

ALTAIR NANOTECHNOLOGIES INC  
Form S-3/A  
November 10, 2009

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As Filed with the Securities and Exchange Commission on November 10 , 2009

Registration No. 333- 162310

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

AMENDMENT NO. 1  
TO  
FORM S-3  
REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933

Altair Nanotechnologies Inc.  
(Exact name of registrant as specified in its charter)

Canada  
(State or other jurisdiction of  
incorporation or organization)

33-1084375  
(I.R.S. employer  
identification number)

Terry Copeland  
Chief Executive Officer  
Altair Nanotechnologies Inc.  
204 Edison Way  
Reno, Nevada 89502  
(775) 858-3770  
(Name, address, including zip code, and  
telephone number, including area code, of  
agent for service)

Copies to:  
  
Bryan T. Allen, Esq.  
Parr Brown Gee & Loveless  
185 South State Street, Suite 800  
Salt Lake City, Utah 84111  
Phone: (801) 257-7963  
Facsimile: (801) 532-7750

Approximate date of commencement of the proposed sale to the public: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. "

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to

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Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.  x

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.  "

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.  "

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.  "

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.  "

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 the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer  o

Accelerated filer  x

Non-accelerated filer  o

Smaller reporting company  o

## CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered(1)	Proposed maximum aggregate offering price(2)	Amount of registration fee(3)
Common shares, without par value (4)	\$ 6,596,958	\$ 369
Rights associated with common shares (4)		

- (1) In addition, the securities being registered hereunder include such indeterminate number of common shares and associated rights as may be issuable with respect to the securities being registered hereunder as a result of stock splits, stock dividends or similar transactions, in each case determined in accordance with to Rule 416 under the Securities Act.
- (2) The common shares and associated rights registered hereunder are issuable upon the exercise of warrants to purchase an aggregate of 6,596,958 common shares at an exercise price of \$1.00 per share, for an aggregate exercise price of \$6,596,958 if all such warrants are exercised. The warrants were issued and previously registered pursuant to Registration Statement on Form S-3, File No. 333-137099 and Registration Statement on Form S-3MEF File No. 333-159436 filed pursuant to Rule 462(b) of the Securities Act of 1933, as amended.
- (3) The warrants, and the common shares and associated rights issuable upon the exercise of such warrants, were previously registered pursuant to Registration Statement No. 333-137099 and Registration Statement on Form S-3MEF File No. 333-159436 filed pursuant to Rule 462(b) of the Securities Act of 1933, as amended. Pursuant to Rule 415(a)(6) under the Securities Act, the filing fees previously paid in connection with the securities being registered hereunder will continue to be applied to the same.
- (4) Each common share purchasable upon the exercise of warrants previously registered includes an attached right arising under, and subject to the terms described in, the Amended and Restated Shareholder Rights Plan Agreement dated October 15, 1999, as amended by that certain Amendment No. 1 dated October 6, 2008 and any additional amendments, between the Registrant and Equity Transfer Services, Inc., as the Rights Agent. Until the occurrence of events described in such agreement, the rights are not exercisable, are evidenced by the Registrant's common shares and transfer automatically with, and only with, the common shares.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until this Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The Registrant has an existing "shelf" registration statement, File No. 333-137099, that was declared effective on October 3, 2006 and which expires on October 3, 2009 pursuant to Rule 415(a)(5) under the Securities Act. Warrants to purchase 6,596,958 common shares issued under such registration statement remain outstanding. The Registrant is filing this new Registration Statement for the sole purpose of ensuring that an effective Registration Statement covers the exercise of such previously issued warrants. Pursuant to Rule 415(a)(6) promulgated under the Securities Act, the filing fees previously paid in connection with the securities being registered hereunder will continue to be applied to such securities. In accordance with SEC rules, the Registrant may continue to offer and sell the securities being

registered hereunder during the grace period afforded by Rule 415(a)(5). If the Registrant sells any securities being registered hereunder during the grace period, the Registrant will identify in a pre-effective amendment to this Registration Statement the new amount of securities to be carried forward to this Registration Statement in reliance upon Rule 415(a)(6).

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PROSPECTUS

ALTAIR NANOTECHNOLOGIES, INC.

6,596,958  
COMMON SHARES

We are offering up to 6,596,958 common shares that are issuable upon the exercise of warrants previously offered and sold by us on May 28, 2009. Each warrant represents the right to purchase one common share at any time, and from time to time through May 28, 2016 at an exercise price of \$1.00 per share. Each common share includes an associated right arising under an Amended and Restated Shareholder Rights Plan Agreement dated October 15, 1999, as amended by that certain Amendment No. 1 dated October 6, 2008 and any additional amendments. Until the occurrence of events described in such agreement, the rights are not exercisable, are evidenced by our common shares and transfer automatically with, and only with, the common shares.

Our common shares are listed on the NASDAQ Capital Market under the symbol "ALTI." On November 6, 2009, the last reported sale price of our common shares was \$0.98 per share.

Investing in the securities offered by this prospectus involves risks. See "Risk Factors" beginning on page 2.

Neither the Securities Exchange Commission nor any other government body has approved or disapproved of these securities or passed upon the accuracy of this prospectus. Any representation to the contrary is a criminal offense.

This prospectus is dated November 10 , 2009

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## EXPLANATORY STATEMENT

We have an existing “shelf” registration statement, file no. 333-137099, that was declared effective on October 3, 2006 and which expired on October 3, 2009 pursuant to Rule 415(a)(5) under the Securities Act, subject to an up to 180 grace period pending the effectiveness of the registration statement of which this prospectus is a part. Of the securities issued under such registration statement, warrants to purchase 6,596,958 common shares remain outstanding and unexercised. We have filed the registration statement of which this prospectus is a part for the sole purpose of ensuring that an effective registration statement covers the exercise of such warrants.

## OVERVIEW

We are a Canadian corporation, with principal assets and operations in the United States, whose primary business is developing and commercializing nanomaterial technologies. Our research, development, production and marketing efforts are currently directed toward the design, development, and production of our nano-lithium titanate battery cells, batteries, and battery packs, as well as related design and test services. We are currently focused on the commercialization of our nano-lithium titanate electrode materials and batteries for use in the power and energy storage industries. We also continue developing and testing efforts of our nano-lithium titanate electrode materials and batteries for use in military applications and in the transportation segment.

Our other operations as of the date of this prospectus include supporting AlSher Titania, LLC in the development and production of high quality titanium dioxide pigment for use in paint and coatings, and nano titanium dioxide materials for use in a variety of applications including those related to removing contaminants from air and water. In this area, we are seeking to identify and qualify an interested third party to purchase our interest in the AlSher joint venture. We are also providing limited support to Spectrum Pharmaceuticals Inc. pursuant to our obligations under the amended and restated agreement for development of RenaZorb and Renalan, which are pre-clinical pharmaceutical ingredients designed to be useful in the treatment of chronic kidney disease, hyperphosphatemia, and high phosphate levels in blood, associated with end-stage renal disease.

You should rely only on the information incorporated by reference or provided in this prospectus. We have authorized no one to provide you with different information.

Unless we indicate otherwise, the terms “Altair,” “we,” “our” and “us” as used in this prospectus refers to Altair Nanotechnologies Inc. and its subsidiaries as a combined entity, except where it is made clear that the term only means the parent company or an identified subsidiary. Our principal executive offices are located at 204 Edison Way, Reno, NV, and our phone number is (775) 856-2500. Our website is [www.altairnano.com](http://www.altairnano.com). Information contained on our website is not a part of this prospectus.

## RISK FACTORS

You should carefully consider the risks described in this prospectus, in addition to the other information contained or incorporated by reference in this prospectus before making an investment decision. Any of these risks could materially and adversely affect our business, financial condition or results of operations. In such case, you may lose all or part of your investment. Some factors in this section are forward-looking statements.

We may continue to experience significant losses from operations.

We have experienced a net loss in every fiscal year since our inception. Our losses from operations were \$30.1 million in 2008, and \$16.3 million for the nine months ended September 30, 2009. Even if we do generate operating income in one or more quarters in the future, subsequent developments in the economy, our industry, customer base, business or cost structure, or an event such as significant litigation or a significant transaction, may cause us to again experience operating losses. We may never become profitable.

