

Ascent Solar Technologies, Inc.
Form 424B3
September 08, 2009
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Registration Statement No. 333-152643

PROSPECTUS SUPPLEMENT NO. 2 DATED SEPTEMBER 8, 2009

(TO PROSPECTUS DATED JULY 30, 2008)

ASCENT SOLAR TECHNOLOGIES, INC.

364,044 shares of common stock

This Prospectus Supplement No. 2 (Prospectus Supplement) amends and supersedes the Prospectus dated July 30, 2008 and Prospectus Supplement No. 1 dated June 10, 2009 (together, the Prospectus), and relates to the reoffer and resale by officers, directors and employees of Ascent Solar Technologies, Inc. (the Company) of up to 404,044 shares of the Company s common stock, \$0.0001 par value, that are defined as control securities or restricted securities under Instruction C to Form S-8 (the Shares). These officers, directors and employees (Selling Shareholders) acquired or may acquire the Shares pursuant to grants of restricted stock units (RSUs) or restricted stock under the Company s 2008 Restricted Stock Plan (the Stock Plan). This Prospectus Supplement should be read in conjunction with the Prospectus, which is to be delivered with this Prospectus Supplement.

The Selling Shareholders will determine when they will sell their Shares, and may sell their Shares at the then-prevailing market price or at prices negotiated at the time of sale. We will not receive any proceeds from these sales. The brokers and dealers that the Selling Shareholders may utilize in selling their Shares may receive compensation in the form of underwriting discounts, concessions or commissions from the sellers or purchasers of the Shares.

Our common stock is traded on the Nasdaq Global Market under the symbol ASTI . On September 3, 2009, the last reported sale price of our common stock on the Nasdaq Global Market was \$5.67 per share.

Our principal executive offices are located at 12300 Grant Street, Thornton, Colorado 80241.

Investing in the Shares involves risks. See Risk Factors beginning on page 2.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ADEQUACY OR ACCURACY OF THIS PROSPECTUS SUPPLEMENT. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE .

The date of this Prospectus Supplement is September 8, 2009.

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You should rely only on the information contained in, or incorporated by reference into, the Prospectus, this Prospectus Supplement, and in any other prospectus supplement or amendment. We have not authorized any other person to provide you with different information. Information contained on our website does not constitute a part of the Prospectus or this Prospectus Supplement. The information in this Prospectus Supplement may only be accurate as of the date appearing on the cover page of this Prospectus Supplement, regardless of the time this Prospectus Supplement is delivered or common stock is sold.

Trademarks, service marks or trade names of any other companies appearing in this Prospectus Supplement are the property of their respective owners. Use or display by us of trademarks, service marks or trade names owned by others is not intended to and does not imply a relationship between us, and or endorsement or sponsorship by, the owners of the trademarks, service marks or trade names.

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PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights information contained in this Prospectus Supplement. While we believe that this summary highlights some of the most important information about Ascent Solar Technologies, Inc. and this offering, you should read the entire Prospectus, this Prospectus Supplement and the documents incorporated by reference carefully, including Risk Factors, before deciding to invest in our common stock. References to we, us, our, Ascent, Ascent Solar or the Company in this Prospectus Supplement mean Ascent Solar Technologies, Inc.

Business Overview

We are a development stage company formed in October 2005 to commercialize flexible photovoltaic (PV) modules using proprietary technology. Our technology was initially developed at ITN Energy Systems, Inc. (ITN) by our founder and core scientific team beginning in 1994 and subsequently assigned and licensed to us. Our proprietary manufacturing process deposits multiple layers of materials, including a thin film of highly efficient copper-indium-gallium-diselenide (CIGS) semiconductor material, on a flexible, lightweight, plastic substrate and then laser patterns the layers to create interconnected PV cells, or PV modules, in a process known as monolithic integration. We believe that our technology and manufacturing process provide us with significant advantages over both the crystalline silicon (c-Si) based PV manufacturers that currently dominate the PV market, as well as other thin-film PV manufacturers that use rigid and/or heavier substrate materials such as glass, stainless steel or other metals. Our target markets include the building integrated PV market, the electronic integrated PV market, the military and governmental portable power market, and space and near-space markets.

