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(54) Title: THERMAL CONTROL OF DEPOSITION IN DIP PEN NANOLITHOGRAPHY

(57) Abstract: The present invention describes an apparatus for nanolithography and a process for thermally controlling the deposition of a solid organic "ink" from the tip of an atomic force microscope to a substrate. The invention may be used to turn deposition of the ink to the substrate on or off by either raising its temperature above or lowering its temperature below the ink's melting temperature. This process may be useful as it allows ink deposition to be turned on and off and the deposition rate to change without the tip breaking contact with the substrate. The same tip can then be used for imaging purposes without fear of contamination. This invention can allow ink to be deposited in a vacuum enclosure, and can also allow for greater spatial resolution as the inks used have lower surface mobilities once cooled than those used in other nanolithography methods.



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