Our quarterly operating results have fluctuated significantly in the past and will continue to fluctuate in the future, which could cause our stock price to decline.

Our quarterly operating results have fluctuated significantly in the past, and we believe that they will continue to fluctuate in the future, due to a number of factors, many of which are beyond our control. Factors that may affect our quarterly operating results include the following:

- fluctuations in the size and timing of customer orders from one quarter to the next;
  - timing of delivery of our services and products;
  - additions of new customers or losses of existing customers;
- positive or negative business or financial developments announced by our key customers;
  - our ability to commercialize and obtain orders for products we are developing;
  - costs associated with developing our manufacturing capabilities;
- new product announcements or introductions by our competitors or potential competitors;
- the effect of variations in the market price of our common shares on our equity-based compensation expenses;
  - technology and intellectual property issues associated with our products; and
  - general political, social, geopolitical and economic trends and events.

If in future periods our operating results do not meet the expectations of investors or analysts who choose to follow our company, our stock price may fall.

A majority of our revenue has historically been generated from low-margin contract research and development services; if we cannot expand revenues from other products and services, our business will fail.

Historically, a majority of our revenue has come from contract research and development services for businesses and government agencies. During the years ended December 31, 2008, 2007 and 2006, contract service revenues comprised 87%, 55% and 67% respectively, of our operating revenues. Contract services revenue is low margin, or has negative margins, and is unlikely to grow at a rapid pace. Our business plan anticipates revenues from product sales and licensing, both of which have potential for higher margins than contract services and have potential for rapid growth, increasing in coming years. If we are not successful in significantly expanding our revenues, or if we are forced to accept low or negative margins in order to achieve revenue growth, we may fail to reach profitability in the future.



Adverse economic conditions and government initiatives could reduce, delay or harm demand for our products.

The current financial markets and general economic environment are substantially weaker at present than they were during 2008. Our products are targeted primarily at large power producers, the U.S. and British military, military contractors and, to a lesser extent, automobile manufacturers. Due to declining revenues and concerns about liquidity, companies and branches of the military in our target market have reduced, delayed or eliminated many research and development initiatives, including those related to energy storage. This reduction or delay in development spending is harming our development and production efforts and will continue to harm such efforts unless and until development spending increases to prior levels.

In addition, certain of our customers or potential customers who have the liquidity to fund development projects have deferred orders in anticipation of qualifying for funds dispensed in accordance with the American Recovery and Reinvestment Act of 2009. We are likely to experience reduced product demand until companies seeking funding under these energy initiatives within the American Recovery and Reinvestment Act of 2009 receive funding and/or learn that they will not receive funding.

We depend upon several sole-source third-party suppliers.

We rely on certain suppliers as the sole-source of certain services, raw materials and other components of our products. We do not have long-term supply or service agreements with most of them. As a result, the providers of such services and components could terminate or alter the terms of service or supply with little or no advance notice. If our arrangements with any sole-source supplier were terminated or such a supplier failed to provide essential services or deliver essential components on a timely basis or introduced unacceptable price increases, our production schedule would be delayed, possibly by as long as six months. Any such delay in our production schedule would result in delayed product delivery and may also result in additional production costs, customer losses and litigation.

Our patents and other protective measures may not adequately protect our proprietary intellectual property, and we may be infringing on the rights of others.

We regard our intellectual property, particularly our proprietary rights in our nanomaterials technology, as critical to our success. We have received various patents, and filed other patent applications, for various applications and aspects of our nanomaterials technology and other intellectual property. In addition, we generally enter into confidentiality and invention agreements with our employees and consultants. Such patents and agreements and various other measures we take to protect our intellectual property from use by others may not be effective for various reasons, including the following:

- our pending patent applications may not be granted for various reasons, including the existence of conflicting patents or defects in our applications;
- the patents we have been granted may be challenged, invalidated or circumvented because of the pre-existence of similar patented or unpatented intellectual property rights or for other reasons;
- parties to the confidentiality and invention agreements may have such agreements declared unenforceable or, even if the agreements are enforceable, may breach such agreements;
- the costs associated with enforcing patents, confidentiality and invention agreements or other intellectual property rights may make aggressive enforcement cost prohibitive;
- even if we enforce our rights aggressively, injunctions, fines and other penalties may be insufficient to deter violations of our intellectual property rights; and
- other persons may independently develop proprietary information and techniques that, although functionally equivalent or superior to our intellectual proprietary information and techniques, do not breach our patented or unpatented proprietary rights.

Because the value of our company and common shares is rooted primarily in our proprietary intellectual property rights, our inability to protect our proprietary intellectual property rights or gain a competitive advantage from such rights could harm our ability to generate revenues and, as a result, our business and operations.

In addition, we may inadvertently be infringing on the proprietary rights of other persons and may be required to obtain licenses to certain intellectual property or other proprietary rights from third parties. Such licenses or proprietary rights may not be made available under acceptable terms, if at all. If we do not obtain required licenses or

proprietary rights, we could encounter delays in product development or find that the development or sale of products requiring such licenses is foreclosed.

The commercialization of many of our technologies is dependent upon the efforts of commercial partners and other third parties over which we have no or little control.

We do not have the expertise or resources to commercialize all potential applications of our nanomaterials and titanium dioxide pigment technology. For example, transportation applications of our nano-lithium titanate batteries are likely to be developed only in conjunction with the manufacturer of all-electric or hybrid-electric cars, trucks or buses, and stationary power applications are likely to be developed only in cooperation with utility companies or other potential users of the technology. With respect to these and substantially all other applications of our technology, the commercialization of a potential application of our technology is dependent, in part, upon the expertise, resources and efforts of our commercial partners. This presents certain risks, including the following:

- we may not be able to enter into development, licensing, supply and other agreements with commercial partners with appropriate resources, technology and expertise on reasonable terms or at all;
- our commercial partners may not place the same priority on a project as we do, may fail to honor contractual commitments, may not have the level of resources, expertise, market strength or other characteristics necessary for the success of the project, may dedicate only limited resources to, and/or may abandon, a development project for reasons, including reasons, such as a shift in corporate focus, unrelated to its merits;
- our commercial partners may be in the early stages of development and may not have sufficient liquidity to invest in joint development projects, expand their businesses and purchase our products as expected or honor contractual commitments;
- our commercial partners may terminate joint testing, development or marketing projects on the merits of the projects for various reasons, including determinations that a project is not feasible, cost-effective or likely to lead to a marketable end product;
- at various stages in the testing, development, marketing or production process, we may have disputes with our commercial partners, which may inhibit development, lead to an abandonment of the project or have other negative consequences; and
- even if the commercialization and marketing of jointly developed products is successful, our revenue share may be limited and may not exceed our associated development and operating costs.

As a result of the actions or omissions of our commercial partners, or our inability to identify and enter into suitable arrangements with qualified commercial partners, we may be unable to commercialize apparently viable products on a timely and cost-effective basis, or at all.

Interest in our nano-lithium titanate battery materials and batteries is affected by energy supply and pricing, political events, popular consciousness and other factors over which we have no control.

Currently, our marketing and development efforts for our batteries and battery materials are focused primarily on transportation, military and stationary power applications. In the transportation and military markets, batteries containing our nano-lithium titanate materials are designed to replace or supplement gasoline and diesel engines. In the stationary power applications, our batteries are designed to conserve and regulate the stable supply of electricity, including from renewable sources. The interest of our potential customers and business partners in our products and services is affected by a number of factors beyond our control, including:

- economic conditions and capital financing and liquidity constraints;
  - short-term and long-term trends in the supply and price of gasoline, diesel, coal, natural gas and other fuels;
- the anticipated or actual granting or elimination by governments of tax and other financial incentives favoring electric or hybrid electric vehicles and renewable energy production;
- the anticipated or actual funding, or elimination of funding for, programs that support renewable energy programs, electric grid improvements, certain military electric vehicle initiatives and related programs;
- changes in public and investor interest, for financial and/or environmental reasons, in supporting or adopting alternatives to gasoline and diesel for transportation and other purposes;

- the overall economic environment and the availability of credit to assist customers in purchasing our large battery systems;
- the expansion or contraction of private and public research and development budgets as a result of global and U.S. economic trends; and
  - the speed of incorporation of renewable energy generating sources into the electric grid.

Our government grants and contracts are subject to termination or delays by the government.