We are incorporated under the laws of Delaware, our principal business office is located at 12300 Grant Street, Thornton, Colorado 80241, and our telephone number is (720) 872-5000. Our website address is www.ascentsolar.com. Information contained on our website or any other website does not constitute part of the Prospectus or this Prospectus Supplement.

This Offering

Shares of common stock offered by Selling Shareholders	364,044
Offering price	The Selling Shareholders and any of their pledgees, assignees and successors-in-interest may sell any or all of their Shares on any stock exchange, market or trading facility on which the securities are traded or in private transactions. The sales may be at fixed or negotiated prices.
Nasdaq Global Market Symbol	ASTI

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RISK FACTORS

An investment in our securities involves a high degree of risk and many uncertainties discussed in the section entitled "Risk Factors" in our annual report on Form 10-K for the year ended December 31, 2008. You should carefully consider the risk factors before purchasing our securities. If one or more of the possibilities described as risks actually occur, our operating results and financial condition would likely suffer and the trading price of our securities could fall, causing you to lose some or all of your investment in the securities being offered.

FORWARD-LOOKING STATEMENTS

This Prospectus Supplement includes forward-looking statements that involve risks and uncertainties. Forward-looking statements include statements concerning our plans, objectives, goals, strategies, future events, future net sales or performance, capital expenditures, financing needs, plans or intentions relating to acquisitions, business trends and other information that is not historical information. When used in this Prospectus Supplement, the words estimates, expects, anticipates, projects, plans, intends, believes, forecasts, foresees, likely, target and variations of such words or similar expressions are intended to identify forward-looking statements. All forward-looking statements are based upon information available to us on the date of this Prospectus Supplement.

These forward-looking statements are subject to risks, uncertainties and other factors, many of which are outside of our control, that could cause actual results to differ materially from the results discussed in the forward-looking statements, including, among other things, the matters discussed in our annual report in the sections captioned "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations." Factors you should consider that could cause these differences are:

Our limited operating history and lack of profitability;

Our ability to secure equity or debt or other financing necessary to fund our operations and the acquisition of additional operating capacity;

Our ability to meet the cost and performance metrics that we have forecasted;

Our ability to develop demand for, and sales of, our photovoltaic modules and establish strategic relationships with key partners, including original equipment manufacturers, system integrators and distributors;

Our ability to obtain necessary or desired certifications for our photovoltaic modules;

Whether we receive timely delivery of production tools from our equipment suppliers;

Our ability to design, purchase, install, qualify and operate production tools pursuant to our business plan and within budgeted amounts;

The extent to which we are able to reduce the per watt manufacturing costs of our photovoltaic modules, and the extent to which our competitors are able to do the same with their photovoltaic modules;

Global demand for electricity and the market for renewable energy, including solar energy;

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The cost-effectiveness of photovoltaic-generated energy relative not only to that generated from conventional sources such as fossil fuels, but also to that generated from other renewable sources which include wind, biomass, geothermal and tidal power;

The availability of, or changes to, government policies, subsidies and incentives that affect the use or cost of renewable energy;

The emergence of disruptive or competing technologies in the energy industry;

Our competitive position and that of our photovoltaic modules relative to others in the photovoltaic and thin-film markets;

The extent to which our interests align with or deviate from that of Norsk Hydro Produksjon AS, our largest stockholder, and its affiliates;

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Foreign currency exchange fluctuations, political instability in certain foreign markets or the general state of geopolitical affairs;

The supply and price of equipment, components and raw materials;

The status of our relationship with ITN Energy Systems, Inc.;

Our ability to attract and retain key executives and employees;

Our continued investment in research and development, and our ability to remain competitive through development of new technologies;

The extent to which we are able to manage the expansion of our operations effectively, both domestically and abroad;

Commencement of legal proceedings against us or by us, including proceedings relating to environmental matters or intellectual property rights;

Our ability to expand and protect the intellectual property portfolio that relates to our photovoltaic modules and processes;

The extent to which we qualify to perform research and development under the federal government's Small Business Innovation Research program; and

General economic and business conditions.

