

Misra Mohan
 Form 4
 February 16, 2010

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 *
 Misra Mohan

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)

3. Date of Earliest Transaction (Month/Day/Year)
 02/16/2010

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

C/O ASCENT SOLAR TECHNOLOGIES, INC., 12300 GRANT STREET

(Street)

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

THORNTON, CO 80241

(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 | | |
| Common Stock | 02/16/2010 | | S ⁽¹⁾ | V | 10,000 | D | \$ 4.45 479,993 ⁽²⁾ D |
| Common Stock | 02/16/2010 | | S ⁽¹⁾ | V | 20,000 | D | \$ 4.45 786,000 I ⁽³⁾ See Footnote 3 |

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

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SEC 1474 (9-02)

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

| 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 of Derivative Security (Instr. 5) | 9. Number of Derivative Securities Owned Following Reporting Transaction (Instr. 6) |
|--------------------------------------------|--------------------------------------------------------|--------------------------------------|----------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------|
| | | | | Code | V (A) (D) | Date Exercisable | Expiration Date | Title | Amount or Number of Shares |

Reporting Owners

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

Signatures

David C. Wang, as attorney-in-fact for Mohan Misra
Date: 02/16/2010

__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) The transactions reported in this Form 4 were effected pursuant to Rule 10b5-1 trading plans adopted by the reporting person and ITN Energy Systems, Inc. on January 13, 2010.
- (2) Dr. Misra also directly holds the following derivative securities: vested options to purchase 50,000 shares of common stock that expire on November 18, 2015; vested options to purchase 40,000 shares of common stock that expire on December 2, 2018; unvested options to purchase 40,000 shares of common stock that expire on December 2, 2018; and 50,000 unvested restricted stock units. Each restricted stock unit represents a contingent right to receive one share of the Issuer's common stock.
- (3) Dr. Misra indirectly holds the shares of the Issuer's common stock held by ITN Energy Systems, Inc., which is wholly owned by Inica, Inc., a Colorado corporation that is owned by Dr. Misra and an immediate family member.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure. Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.