The grants and contracts we enter into with governmental entities are subject to termination or delay of funding at the election of the government. A substantial portion of our revenue is derived from government grants and contracts. As a result, any termination of such agreements would significantly reduce revenue and the capital to sustain operations and research.

Our success is primarily dependent upon our nano-lithium titanate battery materials and batteries business.

We recently determined to focus our financial and other resources primarily on our Power and Energy Group, in which our principal products are our nano-lithium titanate battery materials and batteries. As a result, we ceased devoting financial and human resources to any new development in our former Performance Materials Group, in which our principal focus (through Alsher) had been the development of titanium dioxide pigment and various coatings, and in our former Life Sciences Group, in which our principal focus had been supporting Spectrum Pharmaceuticals Inc. in the development of RenaZorb under a licensing agreement. Because we are not expending significant resources on any of our historical products or lines of business other than our nano-lithium titanate battery materials and batteries, such other products and lines of business are unlikely to generate substantial revenue in the future. As a result, our success is primarily dependent upon our ability to develop, market and sell our nano-lithium titanate battery materials and batteries.

Our nano-lithium titanate battery materials and battery business is currently dependent upon a few customers and potential customers, which presents various risks.

Our nano-structure LTO battery materials and battery business has historically been dependent upon a few customers, including the U.S. government, affiliates of The AES Corporation and smaller companies developing electric or hybrid electric cars and buses. In addition, most of these customers are development partners, who are subsidizing the research and development of products for which they may be the sole, or one of a few, potential purchasers. As a result of the small number of potential customers and partners, our existing customers and partners may have significant leverage on pricing terms, exclusivity terms and other economic and noneconomic terms. This may harm our attempts to sell products at prices that reflect desired gross margins. In addition, the decision by a single customer to abandon use or development of a product, or budget cutbacks and other events harming the ability of a single customer to continue to purchase products or continue development, may significantly harm both our financial results and the development track of one or more products.

If we acquire or invest in other companies, assets or technologies and we are not able to integrate them with our business, or we do not realize the anticipated financial and strategic goals for any of these transactions, our financial performance may be impaired.

As part of our growth strategy, we routinely consider acquiring or making investments in companies, assets or technologies that we believe are strategic to our business. We do not have extensive experience in conducting diligence on, evaluating, purchasing or integrating new businesses or technologies, and if we do succeed in acquiring or investing in a company or technology, we will be exposed to a number of risks, including:

- we may find that the acquired company or technology does not further our business strategy, that we overpaid for the company or technology or that the economic conditions underlying our acquisition decision have changed;
- we may have difficulty integrating the assets, technologies, operations or personnel of an acquired company, or retaining the key personnel of the acquired company;
- our ongoing business and management's attention may be disrupted or diverted by transition or integration issues and the complexity of managing geographically or culturally diverse enterprises;

- we may encounter difficulty entering and competing in new product or geographic markets or increased competition, including price competition or intellectual property litigation; and
- we may experience significant problems or liabilities associated with product quality, technology and legal contingencies relating to the acquired business or technology, such as intellectual property or employment matters.

In addition, from time to time we may enter into negotiations for acquisitions or investments that are not ultimately consummated. These negotiations could result in significant diversion of management time, as well as substantial out-of-pocket costs. If we were to proceed with one or more significant acquisitions or investments in which the consideration included cash, we could be required to use a substantial portion of our available cash. To the extent we issue shares of capital stock or other rights to purchase capital stock, including options and warrants, existing stockholders would be diluted. In addition, acquisitions and investments may result in the incurrence of debt, large one-time write-offs, such as acquired in-process research and development costs, and restructuring charges.

We intend to expand our operations and increase our expenditures in an effort to grow our business. If we are unable to achieve or manage significant growth and expansion, or if our business does not grow as we expect, our operating results may suffer.

During the past several years, we have increased our research and development expenditures in an attempt to accelerate the commercialization of certain products, particularly our nano-lithium titanate electrode materials and battery systems. Our business plan anticipates continued expenditure on development, manufacturing and other growth initiatives. We may fail to achieve significant growth despite such expenditures. If achieved, significant growth would place increased demands on our management, accounting systems, network infrastructure and systems of financial and internal controls. We may be unable to expand associated resources and refine associated systems fast enough to keep pace with expansion, especially as we expand into multiple facilities at distant locations. If we fail to ensure that our management, control and other systems keep pace with growth, we may experience a decline in the effectiveness and focus of our management team, problems with timely or accurate reporting, issues with costs and quality controls and other problems associated with a failure to manage rapid growth, all of which would harm our results of operations.

Our competitors have more resources than we do, and may be supported by more prominent partners, which may give them a competitive advantage.

We have limited financial, personnel and other resources and, because of our early stage of development, have limited access to capital. We compete or may compete against entities that are much larger than we are, have more extensive resources than we do and have an established reputation and operating history. In addition, certain of our early stage competitors may be partnered with, associated with or supported by larger business or financial partners. This may increase their ability to raise capital, attract media attention, develop products and attract customers despite their short operating history and small size. Because of their size, resources, reputation and history (or that of their business and financial partners) certain of our competitors may be able to exploit acquisition, development and joint venture opportunities more rapidly, easily or thoroughly than we can. In addition, potential customers may choose to do business with our more established competitors, without regard to the comparative quality of our products, because of their perception that our competitors are more stable, are more likely to complete various projects, are more likely to continue as a going concern and lend greater credibility to any joint venture.

We will not generate substantial milestone and royalty revenues from life science products unless proposed products receive FDA approval and achieve substantial market penetration.

We have assigned ownership of Renazorb™ and Renalan™ to Spectrum Pharmaceuticals. These are potential drug candidates for humans and animals respectively with kidney disease. These potential life science applications are subject to regulation by the FDA and similar regulatory bodies. Our agreement with Spectrum calls for milestone payments as certain milestones related to the development of the products and the obtaining of regulatory approval are met. The agreement also calls for the payment of royalties to us; however, our receipt of such royalties is subject to the receipt by Spectrum of substantial recurring revenues which are generally tied to the receipt of marketing approval from the FDA and the amount of revenue generated from the sale of end products. There are substantial risks associated with this agreement, including the following:

- Further testing of potential life science products using this technology may indicate that such products are less effective than existing products, unsafe, have significant side effects or are otherwise not viable;
- Spectrum may be unable to obtain FDA or other regulatory approval for technical, political or other reasons or, even if it obtains such approval, may not obtain such approval on a timely basis; in this regard, we note that Spectrum has been significantly delayed in testing on Renazorb™; and



- End products for which FDA approval is obtained, if any, may fail to obtain significant market share for various reasons, including questions about efficacy, need, safety and side effects or because of poor marketing by Spectrum.

If any of the foregoing risks, or other risks associated with these products were to occur, we would not receive substantial, recurring revenue from this agreement with Spectrum, which would adversely affect our overall business, operations and financial condition.

We and Sherwin-Williams may be unable to find a new investor to participate in AISher, and consequently terminate the joint venture disposing of its remaining assets.

We are currently working with Sherwin-Williams to identify an interested third party to invest in AISher and undertake the next phase in the proposed development of our titanium dioxide pigment manufacturing process, which is the construction of an approximately 5,000 ton per year demonstration plant. Neither Sherwin-Williams nor Altair has indicated a willingness to fund this next phase of development. Should the parties be unable to find an acceptable third party investor, the AISher joint venture will in all likelihood be terminated and its remaining assets sold or written off. If this joint venture is terminated, it is unlikely that we will realize any material revenue from its titanium dioxide pigment production process.

If manufacturing becomes a larger part of our operations, we will become exposed to accompanying risks and liabilities.

