, 2012.  
Registration Number 333-\_\_\_\_\_

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

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FORM S-8  
REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933

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ASCENT SOLAR TECHNOLOGIES, INC.  
(Exact name of registrant as specified in its charter)

|   |   |
|---|---|
| Delaware<br>(State or other jurisdiction of<br>incorporation or organization) | 20-3672603<br>(I.R.S. employer<br>Identification No.) |
|---|---|

|  |                     |
|--|---------------------|
| 12300 North Grant Street<br>Thornton, Colorado<br>(Address of principal executive offices) | 80241<br>(Zip code) |
|--|---------------------|

Third Amended and Restated 2008 Restricted Stock Plan  
(Full title of the plan)

Gary Gatchell  
12300 North Grant Street  
Thornton, Colorado 80241  
(Name and address of agent for service)

(720) 872-5000  
(Telephone number, including area code, of agent for service)

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Copy to:  
James Carroll  
Charles Cotter  
Faegre Baker Daniels LLP  
1470 Walnut Street, Suite 300  
Boulder, Colorado 80304  
(303) 447-7700

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act. (Check one):

|                         |   |                           |                                  |
|-------------------------|---|---------------------------|----------------------------------|
| Large accelerated filer | <input type="radio"/>   | Accelerated filer         | <input type="radio"/>            |
| Non-accelerated filer   | <input type="radio"/> (Do not check if a smaller reporting company) | Smaller reporting company | <input checked="" type="radio"/> |

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CALCULATION OF REGISTRATION FEE

| Title of securities to be registered       | Amount to be registered <sup>(1)</sup> | Proposed maximum offering price per share <sup>(2)</sup> | Proposed maximum aggregate offering price <sup>(2)</sup> | Amount of registration fee |
|--|--|--|--|----------------------------|
| Common Stock, par value \$0.0001 per share | 1,000,000 shares                       | \$0.79   | \$790,000  | \$90.53                    |

1 Pursuant to Rule 416 under the Securities Act of 1933, as amended (the “Securities Act”), this Registration Statement will also cover any additional shares of common stock of Ascent Solar Technologies, Inc. that become issuable under the Third Amended and Restated 2008 Restricted Stock Plan by reason of any stock dividend, stock split, reorganization or other similar transaction effected without the registrant's receipt of consideration that results in an increase in the number of outstanding shares of the registrant's common stock..

2 Estimated solely for purposes of calculating the registration fee. Based on the average high and low prices reported on the NASDAQ Global Market on June 26, 2012, pursuant to Rule 457(c) and (h)(1).

EXPLANATORY NOTE

This Registration Statement on Form S-8 (this “Registration Statement”) is being filed to register an additional 1,000,000 shares of common stock, par value \$0.0001 per share (“Common Stock”), of Ascent Solar Technologies, Inc. (the “Company”) available for issuance under the Company's 2008 Restricted Stock Plan, as amended and restated (the “Plan”). The Company registered 750,000 shares of Common Stock for issuance under the Plan on a Registration Statement on Form S-8 (File No. 333-152643) (the “Initial Registration Statement”), filed with the Securities and Exchange Commission (the “Commission”) on July 30, 2008 and 800,000 shares of Common Stock for issuance under the Plan on a Registration Statement on Form S-8 (File No. 333-171356) (the “Second Registration Statement”), filed with the Commission on December 22, 2010. Pursuant to General Instruction E of Form S-8, the Initial Registration Statement is incorporated herein by reference, except that provisions contained in Part II of the Initial Registration Statement are modified as set forth in the Second Registration Statement and herein.

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Part II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference

The Company hereby incorporates by reference in this Registration Statement the following documents filed with the Commission:

- (a) the Company's Annual Report on Form 10-K for the year ended December 31, 2011;
- (b) the Company's Quarterly Report on Form 10-Q filed on May 10, 2012;
- (c) the Company's Current Reports on Form 8-K filed on January 5, February 3, April 2, April 13, April 16, April 20, June 7 and June 22, 2012, to the extent filed and not furnished; and
- (d) the description of the Company's common stock contained in Forms 8-A filed on June 19, 2006 and August 8, 2006 and any amendments or reports filed for the purpose of updating such description.