There may be other factors that could cause our actual results to differ materially from the results referred to in the forward-looking statements. We undertake no obligation to publicly update or revise forward-looking statements to reflect subsequent events or circumstances after the date made or to reflect the occurrence of unanticipated events, except as required by law.

Table of Contents**SELLING SHAREHOLDERS**

This Prospectus Supplement, like the Prospectus, relates to Shares that are being registered for reoffers and resales by the Selling Shareholders. The Selling Shareholders are either holders of restricted securities acquired under the Stock Plan or directors, officers or others who may be deemed to be affiliates who acquired or may acquire Shares under the Stock Plan. The Selling Shareholders may resell any or all of the Shares at any time while the Prospectus and this Prospectus Supplement are current.

Name	Position	Number of Shares Beneficially Owned Prior to the Offering(1)	Number of Shares Eligible to be Offered by the Selling Shareholders(2)	Number of Shares Beneficially Owned After Completion of the Offering(3)	Percentage of the Class Owned After Completion of the Offering(3)
Farhad Moghadam, Ph.D.	President, CEO and Director	14,000	104,000		*
Prem Nath, Ph.D.	SVP of Production Operations and Technology	97,667	70,000	97,667	*
Mohan S. Misra, Ph.D.	CSO and Chairman of the Board	1,311,000(5)	105,000	1,256,000(5)	5.8%
Stanley A. Gallery	Director	131,656	20,805	114,906	*
Richard J. Swanson	Director	28,684	16,540	16,000	*
T. W. Fraser Russell, Ph.D.	Director	34,724	13,782	24,000	*
Amit Kumar, Ph.D.	Director	22,552	18,075	8,000	*
Joel S. Porter (4)	Director	15,982	10,982	5,000	*
Richard Erskine	Director	16,149	1,918	15,190	*
Ron Eller	Director	3,971	2,942	2,500	*

* Represents less than 1%.

- (1) Includes shares of common stock beneficially owned or that may be acquired upon exercise of options or warrants exercisable within sixty (60) days of August 3, 2009.
- (2) Represents the number of Shares granted under the Stock Plan in the form of restricted stock or RSUs, whether currently vested or unvested.
- (3) Assumes the resale of all Shares acquired by the Selling Shareholders pursuant to the Stock Plan and that a total of 21,515,305 shares of common stock will be issued and outstanding after this offering. Excludes all securities held after resale that do not vest within 60 days of August 3, 2009.
- (4) Effective June 30, 2009, Mr. Porter ceased to be a director of the Company. However, pursuant to SEC rules, Mr. Porter is deemed to be an affiliate of the Company for a period of 90 days following his departure from the Company.
- (5) Includes 806,000 shares of common stock held by ITN Energy Systems, Inc., which is 100% owned by Inica, Inc., a Colorado corporation that is wholly owned by Dr. Misra and an immediate family member.

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USE OF PROCEEDS

The Selling Shareholders will receive all of the proceeds from the sale of the Shares offered by this Prospectus Supplement. We will not receive any of the proceeds from the sale of the Shares, but we have agreed to pay the expenses of preparing this Prospectus Supplement and the related registration statement.

PLAN OF DISTRIBUTION

The Selling Shareholders and any of their pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their Shares on any stock exchange, market or trading facility on which the securities are traded or in private transactions. These sales may be at market or negotiated prices. It is possible that the increase in securities available on the market will have a negative effect on the resale price of our securities and may make it difficult for purchasers to resell the securities at a profit or at all.

The Selling Shareholders also may sell Shares under Rule 144 of the Securities Act if available, rather than under this prospectus. The Selling Shareholders may engage in short sales against the box, puts and calls and other transactions in our securities or derivatives of our securities, and may sell or deliver shares or warrants in connection with these trades. Unless prohibited by Company policy or applicable rules or regulations, the Selling Shareholders may pledge their Shares to their brokers under the margin provisions of customer agreements. If a Selling Stockholder defaults on a margin loan, the broker may, from time to time, offer and sell the pledged shares or warrants.