We have not produced any products using our nanomaterials and titanium dioxide pigment technology and equipment on a sustained commercial basis. In-house or outsourced manufacturing is expected to become an increasingly significant part of our business over the next few years. As a result, we expect to become increasingly subject to various risks associated with the manufacturing and supply of products, including the following:

- if we fail to supply products in accordance with contractual terms, including terms related to time of delivery and performance specifications, we may be required to repair or replace defective products and may become liable for direct, special, consequential and other damages, even if manufacturing or delivery was outsourced;
- raw materials used in the manufacturing process, labor and other key inputs may become scarce and expensive, causing our costs to exceed cost projections and associated revenues;
- Manufacturing processes typically involve large machinery, fuels and chemicals, any or all of which may lead to accidents involving bodily harm, destruction of facilities and environmental contamination and associated liabilities;
- as our manufacturing operations expand, we expect that a significant portion of our manufacturing will be done overseas, either by third-party contractors or in a plant owned by the company. Any manufacturing done overseas presents risks associated with quality control, currency exchange rates, foreign laws and customs, timing and loss risks associated with overseas transportation and potential adverse changes in the political, legal and social environment in the host country; and
- we may have made, and may be required to make, representations as to our right to supply and/or license intellectual property and to our compliance with laws. Such representations are usually supported by indemnification provisions requiring us to defend our customers and otherwise make them whole if we license or supply products that infringe on third-party technologies or violate government regulations.

Any failure to adequately manage risks associated with the manufacture and supply of materials and products could lead to losses (or small gross profits) from that segment of our business and/or significant liabilities, which would harm our business, operations and financial condition.

We may not be able to raise sufficient capital to meet future obligations.

As of June 30, 2009, we had approximately \$28.7 million in cash and cash equivalents. As we take additional steps to enhance our commercialization and marketing efforts, or respond to acquisition and joint venture opportunities or

potential adverse events, our use of working capital may increase. In any such event, absent a comparatively significant increase in revenue, we will need to raise additional capital in order to sustain our ongoing operations, continue unfinished testing and additional development work and, if certain of our products are commercialized, construct and operate facilities for the production of those products.

We may not be able to obtain the amount of additional capital needed or may be forced to pay an extremely high price for capital. Factors affecting the availability and price of capital may include the following:

- market factors affecting the availability and cost of capital generally, including recent increases or decreases in major stock market indexes, the stability of the banking and investment banking systems and general economic stability or instability;
  - the price, volatility and trading volume of our common shares;
- our financial results, particularly the amount of revenue we are generating from operations;
  - the amount of our capital needs;
- the market's perception of companies in one or more of our lines of business;
  - the economics of projects being pursued; and
- the market's perception of our ability to execute our business plan and any specific projects identified as uses of proceeds.

If we are unable to obtain sufficient capital or are forced to pay a high price for capital, we may be unable to meet future obligations or adequately exploit existing or future opportunities. If we are unable to obtain sufficient capital in the long run, we may be forced to curtail or discontinue operations.

Our past and future operations may lead to substantial environmental liability.

Virtually any prior or future use of our nanomaterials and titanium dioxide pigment technology is subject to federal, state and local environmental laws. In addition, we are in the process of reclaiming mineral property that we leased in Tennessee. Under applicable environmental laws, we may be jointly and severally liable with prior property owners for the treatment, cleanup, remediation and/or removal of any hazardous substances discovered at any property we use. In addition, courts or government agencies may impose liability for, among other things, the improper release, discharge, storage, use, disposal or transportation of hazardous substances. If we incur any significant environmental liabilities, our ability to execute our business plan and our financial condition would be harmed.

Certain of our experts and directors reside in Canada or Dubai and may be able to avoid civil liability.

We are a Canadian corporation, and two of our directors and our Canadian legal counsel are residents of Canada. Two additional directors are residents of the United Arab Emirates. As a result, investors may be unable to effect service of process upon such persons within the United States and may be unable to enforce court judgments against such persons predicated upon civil liability provisions of the U.S. securities laws. It is uncertain whether Canadian or United Arab Emirates courts would enforce judgments of U.S. courts obtained against us or such directors, officers or experts predicated upon the civil liability provisions of U.S. securities laws or impose liability in original actions against us or our directors, officers or experts predicated upon U.S. securities laws.

We are dependent on key personnel.

Our continued success will depend, to a significant extent, on the services of our executive management team and certain key scientists and engineers. We do not have key man insurance on any of these individuals. Nor do we have agreements requiring any of our key personnel to remain with our company. The loss or unavailability of any or all of these individuals could harm our ability to execute our business plan, maintain important business relationships and complete certain product development initiatives, which would harm our business.

We may issue substantial amounts of additional shares without stockholder approval.

Our articles of incorporation authorize the issuance of an unlimited number of common shares that may be issued without any action or approval by our stockholders. In addition, we have various stock option plans that have potential for diluting the ownership interests of our stockholders. The issuance of any additional common shares would further dilute the percentage ownership of our company held by existing stockholders.

The market price of our common shares is highly volatile and may increase or decrease dramatically at any time.

The market price of our common shares is highly volatile. Our stock price may change dramatically as the result of announcements of product developments, new products or innovations by us or our competitors, uncertainty regarding the viability of our technology or any of our product initiatives, significant customer contracts, significant litigation or other factors or events that would be expected to affect our business, financial condition, results of operations and future prospects.

The market price for our common shares may be affected by various factors not directly related to our business or future prospects, including the following:

- intentional manipulation of our stock price by existing or future shareholders;
- a reaction by investors to trends in our stock rather than the fundamentals of our business;
- a single acquisition or disposition, or several related acquisitions or dispositions, of a large number of our shares, including by short sellers covering their position;
- the interest of the market in our business sector, without regard to our financial condition, results of operations or business prospects;
- positive or negative statements or projections about our company or our industry, by analysts, stock gurus and other persons;
- the adoption of governmental regulations or government grant programs and similar developments in the United States or abroad that may enhance or detract from our ability to offer our products and services or affect our cost structure; and
- economic and other external market factors, such as a general decline in market prices due to poor economic conditions, investor distrust or a financial crisis.

We may be delisted from the NASDAQ Capital Market if the closing bid price of our common shares does not remain above \$1.00 per share.

Under NASDAQ rules, a stock listed on NASDAQ Capital Market must maintain a minimum per share closing bid price of at least \$1.00 per share. During 2009, the minimum per share closing bid price for our common shares has fallen below \$1.00 on several occasions. As a matter of practice, NASDAQ generally gives a company a notice of delisting if the per share closing bid price of its common shares is below \$1.00 for 30 consecutive trading days. After receiving the notice, the company will generally be delisted if the per share closing bid price for its common stock has not exceeded \$1.00 for 10 consecutive days within 180 days of the date of the notice. If the price of our common shares trades below \$1.00 for a sustained period of time, or if NASDAQ decides to delist our common shares based upon a one-time violation of the bid-price rule or any other rule, we may be delisted from the NASDAQ Capital Market.

Following any such delisting, our common shares would likely be eligible for quotation on the OTC Bulletin Board or other quotation service. Nonetheless, even if our common shares are quoted on an alternative quotation service, the fact of being delisted from the NASDAQ Capital Market will likely harm the price and trading volume for our common shares. Once delisted, our common shares would not be eligible for relisting until, among other things, our common shares traded at or above \$4.00 per share.

We have never declared a cash dividend and do not intend to declare a cash dividend in the foreseeable future.

We have never declared or paid cash dividends on our common shares. We currently intend to retain any future earnings, if any, for use in our business and, therefore, do not anticipate paying dividends on our common shares in the foreseeable future.

We are subject to various regulatory regimes, and may be adversely affected by inquiries, investigations and allegations that we have not complied with governing rules and laws.

In light of our status as a public company and our lines of business, we are subject to a variety of laws and regulatory regimes in addition to those applicable to all businesses generally. For example, we are subject to the reporting requirements applicable to Canadian and United States reporting issuers, such as the Sarbanes-Oxley Act of 2002, the rules of the NASDAQ Capital Market and certain state and provincial securities laws. We are also subject to state and

federal environmental, health and safety laws, and rules governing department of defense contracts. Such laws and rules change frequently and are often complex. In connection with such laws, we are subject to periodic audits, inquiries and investigations. Any such audits, inquiries and investigations may divert considerable financial and human resources and adversely affect the execution of our business plan.

Through such audits, inquiries and investigations, we or a regulator may determine that we are out of compliance with one or more governing rules or laws. Remedying such non-compliance diverts additional financial and human resources. In addition, in the future, we may be subject to a formal charge or determination that we have materially violated a governing law, rule or regulation. We may also be subject to lawsuits as a result of alleged violation of the securities laws or governing corporate laws. Any charge or allegation, and particularly any determination, that we had materially violated a governing law would harm our ability to enter into business relationships, recruit qualified officers and employees and raise capital.

