

IONATRON, INC.
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IONATRON, INC.

Supplement No. 1 dated December 21, 2006 to
Prospectus dated December 23, 2005

This supplement contains information relating to the table under the caption "Selling Stockholders" in our December 23, 2005 prospectus.

The disclosure regarding Omicron Master Trust (including the footnotes related thereto) in the Selling Stockholders table included in the prospectus is hereby amended as set forth below, and the following disclosure regarding the shares being offered by Portside Growth and Opportunity Fund and Rockmore Investment Master Fund Ltd. is being added.

This prospectus supplement should be read in conjunction with our prospectus, which must be delivered together with this prospectus supplement. This prospectus supplement is qualified by reference to the prospectus, except to the extent that the information in this prospectus supplement supersedes the information contained in the prospectus. Investing in our securities involves a high degree of risk.

For more information, see "Risk Factors" beginning on page 6 of the accompanying prospectus for a discussion of these risks.

Percentage ownership of common stock is based on approximately 78,111,850 shares of our common stock outstanding as of December 20, 2006. In addition, the table below assumes for calculating each selling security holder's beneficial ownership, both prior to and after this offering, as well as each such selling security holder's percentage ownership following this offering, that options, warrants and convertible securities held by such security holder (but not, unless otherwise noted, those held by any other person) that are exercisable within 60 days of December 20, 2006 have been exercised and converted and the shares underlying them added to the number of shares of our common stock deemed to be outstanding. For purposes of calculating the post-offering ownership of each selling security holder, the table also assumes the sale of all of the securities being offered by such selling security holder.

| Selling Securityholders | Number of shares of common stock beneficially owned prior to the offering | Shares of Common Stock being offered | Number of Shares of common stock beneficially owned after the offering | Shares of Preferred Stock being offered | Number of shares of Preferred Stock beneficially owned after the offering | % of voting stock beneficially owned after the offering |
|--|--|---|---|--|--|--|
| Omicron Master Trust (1) | 5,167 (2) | 0 | 5,167 | 0 | 0 | * |
| Portside Growth and Opportunity Fund (3) | 163,989 (4) | 84,577 (5) | 104,349 | 27,328 | 0 | * |
| Rockmore Investment Master Fund Ltd (6) | 289,363 (7) | 39,225 (8) | 261,707 | 12,672 | 0 | * |

* Less than 1%.

(1) Omicron Capital, L.P., a Delaware limited partnership (“Omicron Capital”), serves as investment manager to Omicron Master Trust, a trust formed under the laws of Bermuda (“Omicron”), Omicron Capital, Inc., a Delaware corporation (“OCI”), serves as general partner of Omicron Capital, and Winchester Global Trust Company Limited (“Winchester”) serves as the trustee of Omicron. By reason of such relationships, Omicron Capital and OCI may be deemed to share dispositive power over the shares of our common stock owned by Omicron, and Winchester may be deemed to share voting and dispositive power over the shares of our common stock owned by Omicron. Omicron Capital, OCI and Winchester disclaim beneficial ownership of such shares of our common stock. As of the date of this prospectus supplement, Mr. Olivier H. Morali, an officer of OCI and Mr. Bruce T. Bernstein, a consultant to OCI, have delegated authority from the board of directors of OCI regarding the portfolio management decisions with respect to the shares of common stock owned by Omicron. By reason of such delegated authority, Messrs. Morali and Bernstein may be deemed to share dispositive power over the shares of our common stock owned by Omicron. Messrs. Morali and Bernstein disclaim beneficial ownership of such shares of our common stock and neither of such persons has any legal right to maintain such delegated authority. No other person has sole or shared voting or dispositive power with respect to the shares of our common stock being offered by Omicron, as those terms are used for purposes under Regulation 13D-G of the Securities Exchange Act of 1934, as amended. Omicron and Winchester are not “affiliates” of one another, as that term is used for purposes of the Securities Exchange Act of 1934, as amended, or of any other person named in this prospectus supplement as a selling securityholder. No person or “group” (as that term is used in Section 13(d) of the Securities Exchange Act of 1934, as amended, or the SEC’s Regulation 13D-G) controls Omicron and Winchester.

