

Ascent Solar Technologies, Inc.
 Form 4
 March 23, 2011

FORM 4

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

OMB APPROVAL

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Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person *
MARSH G THOMAS

2. Issuer Name and Ticker or Trading Symbol
**Ascent Solar Technologies, Inc.
 [ASTI]**

5. Relationship of Reporting Person(s) to Issuer
 (Check all applicable)

(Last) (First) (Middle)
C/O ASCENT SOLAR TECHNOLOGIES, INC., 12300 GRANT STREET

3. Date of Earliest Transaction (Month/Day/Year)
03/21/2011

Director 10% Owner
 Officer (give title below) Other (specify below)

(Street)
THORNTON, CO 80241

4. If Amendment, Date Original Filed(Month/Day/Year)

6. Individual or Joint/Group Filing(Check Applicable Line)
 Form filed by One Reporting Person
 Form filed by More than One Reporting Person

(City) (State) (Zip)

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) | 4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|--|-----------------------------------|
| | | | | (A) or (D) Price | | | |
| | | | Code V | Amount | (D) Price | | |
| Common Stock | 03/21/2011 | | M | 4,092 | A \$ 0 (1) | 11,836 | D |

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

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| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5) | 6. Date Exercisable and Expiration Date (Month/Day/Year) | 7. Title and Amount of Underlying Securities (Instr. 3 and 4) | 8. Price or Value of Underlying Securities (Instr. 3 and 4) |
|--|--|--------------------------------------|--|--------------------------------|---|--|---|---|
| Restricted Stock Units | (1) | 03/21/2011 | | M | 4,092 | (2) (2) | Common Stock | 4,092 |

Reporting Owners

| Reporting Owner Name / Address | Relationships | | | |
|---|---------------|-----------|---------|-------|
| | Director | 10% Owner | Officer | Other |
| MARSH G THOMAS C/O ASCENT SOLAR TECHNOLOGIES, INC. 12300 GRANT STREET THORNTON, CO 80241 | X | | | |

Signatures

/s/ Jason Day,
Attorney-in-Fact

03/23/2011

**Signature of Reporting Person

Date

Explanation of Responses:

* If the form is filed by more than one reporting person, see Instruction 4(b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

(1) Each restricted stock unit represents a contingent right to receive one share of the issuer's common stock.

(2) The restricted stock units vest in four equal installments on March 21, 2011, June 20, 2011, September 19, 2011 and December 19, 2011.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

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