#### FORWARD-LOOKING STATEMENTS

This prospectus contains and incorporates by reference certain forward-looking statements regarding our anticipated financial condition, results of operations and businesses in the future, including management's beliefs, projections and assumptions concerning future results and events. These forward-looking statements generally are in the future tense and may, but do not necessarily, include words such as "believes," "expects," "anticipates," "intends," "plans," "estimates," "may," "will," "should," "could," "predicts," "potential," "continue" or similar expressions. Forward-looking statements are not guarantees. They involve known and unknown risks, uncertainties and other factors that may cause actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Our future results may differ materially from those expressed in these forward-looking statements. Some of the factors that may cause actual results to differ materially from those contemplated by such forward-looking statements include, but are not limited to, those identified under "Risk Factors" above and in the annual and quarterly reports we file with the SEC.

Given these risks and uncertainties, you are cautioned not to place undue reliance on any forward-looking statements, which speak only as of the date of the document in which they are contained. We do not undertake any obligation to update any forward-looking statement or to publicly announce any revision of any forward-looking statement to reflect the occurrence of any future developments or events.

#### USE OF PROCEEDS

The estimated net proceeds we will receive from this offering will be approximately \$6.55 million if all of the warrants are exercised. The net proceeds from this offering will be added to our general corporate funds to be used for working capital and general corporate purposes. Pending these uses, the net proceeds will be invested in short-term marketable securities in accordance with our investment policy.

The amounts and timing of the expenditure of the net proceeds from this offering may vary significantly, based on the expenses of our operations and depending on numerous factors, including the success of our commercialization activities with third parties and the scope and amount of our research and development activities, among other things. Accordingly, our management will have broad discretion in the application of the net proceeds and investors will be relying on the judgment of our management regarding the application of the proceeds of this offering. We reserve the right to change the use of these proceeds as a result of certain contingencies such as the results of our research and development and third-party commercialization activities, competitive developments, opportunities to acquire technologies or businesses and other factors.

#### DILUTION

If you exercise your warrants in this offering, your ownership interest will be immediately diluted to the extent of the difference between the exercise price per warrant and the net tangible book value per share of our common shares as adjusted to give effect to our sale of the units offered hereby. Our historical net tangible book value as of September



30, 2009 was \$42 million, or \$.40 per common share. Historical net tangible book value per share represents the amount of our total tangible assets less total liabilities, divided by the number of outstanding common shares.

Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of our common shares in this offering and the as-adjusted net tangible book value per common share immediately after completion of this offering. After giving effect to the exercise of warrants to purchase 6,596,958 common shares in this offering at the exercise price of \$1.00 per share, our as-adjusted net tangible book value at September 30, 2009 would have been \$49 million, or \$.43 per common share. This amount represents an immediate increase in net tangible book value of \$.03 per share to our existing shareholders and an immediate dilution in net tangible book value of \$.57 per share to purchasers of shares in this offering.

The following table illustrates this dilution on a per share basis:

Exercise price per share		\$ 1.00
Net tangible book value per share as of September 30, 2009	\$ .40	
Increase in net tangible book value per share attributable to this offering	\$ .03	
As adjusted net tangible book value per share after this offering		\$ .43
Dilution per share to new investors		\$ .57

The above discussion and table are based on 105,519,855 common shares issued and outstanding as of September 30, 2009 and exclude:

- 4,962,209 common shares issuable upon exercise of options outstanding under our equity incentive plans as of September 30, 2009;
- 431,482 common shares issuable upon exercise of additional warrants outstanding as of September 30, 2009; and
- 4,085,317 common shares reserved as of September 30, 2009 for future grants under our equity incentive plans.

#### DESCRIPTION OF SECURITIES

We are offering a maximum of 6,596,958 common shares, including associated rights, upon the exercise of outstanding warrants to purchase common shares. The following briefly summarizes the general terms and provisions of our common shares, their associated rights, and the warrants pursuant to which such common shares may be issued. You should read the provisions of our articles of continuance, bylaws and any other relevant instrument and agreement relating to our securities before you make an investment decision with respect to our common shares.

##### The Outstanding Warrants Pursuant to which the Offered Common Shares may be Issued

**Exercisability.** The warrants are exercisable beginning on the date of original issuance and at any time up to May 28, 2016. The warrants are exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice accompanied by payment in full for the number of common shares purchased upon such exercise (except in the case of a cashless exercise as discussed below). Unless otherwise specified in the warrant, except upon at least 61 days' prior notice from the holder to us, the holder will not have the right to exercise any portion of the warrant if the holder (together with its affiliates) would beneficially own in excess of 4.99% or 9.99%, as applicable, of the number of common shares outstanding immediately after giving effect to the exercise, as such

percentage ownership is determined in accordance with the terms of the warrants.

**Cashless Exercise.** In the event that a registration statement covering common shares underlying the warrants, or an exemption from registration, is not available for the issuance or resale of such common shares underlying the warrants, the holder may, in its sole discretion, exercise the warrant in whole or in part and, in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, elect instead to receive upon such exercise the net number of common shares determined according to the formula set forth in the warrant.

**Exercise Price.** The exercise price per common share purchasable upon exercise of the warrants is \$1.00 per common share being purchased. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common shares and also upon any distributions of assets, including cash, stock or other property to our shareholders. The exercise price per share will also be subject to adjustment on a weighted average basis for certain dilutive issuances of equity securities.

**Fractional Shares.** No fractional common shares will be issued in connection with the exercise of a warrant. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price of the warrant.

**Transferability.** Subject to applicable laws, the warrants may be offered for sale, sold, transferred or assigned without our consent.

**Exchange Listing.** We do not plan on making an application to list the warrants on the NASDAQ Capital Market, any other national securities exchange or other nationally recognized trading system.

**Fundamental Transactions.** We will not enter into or be party to a fundamental transaction, which is a merger or other change of control transaction, as described in the warrants, unless the successor entity, as described in the warrants, assumes the warrants and delivers new warrants that are substantially similar. If we enter into, or are a party to, a fundamental transaction pursuant to which our shareholders are entitled or required to receive securities issued by another company or cash or other assets in exchange for common shares, which we refer to as a fundamental transaction, a holder of a warrant will have the right to receive, upon an exercise of the warrant, consideration as if the holder had exercised its warrant immediately prior to such fundamental transaction. In the event of a fundamental transaction, at the request of a holder of a warrant delivered before the 15th day after such fundamental transaction, we (or the successor entity) will purchase the warrant by paying to the holder, cash in an amount equal to the Black-Scholes value, as described in the warrant, of the remaining unexercised portion of the warrant on the date of consummation of such fundamental transaction.

**Restrictions on Market-Based Convertible Securities and Rights.** In the subscription agreement related to the purchase of the warrants, we agreed that, for so long as any warrants remain outstanding, we will not issue or sell any rights, warrants or options to subscribe for or purchase common shares, or directly or indirectly convertible into or exchangeable for common shares at a price which resets as a function of market price of the common shares, unless the conversion, exchange or exercise price of any such security cannot be less than the then exercise price of the warrants (other than as a result in the ordinary course of business of the issuance of common stocks under our stock plans or employee stock purchase plans).

**Rights as a Stockholder.** Except as otherwise provided in the warrants or by virtue of such holder's ownership of common shares, the holder of a warrant does not have the rights or privileges of a holder of our common shares, including any voting rights, until the holder exercises the warrant.

Waivers and Amendments. Subject to the 61-day prior notice requirement with respect to certain ownership limitations, any term of the warrants may be amended or waived with our written consent and the written consent of the holders of warrants.

#### Common Shares

Our authorized capital stock consists of an unlimited number of shares of common stock, no par value. The rights of our stockholders are governed by our charter documents and that certain Amended and Restated Shareholder Rights Plan Agreement, dated October 15, 1999, by and between the Company and Equity Transfer Services Inc. (the "Rights Agent"), as further amended by that certain Amendment No. 1 to Amended and Restated Shareholder Rights Plan Agreement dated October 6, 2008 (collectively, the "Rights Agreement"). As of September 30, 2009, there were 105,519,855 common shares issued and outstanding.

