

Abstract Submitted
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Faceted nanocrystalline growth of FeTe on SrTiO₃(001) YI LI, ZHAOLIANG LIAO, LINA CHEN, JIANNENG LI, AMAR KARKI, RONGYING JIN, WARD PLUMMER, JIANDI ZHANG, LOUISIANA STATE UNIVERSITY TEAM — The new class of iron based superconductors has ignited the materials community. Of all of these new superconductors, the Fe chalcogenide system is probably the simplest at least in structure. One of most interesting questions is how the properties of these systems change as the structure is manipulated. We have studied ultra thin films of FeTe grown on a SrTiO₃(001) surface by using Pulsed Laser Deposition (PLD) and characterized with surface techniques. We observe the formation of faceted nanocrystalline islands at the surface of thin films. The structure of the islanded surface, including the faceting angle of nanostructures, has been studied by Low Energy Electron Diffraction (LEED) as well as scanning tunneling microscope (STM). The correlation of such a 3D-type growth with growth conditions and substrate-induced strain in the ultra-thin films are discussed. *Supported by NSF-DMR1005562

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