In addition, all other reports and documents filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act subsequent to the date of this Registration Statement (except for portions of the Company's current reports furnished, as opposed to filed, on Form 8-K), and prior to the filing of a post-effective amendment that indicates that all the securities offered have been sold or that deregisters all securities then remaining unsold, shall be deemed to be incorporated herein by reference and to be a part hereof from the date of the filing of such documents with the Commission.

Any statement contained in a document incorporated, or deemed to be incorporated, by reference in this Registration Statement shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained in this Registration Statement or incorporated by reference or in any other subsequently filed document that also is or is deemed to be incorporated by reference modifies or supersedes the statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

Item 8. Exhibits

Exhibit No. Description

- |      |  |
|------|--|
| 3.1  | Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.2 to the Company's Registration Statement on Form SB-2 filed January 23, 2006 (Reg. No. 333-131216), as amended) |
| 3.2  | Certificate of Amendment to the Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2011) |
| 3.3  | Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 to the Company's Current Report on form 8-K filed February 17, 2009)  |
| 3.4  | First Amendment to Second Amended and Restated Bylaws (incorporated by reference to Exhibit 3.3 to the Company's Quarterly Report on Form 10-Q filed November 5, 2009)                                     |
| 4.1  | Form of Common Stock Certificate (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form SB-2 filed January 23, 2006 (Reg. No. 333-131216), as amended)                  |
| 5.1  | Opinion of Faegre Baker Daniels LLP  |
| 10.1 | Third Amended and Restated 2008 Restricted Stock Plan (incorporated by reference to Appendix A to the Company's Definitive Proxy Statement filed April 18, 2012)   |

23.1 Consent of Hein and Associates LLP

23.2 Consent of Faegre Baker Daniels LLP (included in Exhibit 5.1)

Item 9. Undertakings.

A. Post-Effective Amendments.

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The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(a) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(b) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which is registered) and deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(c) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement; provided, however, that paragraphs (a) and (b) above will not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act that are incorporated by reference in this registration statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

#### B. Subsequent Documents Incorporated by Reference.

The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

#### C. Claims for Indemnification.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or other controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

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**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Thornton, State of Colorado, on June 28, 2012.

**ASCENT SOLAR TECHNOLOGIES, INC.**

By: /s/ Victor Lee  
 Lee Kong Hian (aka Victor Lee)  
 President and Chief Executive Officer

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Gary Gatchell, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him or her and on his or her behalf to sign any and all amendments (including, without limitation, post-effective amendments) to this Registration Statement, and to file the same, with all exhibits thereto and any documents required to be filed with respect therewith, with the Securities and Exchange Commission or any regulatory authority, granting unto such attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith and about the premises in order to effectuate the same as fully to all intents and purposes as he or she might or could do if personally present, hereby ratifying and confirming all that such attorney-in-fact and agent or his substitute may lawfully do or cause to be done. Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

|  |  |               |
|--|--|---------------|
| /s/ Victor Lee<br>Lee Kong Hian (aka Victor Lee) | President, Chief Executive Officer and<br>Director (Principal Executive Officer) | June 28, 2012 |
| /s/ Gary Gatchell<br>Gary Gatchell               | Chief Financial Officer<br>(Principal Financial and Accounting Officer)          | June 28, 2012 |
| /s/ Amit Kumar<br>Amit Kumar, Ph.D.              | Chairman   | June 28, 2012 |
| /s/ Kim Huntley<br>Kim J. Huntley                | Director   | June 28, 2012 |
| /s/ G. Thomas Marsh<br>G. Thomas Marsh           | Director   | June 28, 2012 |
| /s/ Xu Biao<br>Winston Xu (aka Xu Biao)          | Director   | June 28, 2012 |