Holders of common shares are entitled to one vote per share on all matters to be voted on by our shareholders. There is no cumulative voting with respect to the election of directors. The holders of common shares are entitled to receive dividends, if any, as may be declared from time to time by our Board of Directors in its discretion from funds legally available therefor. Upon liquidation, dissolution or winding up of the company, the holders of common shares are entitled to receive ratably any assets available for distribution to shareholders. The common shares have no preemptive or other subscription rights, and there are no conversion rights or redemption or sinking fund provisions with respect to such shares. All of the outstanding common shares are fully paid and nonassessable. Each common share includes an associated right arising under, and subject to the terms described in, the Rights Agreement. The terms of such rights are summarized in “Change of Control Provisions Applicable to Our Common Shares” below.

As of September 30, 2009, we had issued and outstanding options to acquire 4,962,209 common shares issued pursuant to our stock incentive plans, had 4,085,317 shares reserved for future grants under our stock incentive plans and 7,028,440 common shares were issuable and reserved for issuance pursuant to other securities exercisable for, or convertible into or exchangeable for any shares of capital stock of the Company (including the warrants to purchase 6,596,958 common shares to which this prospectus relates). In addition, pursuant to a Warrant Issuance Agreement dated July 20, 2007, we agreed to issue to an affiliate of The AES Corporation additional warrants (each, a “Milestone Warrant”) to purchase Company common shares based on a formula derived from revenue received from sales of energy storage systems to AES and its affiliates during the term of a Joint Development Agreement. The number of Milestone Warrants the Company may be required to issue is subject to an aggregate cap of 1.8 million Milestone Warrants. The Milestone Warrants are to be issued annually by March 31 with respect to the prior year, have a four-year term and have an exercise price equal to the greater of (i) \$3.64 and (ii) the closing price on January 31 of the year of issuance less \$5.00.

#### Change of Control Provisions Applicable to Our Common Shares

Neither our articles of continuance nor our bylaws contain any provision that would delay, defer or prevent a change in control of the company. We have, however, adopted the Rights Agreement.

Pursuant to the Rights Agreement, on November 27, 1998, which is the record date, our Board of Directors authorized and declared a distribution of one right with respect to each common share issued and outstanding as of the record date and each common share issued thereafter prior to the expiration time (as defined below). The rights are subject to the terms and conditions of the Rights Agreement. A copy of the Amended and Restated Shareholder Rights Plan Agreement is attached as Exhibit 10.1 to the Current Report on Form 8-K filed with the SEC on November 18, 1999 and a copy of the Amendment No. 1 to such agreement is attached as Exhibit 10.3 to the Current Report on Form 8-K filed with the SEC on October 6, 2008. A copy of the Rights Agreement is also available upon written request to us. Because it is a summary, the following description of the rights and the Rights Agreement necessarily omits certain terms, exceptions, or qualifications to the affirmative statements made therein. The reader is advised to review the entire Rights Agreement prior to making any investment decision.

#### Certain Key Terms of the Rights Prior to Flip-In Date.

Prior to the date a transaction or event occurs by which a person, called an acquiring person, becomes the owner of 15% or more of the outstanding common shares and other shares entitled to vote for the election of directors, which event is a Flip-in Event, each right entitles the holder thereof to purchase one-half common share for the price of \$20 (which exercise price and number are subject to adjustment as set forth in the Rights Agreement). Notwithstanding the foregoing, no Right shall be exercisable prior to the commencement date. The commencement date is the close of business on the eighth business day after the earlier of (a) the date of a public announcement or disclosure by the company or an acquiring person of facts indicating that a person has become an acquiring person, or (b) the date of commencement of, or first public announcement of, the intent of any person to commence a bid for a number of voting shares that would give the bidder beneficial ownership of 15% or more of the issued and outstanding voting shares, referred to as a Take-over Bid.

#### Certain Key Terms of the Rights Following Flip-In Date.

Section 3.1 of the Rights Agreement includes a provision, referred to as a conversion provision, which provides that, subject to certain exceptions, upon the occurrence of a Flip-in Event, each right shall be adjusted so as to constitute a right to purchase from us for \$20, as adjusted, a number of common shares having an aggregate market price of four times \$20 (as adjusted). The market price is determined by averaging the closing price of the common shares on the primary exchange for the common shares for the 20 trading days preceding the date of determination. In addition, upon the occurrence of any Flip-in Event (if not subsequently deemed not to have occurred under the Rights Agreement), any rights owned by the acquiring person, its affiliates, or certain assignees become null and void. Any rights certificate subsequently issued upon transfer, exchange, replacement, adjustment, or otherwise with respect to common shares owned by any of the foregoing persons shall bear a legend indicating the extent to which such rights are void. Rights held by us or our subsidiaries are also void.

#### Exceptions, Redemption and Waiver.

The definitions of Flip-in Event and certain related terms are subject to exceptions, certain of which are summarized below. Nevertheless, to understand each such exception and how they may interrelate, the reader is advised to review the Rights Agreement. Despite a person's acquisition of 15% or more of our voting shares, a Flip-in Event shall be deemed not to have occurred or shall have no effect if:

- (1) the acquiring person is the company or an entity controlled by the company;
- (2) the acquiring person is an underwriter who becomes the beneficial owner of 15% or more voting shares in connection with a distribution of securities pursuant to an underwriting agreement with us;
- (3) the transaction by which the person becomes an acquiring person is a voting share reduction, which is an acquisition or redemption of voting shares by us which, by reducing the number of outstanding common shares, has the incidental effect of increasing the acquiring person's ownership percentage;
- (4) the transaction by which the person becomes an acquiring person is an acquisition with respect to which our Board of Directors has waived the conversion provision because:
  - (a) our Board of Directors has determined prior to the commencement date that a person became an acquiring person by inadvertence and, within 10 days of such determination, such person has reduced its beneficial ownership of common shares so as not to be an acquiring person;

(b) our Board of Directors acting in good faith has determined, prior to the occurrence of a Flip-in Event, to waive application of the conversion provision, referred to as a discretionary waiver;

(c) our Board of Directors determines within a specified time period to waive application of the conversion provision to a Flip-in Event, provided that the acquiring person has reduced, or agreed to reduce, its beneficial ownership of voting shares to less than 15% of the outstanding issue of voting shares, referred to as a waiver following withdrawal.

(5) the acquisition by which the person becomes an acquiring person is an acquisition pursuant to (a) a dividend reinvestment plan or share purchase plan made available to all holders of voting shares; (b) a stock dividend, stock split or similar event pursuant to which the acquiring person receives common shares on pro rata basis with all members of the same class or series; (c) the acquisition or exercise of rights to purchase voting shares distributed to all holders of voting shares; (d) a distribution of voting shares or securities convertible into voting shares offered pursuant to a prospectus or by way of a private placement, provided the acquiring person does not thereby acquire a greater percentage of the voting shares or convertible securities offered than the person's percentage of voting shares beneficially owned immediately prior to such acquisition.

(6) such person is Al Yousuf, LLC, a United Arab Emirates limited liability company ("Al Yousuf"); provided, however, such exception is not applicable to Al Yousuf in the event that Al Yousuf shall, after its execution of that certain Stock Purchase and Settlement Agreement (the "Purchase and Settlement Agreement"), dated October 6, 2008, by and between the Company and Al Yousuf (a) increase its beneficial ownership percentage of voting shares by more than 1% above its beneficial ownership percentage of voting shares as a result of its execution of the Purchase and Settlement Agreement, other than through the issuance of shares pursuant to the Purchase and Settlement Agreement, a voting share reduction, an exempt acquisition or a pro rata acquisition, or (b) commence a Take-over Bid that would, if consummated, increase its beneficial ownership percentage of voting shares by more than 1% above its beneficial ownership percentage of voting shares as a result of its execution of the Purchase and Settlement Agreement



In addition, (i) when a Take-over Bid is withdrawn or otherwise terminated after the commencement date has occurred, but prior to the occurrence of a Flip-in Date, or (ii) if the Board of the Directors grants a waiver following withdrawal, our Board of Directors may elect to redeem all outstanding rights at the price of Cdn. \$.0000001 per right (as adjusted). Upon the rights being redeemed pursuant to the foregoing provision, all provisions of the Rights Agreement shall continue to apply as if the commencement date had not occurred, and we shall be deemed to have issued replacement rights to the holders of its then outstanding common shares.

