

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

FORM 6-K

Report of Foreign Private Issuer
Pursuant to Rule 13a-16 or 15d-16
under the Securities Exchange Act of 1934

Date of Report: December 4, 2006
Commission File No.: 000-30688

NOVA MEASURING INSTRUMENTS LTD.

Building 22 Weitzmann Science Park, Rehovoth
P.O.B 266
Israel

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F ☒ Form 40-F ☐

Indicate by check mark whether the registrant is submitting this Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1): _____

Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to 12g3-2(b) under the Securities Exchange Act of 1934.

Yes ☐ No ☒

If "Yes" is marked, indicate below the file number assigned to the registrant in connection with 12g3-2(b): N/A.

Attached hereto and incorporated by way of reference herein is the Registrant's press release entitled "Nova Measuring Instruments Expands Offering with the Introduction of CrystalX II TM, a Wide Angle X-Ray Diffraction Metrology System."

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

NOVA MEASURING INSTRUMENTS LTD.

By: /s/ Dror David
Dror David
Chief Financial Officer

Date: December 4, 2006



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NOVA MEASURING INSTRUMENTS EXPANDS OFFERING WITH THE INTRODUCTION OF CrystalX IITM, A WIDE ANGLE X-RAY DIFFRACTION METROLOGY SYSTEM

Rehovot, Israel – December 4, 2006 - Nova Measuring Instruments Ltd. (NASDAQ: [NVMI](#)), the market leader in integrated measurement and process control for the semiconductor industry, today announced the introduction of a new metrology platform, the CrystalX IITM – a Wide Angle X-ray Diffraction metrology system.

CrystalX IITM answers one of the most critical requirements of IC manufacturing for measurements that provide insight into electrical performance of semiconductor devices. The system quickly identifies changes and irregularities in film microstructure that degrade device performance, reliability and yield – variations that are undetected by other metrology techniques.

CrystalX IITM is the first microstructure monitoring tool that can be used both in process development and in production. CrystalX IITM provides quick, quantitative full wafer measurements of crystallographic texture, phase and relative grain size. The system uses a 2-dimensional area detector allowing for the collection of multiple diffraction peaks at multiple angles simultaneously, resulting in rapid microstructure data collection. The system's architecture allows the detector, X-ray source and wafer to be completely fixed during measurement, providing both high measurement speed and the high positional certainty necessary to measure blanket and product wafers.

Commenting on the new Product announcement, Dave Kurtz, Nova Vice President and head of Nova's Microstructure Business Unit, said, "Looking into the crystallographic microstructure is not just an occasional analytical need but is an essential part of process development and process monitoring both for new Front End Of Line applications like Nickel Silicide and for Back End Of Line applications such as Copper or Tungsten interconnects. Our WA-XRD technology has already proven itself in R&D and Production environments, and we are excited about extending its adoption for a variety of new applications for in-line monitoring of Semiconductor manufacturing."

About Nova

Nova Measuring Instruments Ltd. develops, designs and produces integrated process control systems in the semiconductor manufacturing industry. Nova provides a broad

range of integrated process control solutions that link between different semiconductor processes and process equipment. The Company's website is www.nova.co.il.

This press release contains forward-looking statements within the meaning of safe harbor provisions of the Private Securities Litigation Reform Act of 1995 relating to future events or our future performance. Forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied in those forward-looking statements. These risks and other factors include but are not limited to: our ability to successfully complete our integration of HyperNex, our ability to leverage our existing channels to expand into the market for X-Ray diffraction metrology, changes in customer demands for our products, new product offerings from our competitors, changes in or an inability to execute our business strategy, unanticipated manufacturing or supply problems, changes in tax requirements and changes in customer demand for our products. We cannot guarantee future results, levels of activity, performance or achievements. The matters discussed in this press release also involve risks and uncertainties summarized under the heading "Risk Factors" in Nova's Annual Report on Form 20-F for the year ended December 31, 2005 filed with the Securities and Exchange Commission on June 29, 2006. These factors are updated from time to time through the filing of reports and registration statements with the Securities and Exchange Commission. Nova Measuring Instruments Ltd. does not assume any obligation to update the forward-looking information contained in this press release.