

## **Dip-Pen Nanolithography<sup>®</sup>: From the Lab to the Factory Floor**

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### ***Presentation***

***Abstract:*** A limited number of tools are available for direct manipulation and fabrication of structures from diverse materials at the sub-100nm length scale. The Dip-Pen Nanolithography (DPN<sup>®</sup>) process is one such method that employs a scanning-probe based system which can be used for a variety of bottom-up assembly techniques including direct-write fabrication, templating, resist patterning and etching, and surface functionalization. Since its invention in the late 1990's, there has been considerable development of DPN applications, processes and instrumentation. DPN is now poised to transition from a tool used primarily in research to a powerful, nanomanufacturing platform. This talk will review the history of the technology in terms of those elements that are critical for DPN to function as a nanomanufacturing process. Recent developments in instrumentation, MEMS and DPN methods will be presented. A specific nanomanufacturing application for large area, nanopatterned surfaces will be described.