In addition, our Board of Directors may, at any time prior to the first date of public announcement or disclosure by us or an acquiring person of facts indicating that a person has become an acquiring person, or announcement date, elect to redeem all, but not less than all, of the then outstanding rights at the \$.0000001 per share (as adjusted). Moreover, in the event a person acquires voting shares pursuant to a discretionary waiver, our Board of Directors shall be deemed to have elected to redeem the rights at \$.0000002 per share (as adjusted). Within 10 days after our Board of Directors elects, or is deemed to have elected, to redeem the rights, our Board of Directors shall give notice of redemption to the holders of the then outstanding rights and, in such notice, described the method of payment by which the redemption price will be paid. The rights of any person under the Rights Agreement or any right, except rights to receive cash or other property that have already accrued, shall terminate at the expiration time, which is the date of a discretionary redemption or a deemed redemption described in this paragraph.

#### Exercise of the Rights.

The rights shall not be exercisable prior to the commencement date. Until the commencement date, each right shall be evidenced by the certificate for the associated common share and will be transferable only together with, and will be transferred by the transfer of, its associated common share. New common share certificates issued after the effective date of the Rights Agreement will contain a legend incorporating the Rights Agreement by reference. Certificates issued and outstanding at the effective date of the Rights Agreement shall evidence one right for each common share evidenced thereby, notwithstanding the absence of a legend incorporating the Rights Agreement, until the earlier of the commencement date or the expiration time. Each common share issued for new value after the effective date of the Rights Agreement, but prior to the expiration time, shall automatically have one new right associated with it and shall bear the appropriate legend.

From and after the commencement date, the rights may be exercised, and the registration and transfer of the rights shall be separate from and independent of the common shares. Following the commencement date, we shall mail to each holder of common shares as of the commencement date, or such holder's nominee, a rights certificate representing the number of rights held by such holder at the commencement date and a disclosure statement describing the rights.

Rights may be exercised in whole or in part on any business day after the commencement date and prior to the expiration time by submitting to the rights certificate, an election to exercise, and payment of the sum equal to \$.0000001 per share (as adjusted) multiplied by the number of rights being exercised. Upon receipt of such materials, the Rights Agent will promptly deliver certificates representing the appropriate number of common shares to the registered holder of the relevant rights certificate and, if not all rights were exercised, issue a new rights certificate evidencing the remaining unexercised rights.

The foregoing descriptions do not purport to be complete and are qualified by reference to the definitive Rights Agreement.



## PLAN OF DISTRIBUTION PROSPECTUS

We are offering up to 6,596,958 common shares and associated rights issuable upon the exercise of outstanding warrants to purchase common shares. We are not offering any new warrants or any other shares pursuant to the registration statement of which this prospectus is a part.

**Exercise of Warrants.** The warrants were issued on May 28, 2009 and are exercisable at any time up through May 28, 2016. The warrants are exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice accompanied by payment in full for the number of common shares purchased upon such exercise (except in the case of a cashless exercise as discussed below). Unless otherwise specified in the warrant, except upon at least 61 days' prior notice from the holder to us, the holder will not have the right to exercise any portion of the warrant if the holder (together with its affiliates) would beneficially own in excess of 4.99% or 9.99%, as applicable, of the number of common shares outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the warrants.

In the event that a registration statement covering common shares underlying the warrants, or an exemption from registration, is not available for the issuance or resale of such common shares underlying the warrants, the holder may, in its sole discretion, exercise the warrant in whole or in part and, in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, elect instead to receive upon such exercise the net number of common shares determined according to the formula set forth in the warrant.

**Prior Offer and Sale of the Warrants.** The warrants were offered and sold pursuant to a prospectus supplement dated May 22, 2009 filed with the SEC via EDGAR on May 26, 2009, which is part of Registration Statement on Form S-3, File No. 333-137099 and part of Registration Statement on Form S-3MEF File No. 333-159436 filed pursuant to Rule 462(b) of the Securities Act of 1933, as amended.

In connection with the offering identified in the prospectus supplement dated May 22, 2009, we agreed to indemnify the placement agent and its affiliates against certain liabilities, including liabilities under the Securities Act of 1933, as amended, and liabilities arising from breaches of representations and warranties contained in the placement agent agreement. We have also agreed to contribute to payments the placement agent and its affiliates may be required to make in respect of such liabilities. The placement agent agreement is included as an exhibit to our Current Report on Form 8-K filed with the SEC on May 22, 2009.

**Transfer Agent.** The transfer agent for our common shares is Equity Transfer Services, Inc., located in Ontario, Canada. Our common shares are listed on the NASDAQ Capital Market under the symbol "ALTI."

## INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

As permitted by SEC rules, this prospectus does not contain all of the information that prospective investors can find in the registration statement of which it is a part or the exhibits to the registration statement. The SEC permits us to incorporate by reference, into this prospectus, information filed separately with the SEC.

This prospectus incorporates by reference the documents set forth below that we previously have filed with the SEC pursuant to the Securities Exchange Act of 1934 (File no. 001-12497). These documents contain important information about us and our financial condition.

- Our Annual Report on Form 10-K for the year ended December 31, 2008, filed with the SEC on March 16, 2009;
- Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2009, filed with the SEC on May 8, 2009, our Quarterly Report on Form 10-Q for the quarter ended June 30, 2009, filed with the SEC on August 7, 2009 and our Quarterly Report on Form 10-Q for the quarter ended September 30, 2009 filed with the SEC on November 9, 2009;
  - Our Current Reports on Form 8-K filed with the SEC on March 4, 2009, April 1, 2009, May 22, 2009, May 29, 2009, June 10, 2009, September 4, 2009, September 10, 2009, and October 13, 2009;
- The description of our common shares contained in our Registration Statement on Form 10-SB, SEC File No. 1-12497 filed with the SEC pursuant to the Securities Exchange Act of 1934, including any amendment or report filed under the Securities Exchange Act of 1934 for the purpose of updating such description.

All documents filed by us pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act after the date of this registration statement, and prior to the filing of a post-effective amendment which indicates that all securities offered hereby have been sold or which de-registers all securities then remaining unsold, shall be deemed to be incorporated by reference in this registration statement and to be a part hereof from the date of filing of such documents. Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for purposes of this registration statement 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 herein 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 this prospectus.

Upon written or oral request, we will provide without charge to each person to whom a copy of this prospectus is delivered, including any beneficial owner, a copy of the information that has been or may be incorporated by reference in this prospectus. Direct any request for copies to John Fallini, Chief Financial Officer, at our corporate headquarters, located at 204 Edison Way, Reno, NV 89502, telephone number (775) 858-3750.

## WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, information statements and other information with the SEC. You may read and copy any reports, statements or other information that we file at the SEC's public reference rooms at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies of this information by mail from the Public Reference Section of the SEC, 100 F Street, N.E., Washington, DC 20549 at prescribed rates. Please call the SEC at 1 (800) SEC-0330 for further information on the public reference rooms. The SEC also maintains a web site at <http://www.sec.gov>, at which reports, proxy and information statements and other information regarding our company are available.

## LEGAL MATTERS

The validity of the securities offered by us are being passed upon for us by Cassels Brock & Blackwell, LLP, of Toronto, Ontario, Canada, and additional legal matters are being passed upon for us by Parr Brown Gee & Loveless, PC, of Salt Lake City, Utah.

## EXPERTS

The consolidated financial statements and the effectiveness of internal control over financial reporting appearing in this prospectus and registration statement by reference have been audited by Perry-Smith LLP, independent registered public accounting firm, as stated in their reports appearing elsewhere herein, and are included in reliance upon such reports and upon the authority of such firm as experts in accounting and auditing.

## DISCLOSURE OF COMMISSION POSITION ON INDEMNIFICATION FOR SECURITIES ACT LIABILITIES

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling the registrant, we have been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act of 1933 and is therefore unenforceable.



