

NEW TECHNIQUE TO MAKE LOW DIMENSIONAL NANOSTRUCTURES

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There is a great deal of interest in low dimensional nanostructures such as nanodots, nanowires, and nanobelts. The high surface-area-to-volume ratio of these structures make them good potential choices for diverse applications in gas sensing, catalysis, non-volatile memory, and others. However, in order to be useful, researchers must be able to fabricate and characterize these materials for optimal performance.

Researchers at the NU-NSEC have developed soft electron beam lithography (soft-eBL) – a versatile technique that enables fabrication of low-dimensional nanostructures that can be processed to make single grain wide nanowires, highly mesoporous nanolines, or fully epitaxial single crystal dots that are readily amenable to characterization and evaluation. This introduces new degrees of freedom for convenient control over the chemical composition, microstructure, and morphology of the nanostructures.