Broker-dealers engaged by the Selling Shareholders may arrange for other broker-dealers to participate in sales. Broker-dealers may receive commissions or discounts from either the Selling Shareholders or, if any broker-dealer acts as agent for the purchaser, from the purchaser, in amounts to be negotiated. It is not expected that these commissions and discounts would exceed what is customary in the types of transactions involved.

The Selling Shareholders and any broker-dealers or agents that are involved in selling the Shares may be deemed to be underwriters within the meaning of the Securities Act in connection with those sales. In that event, any commissions received by such broker-dealers or agents and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act.

We have elected, to pay all fees and expenses incident to the registration of the Shares being registered herein. We are not required to pay commissions and other selling expenses.

DESCRIPTION OF SECURITIES

Our authorized capital stock consists of 75,000,000 shares of common stock, \$0.0001 par value, and 25,000,000 shares of preferred stock, \$0.0001 par value. As of August 3, 2009, we had 21,151,261 shares of common stock and no shares of preferred stock outstanding.

The following is a summary of the rights of our common stock, preferred stock and certain outstanding rights to obtain our common stock. For more detailed information about our capital stock, please see our certificate of incorporation and bylaws, both as amended (our Certificate of Incorporation and Bylaws, respectively).

Common Stock

Holders of our common stock are entitled to one vote for each share on all matters submitted to a stockholder vote and may not cumulate their votes. Holders of common stock are entitled to share in all dividends that our Board of Directors, in its discretion, declares from legally available funds. In the event of our liquidation, dissolution or winding up, each outstanding share entitles its holder to participate pro rata in all assets that remain after payment of liabilities and after providing for each class of stock, if any, having preference over the common stock.

Except for Norsk Hydro, which holds pre-emptive rights with respect to certain equity issuances by us (on terms no less favorable than any such issuance) in order to maintain its percentage ownership in our common stock, holders of our common stock have no conversion, preemptive or other subscription rights, and there are no redemption provisions applicable to our common stock. The rights of the holders of common stock are subject to any rights that may be fixed for holders of preferred stock.

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Preferred Stock

Our Board is authorized by our Certificate of Incorporation to establish classes or series of preferred stock and fix the designation, powers, preferences and rights of the shares of each such class or series and the qualifications, limitations or restrictions thereof without any further vote or action by our stockholders. Any shares of preferred stock so issued could have priority over our common stock with respect to dividend or liquidation rights. Any future issuance of preferred stock may have the effect of delaying, deferring or preventing a change in our control without further action by our stockholders and may adversely affect the voting and other rights of the holders of our common stock. At present we have no plans to issue any shares of preferred stock or to adopt any new series, preferences or other classification of preferred stock.

The issuance of shares of preferred stock, or the issuance of rights to purchase such shares, could be used to discourage an unsolicited acquisition proposal. For instance, the issuance of a series of preferred stock might impede a business combination by including class voting rights that would enable a holder to block such a transaction. In addition, under certain circumstances, the issuance of preferred stock could adversely affect the voting power of holders of our common stock. Although our Board is required to make any determination to issue preferred stock based on its judgment as to the best interests of our stockholders, our Board could act in a manner that would discourage an acquisition attempt or other transaction that some, or a majority, of our stockholders might believe to be in their best interests or in which such stockholders might receive a premium for their stock over the then market price of such stock. Our Board presently does not intend to seek stockholder approval prior to the issuance of currently authorized stock, unless otherwise required by law or applicable stock exchange rules.

Class A Warrants

General. In May 2007, we called all of our outstanding Class A warrants for redemption; consequently, there are no Class A warrants outstanding. However, upon exercise of 112,500 outstanding warrants held by the representative of the underwriters of our initial public offering (IPO), we may issue up to 112,500 Class A warrants to the representative. Because those Class A warrants will be immediately subject to a call for redemption at \$0.25 per warrant, the representative will then have to decide whether to exercise its Class A warrants or hold them for redemption. Each Class A warrant entitles the holder to purchase one share of common stock at an exercise price of \$6.60 per share.