(2) The selling securityholder has advised us that it owns 5,167 shares of common stock, which were issued as dividends on the Series A Preferred Stock.

(3) The selling security holder has advised us that Ramius Capital Group, L.L.C. (“Ramius Capital”) is the investment adviser of the selling security holder and consequently has voting control and investment discretion over securities held by the selling security holder. Ramius Capital disclaims beneficial ownership of the shares held by the selling security holder. Peter A. Cohen, Morgan B. Stark, Thomas W. Strauss and Jeffrey M. Solomon are the sole managing

members of CAS & Co., L.L.C., the sole managing member of Ramius Capital. As a result, Messrs. Cohen, Stark, Strauss and Solomon may be considered beneficial owners of any shares deemed to be beneficially owned by Ramius Capital. Messrs. Cohen, Stark, Strauss and Solomon disclaim beneficial ownership of these shares.

(4) Represents (i) 56,933 shares of common stock issuable upon the conversion of the Series A Preferred Stock, (ii) 89,664 shares of common stock and (iii) 17,392 shares of common stock issuable upon exercise of the warrant issued in the August 2006 private placement.

(5) Represents 56,933 shares of common stock issuable upon the conversion of the Series A Preferred Stock and/or as payment of the purchase price upon redemption of the Series A Preferred Stock in conjunction with certain changes of control and (ii) an additional number of shares of common stock equal to 50% of the number of shares of common stock issuable upon conversion of the Series A Preferred Stock held by the selling securityholder which may be issued as payment of dividends upon the Series A Preferred Stock and/or as payment of the purchase price upon any such redemption of the Series A Preferred Stock, less 6,237 shares that were previously issued as dividend shares.

(6) The selling security holder has advised us that the Rockmore Capital, LLC (“Rockmore Capital”) and Rockmore Partners, LLC (“Rockmore Partners”), each a limited liability company formed under the laws of the State of Delaware, serve as the investment manager and general partner, respectively, to Rockmore Investments (US) LP, a Delaware limited partnership, which invests all of its assets through the selling security holder. By reason of such relationships, Rockmore Capital and Rockmore Partners may be deemed to share dispositive power over the shares of our common stock owned by the selling security holder. Rockmore Capital and Rockmore Partners disclaim beneficial ownership of such shares of our common stock. Rockmore Partners has delegated authority to Rockmore Capital regarding the portfolio management decisions with respect to the shares of common stock owned by the selling security holder and, as of the date of this prospectus supplement, Mr. Bruce T. Bernstein and Mr. Brian Daly, as officers of Rockmore Capital, are responsible for the portfolio management decisions of the shares of common stock owned by the selling security holder. By reason of such authority, Messrs. Bernstein and Daly may be deemed to share dispositive power over the shares of our common stock owned by the selling security holder. Messrs. Bernstein and Daly disclaim beneficial ownership of such shares of our common stock and neither of such persons has any legal right to maintain such authority.

(7) Represents (i) 26,400 shares of common stock issuable upon the conversion of the Series A Preferred Stock, (ii) 219,484 shares of common stock and (iii) 43,479 shares of common stock issuable upon exercise of the warrant issued in the August 2006 private placement.

(8) Represents 26,400 shares of common stock issuable upon the conversion of the Series A Preferred Stock and/or as payment of the purchase price upon redemption of the Series A Preferred Stock in conjunction with certain changes of control and (ii) an additional number of shares of common stock equal to 50% of the number of shares of common stock issuable upon conversion of the Series A Preferred Stock held by the selling securityholder which may be issued as payment of dividends upon the Series A Preferred Stock and/or as payment of the purchase price upon any such redemption of the Series A Preferred Stock, less 2,893 shares that were previously issued as dividend shares.