6,596,958 Shares

Issuable upon Exercise of Outstanding Warrants

Common Shares

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PROSPECTUS

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November 10, 2009

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## PART II. INFORMATION NOT REQUIRED IN PROSPECTUS

## Item 14. Other Expenses of Issuance and Distribution.

The registrant will bear all expenses of this offering. The estimated expenses in connection with the offering are as follows:

	Amount
SEC registration fee	\$ 369
Accounting fees and expenses*	10,000
Legal fees and expenses*	10,000
Printing expenses*	5,000
Transfer agent fees and expenses*	1,000
Miscellaneous expenses*	5,000
Total	\$31,369

\*Estimated

## Item 15. Indemnification of Directors and Officers.

## Our Bylaws

The Registrant's Bylaws provide that, to the maximum extent permitted by law, the Registrant shall indemnify a director or officer of the Registrant, a former director or officer of the Registrant, or another individual who acts or acted at the Registrant's request as a director or officer, or an individual acting in a similar capacity, of another entity, against all costs, charges and expenses, including any amount paid to settle an action or satisfy a judgment, reasonably incurred by the individual in respect of any civil, criminal, administrative, investigative or other proceeding in which the individual is involved because of that association with the Registrant or other entity. In addition, the Registrants Bylaws require the Registrant to advance monies to an indemnifiable officer, director or similar person in connection with threatened or pending litigation.

## The Canada Business Corporations Act

Section 124 of the Canada Business Corporations Act provides as follows with respect to the indemnification of directors and officers:

(1) A corporation may indemnify a director or officer of the corporation, a former director or officer of the corporation or another individual who acts or acted at the corporation's request as a director or officer, or an individual acting in a similar capacity, of another entity, against all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by the individual in respect of any civil, criminal, administrative, investigative or other proceeding in which the individual is involved because of that association with the corporation or other entity.

(2) A corporation may advance moneys to a director, officer or other individual for the costs, charges and expenses of a proceeding referred to in subsection (1). The individual shall repay the moneys if the individual does not fulfill the conditions of subsection (3).

(3) A corporation may not indemnify an individual under subsection (1) unless the individual

(a) acted honestly and in good faith with a view to the best interests of the corporation, or, as the case may be, to the best interests of the other entity for which the individual acted as director or officer or in a similar capacity at the corporation's request; and

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(b) in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, the individual had reasonable grounds for believing that the individual's conduct was lawful.

(4) A corporation may with the approval of a court, indemnify an individual referred to in subsection (1), or advance moneys under subsection (2), in respect of an action by or on behalf of the corporation or other entity to procure a judgment in its favor, to which the individual is made a party because of the individual's association with the corporation or other entity as described in subsection (1) against all costs, charges and expenses reasonably incurred by the individual in connection with such action, if the individual fulfills the conditions set out in subsection (3).

(5) Despite subsection (1), an individual referred to in that subsection is entitled to indemnity from the corporation in respect of all costs, charges and expenses reasonably incurred by the individual in connection with the defense of any civil, criminal, administrative, investigative or other proceeding to which the individual is subject because of the individual's association with the corporation or other entity as described in subsection (1), if the individual seeking indemnity

(a) was not judged by the court or other competent authority to have committed any fault or omitted to do anything that the individual ought to have done; and

(b) fulfills the conditions set out in subsection (3).

(6) A corporation may purchase and maintain insurance for the benefit of an individual referred to in subsection (1) against any liability incurred by the individual

(a) in the individual's capacity as a director or officer of the corporation; or

(b) in the individual's capacity as a director or officer, or similar capacity, of another entity, if the individual acts or acted in that capacity at the corporation's request.

(7) A corporation, an individual or an entity referred to in subsection (1) may apply to a court for an order approving an indemnity under this section and the court may so order and make any further order that it sees fit.

(8) An applicant under subsection (7) shall give the Director notice of the application and the Director is entitled to appear and be heard in person or by counsel.

(9) On an application under subsection (7) the court may order notice to be given to any interested person and the person is entitled to appear and be heard in person or by counsel.

#### Other Indemnification Information

Indemnification may be granted pursuant to any other agreement, bylaw, or vote of shareholders or directors. In addition to the foregoing, the Registrant maintains insurance through a commercial carrier against certain liabilities which may be incurred by its directors and officers. The foregoing description is necessarily general and does not describe all details regarding the indemnification of officers, directors or controlling persons of the Registrant.

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 informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities 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 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 Securities Act and will be governed by the final adjudication of such issue.

The rights of indemnification described above are not exclusive of any other rights of indemnification to which the persons indemnified may be entitled under any bylaw, agreement, vote of stockholders or directors or otherwise.

Item 16. List of Exhibits.

- 3.1 Articles of Continuance (1)
- 3.2 Bylaw No. 1 (1)
- 4.1 Form of Common Share Purchase Warrant(2)
- 4.2 Specimen Stock Certificate of the registrant(3)  
Amended and Restated Shareholder Rights Plan dated October 15, 1999, between the
- 4.3 Company and Equity Transfer Services, Inc. (4)  
Amendment No. 1 to Amended and Restated Shareholder Rights Plan Agreement dated
- 4.4 October 6, 2008(5)
- 5.1 Opinion of Cassels Brock & Blackwell, LLP
- 23.1 Consent of Cassels Brock & Blackwell, LLP (included in Exhibit 5.1 Opinion)
- 23.2 Consent of Perry-Smith, LLP
- 24.1 Power of attorney (6)

- (1) Incorporated by reference to the Company's Current Report on Form 8-K filed with the SEC on July 18, 2002, File No. 001-12497.
- (2) Incorporated by reference to the Company's Current Report on Form 8-K filed with the SEC on May 22, 2009, File No. 001-12497
- (3) Incorporated by reference to the Company's Registration Statement on Form 10-SB filed with the SEC on November 25, 1996, File No. 001-12497.
- (4) Incorporated by reference to the Company's Current Report on Form 8-K filed with the SEC on November 19, 1999, File No. 001-12497.
- (5) Incorporated by reference to the Company's Current Report on Form 8-K filed with the SEC on October 6, 2008, File No. 001-12497.
- (6) Included on the signature page of the Company's Registration Statement on Form S-3 filed with the SEC on October 2, 2009, File No. 333-162310

Item 17. Undertakings.

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:

(i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) 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 was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Securities and Exchange Commission (the "Commission") pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) 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 (i), (ii) and (iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by a Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the "Securities Exchange Act"), that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

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(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.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(a) each prospectus filed by a Registrant pursuant to Rule 424(b)(3) shall be deemed to be part of this registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(b) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of this registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of a Registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, in a primary offering of securities of an undersigned Registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(a) any preliminary prospectus or prospectus of an undersigned Registrant relating to the offering required to be filed pursuant to Rule 424;

(b) any free writing prospectus relating to the offering prepared by or on behalf of a Registrant or used or referred to by an undersigned Registrant;

(c) the portion of any other free writing prospectus relating to the offering containing material information about an undersigned Registrant or its securities provided by or on behalf of an undersigned Registrant; and

(d) any other communication that is an offer in the offering made by an undersigned Registrant to the purchaser.



(6) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Company'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 herein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(7) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers, and controlling persons of a Registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by a Registrant for expenses the incurred or paid by a director, officer, or controlling person 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 Securities Act and will be governed by the final adjudication of such issue.

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-3 and has duly caused this Amendment No. 1 to Form S-3 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Reno, State of Nevada on November 10, 2009.

ALTAIR NANOTECHNOLOGIES INC.

By: /s/ Terry M. Copeland  
Terry M. Copeland,  
President and Chief Executive Officer



## ADDITIONAL SIGNATURES

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.

Signature	Title	Date
/s/ Terry M. Copeland Terry M. Copeland	President, Chief Executive Officer and Director (Principal Executive Officer)	November 10, 2009
/s/ John Fallini John Fallini	Chief Financial Officer and Secretary (Principal Financial and Accounting Officer)	November 10, 2009
/s/ Jon N. Bengston* Jon N. Bengston	Director	November 10, 2009
/s/ Eqbal Al Yousuf* Eqbal Al Yousuf	Director	November 10, 2009
/s/ Hossein Asrar Haghghi* Hossein Asrar Haghghi	Director	November 10, 2009
/s/ George Hartman* George Hartman	Director	November 10, 2009
/s/ Robert F. Hemphill Jr.* Robert F. Hemphill Jr.	Director	November 10, 2009
/s/ Robert G. van Schoonenberg* Robert G. van Schoonenberg	Director	November 10, 2009
/s/ Pierre Lortie* Pierre Lortie	Director	November 10, 2009

\* By: /s/ Terry M. Copeland  
Terry M. Copeland, Attorney-in-Fact

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EXHIBIT INDEX

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