Redemption. We have the right to redeem the Class A warrants at a price of \$0.25 per warrant, after providing 30 days prior written notice to the Class A warrant holders. In May 2007, we called our outstanding Class A public warrants for redemption, and all such Class A public warrants that remained unexercised as of June 25, 2007, the announced redemption date, are now expired. Consequently, as of August 3, 2009, there were no Class A warrants outstanding, although as August 3, 2009, 9,090 Class A warrants had not yet been surrendered to our transfer agent for redemption at \$0.25 per warrant. However, the representative of the underwriters in our IPO is entitled to receive Class A warrants upon exercise of certain warrants it received in connection with our IPO. Such Class A warrants will not be freely tradeable and will be immediately subject to a call for redemption at \$0.25 per warrant. The representative will then have to decide whether to exercise its Class A warrants or hold them for redemption.

Class B Warrants

General. As of August 3, 2009, we had 10,502,583 Class B warrants outstanding. Our Class B warrants may be exercised until their expiration date, which is July 10, 2011. Each Class B warrant entitles the holder to purchase one share of our common stock at an exercise price of \$11.00 per share. This exercise price will be adjusted if specific events, summarized below, occur. A holder of Class B warrants will not be deemed a holder of the underlying stock for any purpose until the warrant is exercised. If, at their expiration date, the Class B warrants are not currently exercisable, the expiration date will be extended for 30 days following notice to the holders of the warrants that the warrants are again exercisable. If we cannot honor the exercise of Class B warrants and the securities underlying the Class B warrants are listed on a securities exchange or if there are three independent market makers for the underlying securities, we may, but are not required to, settle the warrants for a price equal to the difference between the closing price of the underlying securities and the exercise price of the warrants.

No Redemption. The Class B warrants are non-redeemable.

Provisions Applicable to the Class A and Class B Warrants

Exercise. The holders of the warrants may exercise them only if a current registration statement is then in effect. Fractional shares of common stock will not be issued upon exercise of the warrants.

Adjustments in Certain Events. The warrants provide for adjustment of the number of shares for which each warrant is exercisable if certain events occur. If we distribute to our stockholders additional shares of common stock through a dividend or distribution, or if we effect a stock split of our common stock, the total number of shares of common stock purchasable on exercise of

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a warrant will be adjusted so that the holder of a warrant thereafter exercised will be entitled to receive the number of shares of common stock the holder would have owned or received after such event if the warrant holder had exercised the warrant before the event causing the adjustment and held the securities received on such exercise through the record date for the event. The aggregate exercise price of the warrant will remain the same in that circumstance, but the effective purchase price per share of common stock purchasable upon exercise of the warrant will be proportionately reduced because a greater number of common stock shares will then be purchasable upon exercise of the adjusted warrant. We will make equivalent changes in the warrants if we effect a reverse stock split.

In the event of a capital reorganization or reclassification of our common stock, the warrants will be adjusted so that thereafter each warrant holder will be entitled to receive upon exercise the same number and kind of securities that such holder would have received if the warrant had been exercised before the capital reorganization or reclassification of our common stock and the securities received on such exercise had been held through the record date of the recapitalization.

If we merge or consolidate with another corporation, or if we sell our assets as an entirety or substantially as an entirety to another corporation, we will make provisions so that warrant holders will be entitled to receive upon exercise of a warrant the kind and number of securities, cash or other property that would have been received as a result of the transaction by a person who was our stockholder immediately before the transaction and who owned the same number of shares of common stock for which the warrant was exercisable immediately before the transaction. No adjustment to the warrants will be made, however, if a merger or consolidation does not result in any reclassification or change in our outstanding common stock.

2005 Stock Option Plan

Our 2005 Stock Option Plan, as amended (the Option Plan), currently authorizes the grant of up to 2,500,000 shares of common stock (subject to adjustment for stock splits and similar capital changes) in connection with incentive stock option grants and non-qualified stock option grants. Employees and, in the case of nonqualified stock options, directors, consultants or other service providers are eligible to receive grants under the Option Plan. According to the terms of the Option Plan, no employee may be granted, in any fiscal year, options to purchase more than 100,000 shares. As of August 3, 2009, there were outstanding and unexercised options to purchase 1,283,281 shares under our Option Plan.

