

Abstract Submitted
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Topological Insulator Nanoribbon Synthesis by Metal-Organic Chemical Vapor Deposition¹ LOREN ALEGRIA, MICHAEL SCHROER, GERALD POIRIER, MICHAEL PRETKO, ANASUA CHATTERJEE, Princeton University, SHIVANG PATEL, None, JASON PETTA, Princeton University — We report a method for metal-organic chemical vapor deposition (MOCVD) synthesis of Bi₂Se₃ topological insulator nanoribbons. We use gold nanoparticles to catalyze nanoribbon growth on silicon substrates. Trimethyl Bismuth and Diethyl Selenium are used as the metal-organic precursors. The growth parameters can be varied to control the morphology from narrow nanoribbons to wide platelets. Resulting nanostructures are characterized by electron diffraction, energy dispersive X-ray spectroscopy, and low-temperature transport measurements. We also investigate the synthesis of ternary compounds using this growth method.

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Loren Alegria
Princeton University

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