

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Epitaxial stabilization and crystal symmetry of ultra-thin heterostructures of (La,Nd)NiO₃/LaAlO₃¹ JAK CHAKHALIAN, JIAN LIU, MICHAEL KAREEV, BENJAMIN GRAY, MOURAD BENAMARA, University of Arkansas, PHIL RYAN, JOHN FREELAND, APS, Argonne National Lab — Recently, interface-controlled heterostructures containing ultra-thin layers of correlated oxides have attracted considerable attention. At the same time, novel synthesis methods based on epitaxial stabilization have enabled a route to stabilization of unusual phases of rare-earth nickelates far away from the bulk equilibrium. Specific features of atomic structure at the interface between rare-earth nickelates and LaAlO₃ and SrTiO₃, the role of strain and crystal geometry resulting in the formation of unusual phases of ultra-thin layers of nickelates will be discussed in detail. The experimental results have been deduced from a combination of synchrotron based XRD, RHEED, high-resolution electron diffraction and soft x-ray spectroscopy.

¹This work was supported by DOD-ARO under Contract No. 0402-17291 and NSF under Contract No. DMR-0747808.

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Date submitted: 25 Nov 2009

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