2008 Restricted Stock Plan

Our Stock Plan currently authorizes the grant of up to 750,000 shares of restricted common stock or restricted stock units or RSUs (subject to adjustment for stock splits and similar capital changes) to employees, directors, consultants or other service providers. According to the terms of the Stock Plan, no individual may be granted, in any fiscal year, more than 200,000 shares. Vesting of shares of restricted stock granted under the Stock Plan may occur over a specified period of time or based upon performance metrics announced at the time of grant. As of August 3, 2009, 380,650 shares or RSUs had been granted, and 243,844 shares or RSUs were outstanding, under our Stock Plan.

Norsk Hydro Options

In March 2007, we sold 1,600,000 shares of our restricted common stock to Norsk Hydro Produksjon AS (Norsk Hydro) in a private placement pursuant to Rule 506 of Regulation D and Section 4(2) of the Securities Act. We also granted two options to Norsk Hydro:

The Initial Warrants Option to purchase restricted Class A warrants (or if the Class A warrants are redeemed, common stock) and restricted Class B warrants that are otherwise identical to the Class A warrants formerly traded, and Class B warrants currently traded, on Nasdaq under the symbols ASTIW and ASTIZ, respectively. Norsk Hydro exercised this option in August 2007 to purchase 934,462 additional shares of common stock and 1,965,690 Class B warrants.

The Tranche 2 Option to purchase additional shares of restricted common stock, Class A warrants (or if the Class A warrants are redeemed, common stock) and Class B warrants that would result in Norsk Hydro owning up to 35% of our issued and outstanding common stock, Class A warrants and Class B warrants. In March 2008, Norsk Hydro acquired an additional 2,341,897 restricted shares of our common stock and 1,689,905 Class B warrants upon exercise of the second option we had granted to Norsk Hydro on March 13, 2007. Gross proceeds to us from this exercise were approximately \$28.4 million, and reflected per share and per warrant purchase prices equal to the average of the closing bids of each security, as reported by Nasdaq, for the five consecutive trading days preceding exercise. Immediately after this exercise, Norsk Hydro held approximately 35% of our outstanding common stock and Class B warrants. Until June 15, 2009, Norsk Hydro was entitled to

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purchase from us additional restricted shares of common stock and Class B warrants to maintain its ownership of up to 35% of our issued and outstanding common stock and Class B warrants. The purchase price of each security obtained will be equal to the average of the closing bids of the security in the five consecutive trading days ending on and including the trading day that is one day prior to the date of exercise, as reported by Nasdaq.

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In connection with the sale of these securities, Norsk Hydro received: piggyback registration rights that enable them to require us to register for resale the shares held by them if we engage in a registered public offering; and demand registration rights that became effective in March 2008. Norsk Hydro also holds pre-emptive rights with respect to certain equity issuances by us (on terms no less favorable than any such issuance) in order to maintain its percentage ownership in our common stock, but the pre-emptive rights do not apply to bona fide underwritten public offerings by us.

IPO Warrants

In connection with our IPO, we issued warrants (IPO Warrants) to purchase 300,000 units (each unit consisting of one share of common stock, one Class A warrant and two Class B warrants) to the representative of the underwriters of our IPO. The IPO Warrants may be exercised until July 10, 2011. As of August 3, 2009, IPO Warrants to purchase 112,500 units remain unexercised. To the extent that holders of the IPO Warrants are entitled to receive Class A warrants upon exercise of the IPO Warrants, those Class A warrants will be immediately subject to a call for redemption at \$0.25 per warrant. The holders will then have to decide whether to exercise their Class A warrants or hold them for redemption. We have agreed to keep a registration statement covering the issuance and resale of the securities underlying the IPO Warrants effective until the earlier of July 10, 2011 and the time that all of the IPO Warrants have been exercised. If we cannot honor the exercise of the IPO Warrants and the securities underlying the IPO Warrants are listed on a securities exchange or if there are three independent market makers for the underlying securities, we may, but are not required to, settle the IPO Warrants for a price equal to the difference between the closing price of the underlying securities and the exercise price of the IPO Warrants. Because we are not required to settle the IPO Warrants by payment of cash, it is possible that the IPO Warrants will never be settled in shares or payment of cash.

Authorized but Unissued Shares

The authorized but unissued shares of common and preferred stock are available for future issuance without stockholder approval, unless otherwise required by law or applicable stock exchange rules. These additional shares may be used for a variety of corporate purposes, including future public offerings to raise additional capital, corporate acquisitions and employee benefit plans. The existence of authorized but unissued shares could hinder or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

Anti-Takeover Effects of Certain Provisions of Delaware Law and Our Certificate of Incorporation and Bylaws

Our Certificate of Incorporation and Bylaws contain a number of provisions that could make our acquisition by means of a tender or exchange offer, a proxy contest or otherwise more difficult. These provisions are summarized below.

Removal of Directors. Our Bylaws provide that our directors may only be removed by the affirmative vote of the shares entitled to vote at an election of directors, or for cause by a majority of the Board. Although our Bylaws do not give the Board the power to approve or disapprove stockholder nominations for the election of directors or of any other business stockholders desire to conduct at an annual or any other meeting, the Bylaws may have the effect of precluding a nomination for the election of directors or precluding the conduct of business at a particular annual meeting if the proper procedures are not followed, or discouraging or deterring a third party from conducting a solicitation of proxies to elect its own slate of directors or otherwise attempting to obtain control, even if the conduct of that solicitation or attempt might be beneficial to our stockholders.

Staggered Board. Staggered terms tend to protect against sudden changes in management and may have the effect of delaying, deferring or preventing a change in our control without further action by our stockholders. Our Board is divided into three classes, with one class of directors elected at each year's annual stockholder meeting.

Special Meetings. Our Bylaws provide that special meetings of stockholders can be called by the President, at the request of a majority of the Board or at the written request of holders of at least 50% of the shares outstanding and entitled to vote.

Undesignated Preferred Stock. The ability to authorize undesignated preferred stock makes it possible for our Board of Directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to acquire us. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of our Company.

Delaware Anti-Takeover Statute. We are subject to the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. In general, Section 203 prohibits a publicly held Delaware corporation from engaging under certain circumstances in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder unless:

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Prior to the date of the transaction that resulted in the stockholder becoming an interested stockholder, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder.

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Upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding (1) shares owned by persons who are directors and also officers and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer.

On or subsequent to the date of the transaction that resulted in the stockholder becoming an interested stockholder, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66²/₃% of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation's outstanding voting securities. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our Board does not approve in advance. We also anticipate that Section 203 may also discourage attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

The provisions of Delaware law, our Certificate of Incorporation and our Bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Listing

Our common stock is listed on the Nasdaq Global Market under the trading symbol ASTI.

Transfer Agent and Registrar

The transfer agent and registrar of our common stock is Computershare Investor Services.

INDEMNIFICATION

Our Certificate of Incorporation contains provisions that limit the liability of our directors for monetary damages to the fullest extent permitted by Delaware law. Consequently, our directors will not be personally liable to us or our shareholders for monetary damages for any breach of fiduciary duties as directors, except liability for the following:

Any breach of their duty of loyalty to our company or our stockholders.

Acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law.

Unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law.

Any transaction from which the director derived an improper personal benefit.

Our Bylaws provide that we are required to indemnify our directors and officers and may indemnify our employees and other agents to the fullest extent permitted by Delaware law. Our Bylaws also provide that we shall advance expenses incurred by a director or officer before the final disposition of any action or proceeding upon receipt of an undertaking from or on behalf of that director or officer to repay the advance if it

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is ultimately determined that he or she is not entitled to be indemnified. We have entered and expect to continue to enter into agreements to indemnify our directors, executive officers and other employees as determined by the Board of Directors. These agreements provide for indemnification for related expenses including attorneys' fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding. We believe that these provisions and indemnification agreements are necessary to attract and retain qualified persons as directors and officers. We also maintain directors' and officers' liability insurance.

The limitation of liability and indemnification provisions in our Certificate of Incorporation and Bylaws may discourage shareholders from bringing a lawsuit against our directors for breach of their fiduciary duty. They may also reduce the likelihood of derivative litigation against our directors and officers, even though an action, if successful, might benefit us and other stockholders. Furthermore, a stockholder's investment may be adversely affected to the extent that we pay the costs of settlement and damage

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awards against directors and officers as required by these indemnification provisions. At present, there is no pending litigation or proceeding involving any of our directors, officers or employees regarding breach of fiduciary duty for which indemnification is sought, and we are not aware of any threatened litigation that may result in claims for indemnification.

Insofar as we may permit indemnification for liabilities arising under the Securities Act to directors, officers, and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that in the opinion of the SEC such indemnification is against public policy, as expressed in the Securities Act and is, therefore, unenforceable.

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INCORPORATION OF DOCUMENTS BY REFERENCE

This Prospectus Supplement and the Prospectus are part of a registration statement on Form S-8. The SEC allows us to incorporate by reference information that the Company previously has filed with the SEC. This means the Company can disclose important information to you by referring you to other documents that it has filed with the SEC. The information that is incorporated by reference is considered part of the Prospectus and this Prospectus Supplement, and information that the Company files later will automatically update and may supersede this information. For further information about the Company and the securities being offered, you should refer to the registration statement and the following documents that are incorporated by reference:

Our annual report on Form 10-K filed on March 12, 2009, which contains audited financial statements for the fiscal year ended December 31, 2008;

Our definitive proxy statement on Schedule 14A filed on May 14, 2009;

Our quarterly reports on Form 10-Q filed on May 7, 2009 and August 7, 2009 and our amended quarterly report on Form 10-Q/A filed on August 17, 2009;

Our current reports on Form 8-K filed on February 17, 2009, July 14, 2009, July 16, 2009, July 22, 2009, August 21, 2009 and September 8, 2009, to the extent filed, and not furnished;

All other reports filed by us pursuant to Section 13(a) or 15(d) of the Exchange Act since the end of the fiscal year covered by the annual report referred to above; and

The description of our 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.

All documents filed by the Company subsequent to those listed above with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, prior to the termination of this offering, shall be deemed to be incorporated by reference into the Prospectus and this Prospectus Supplement and to be a part thereof and hereof from the date of filing of such documents. Any statement contained in a document incorporated by reference shall be deemed to be modified or superseded for purposes of the Prospectus and this Prospectus Supplement to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of the Prospectus and this Prospectus Supplement.

You may request a copy of all documents that are incorporated by reference in the Prospectus and this Prospectus Supplement by writing or telephoning us at the following address and number: Ascent Solar Technologies, Inc., Attention: Corporate Secretary, 12300 Grant Street, Thornton, Colorado 80241, (720) 872-5000. We will provide copies of all documents requested (not including exhibits to those documents, unless the exhibits are specifically incorporated by reference into those documents or the Prospectus or this Prospectus Supplement) without charge.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement (which term includes all amendments, exhibits, and schedules thereto) on Form S-8 under the Securities Act with respect to the Shares offered by this Prospectus Supplement. This Prospectus Supplement does not contain all the information set forth in the registration statements because certain information has been incorporated into the registration statements by reference in accordance with the rules and regulations of the SEC. Please review the documents incorporated by reference for a more complete description of the matters to which such documents relate.

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We are subject to the informational reporting requirements of the Exchange Act. In accordance with the Exchange Act, we file reports, proxy statements, and other information with the SEC. You can inspect and copy these reports, proxy statements, and other information at the Public Reference Room of the SEC, 100 F Street, N.E., Washington, D.C. 20549, at prescribed rates. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference rooms. Our SEC filings are also available on the SEC's web site. The address of this site is www.sec.gov.