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Molecular beam epitaxy of $YMnO_3$ on GaN (0001)[1] YEWHEE CHYE, TAO LIU, DEBIN LI, KYOUNGNAE LEE, THOMAS MYERS, DAVID LEDERMAN, Multifunctional Materials Laboratory, Dept of Physics, West Virginia University — Ferroelectric oxide thin films on semiconductors have attracted considerable attention from the physics and engineering communities for their potential applications in nonvolatile memory, piezoelectric, microwave devices, etc. In this work, we describe the molecular beam epitaxial (MBE) growth of the ferroelectric oxide $YMnO_3$ on GaN. $YMnO_3$ is an obvious candidate of oxide films on GaN because they both have hexagonal lattice structure and the lattice constant of $YMnO_3$ is approximately 2 times that of GaN. $YMnO_3$ films are grown on GaN (0001)-on-sapphire templates using MBE. Y and Mn are evaporated using effusion cells. Reactive oxygen was generated by a RF plasma source. The structure of the films as characterized by in-situ RHEED, x-ray diffraction, and atomic force microscopy will be discussed.

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David Lederman
West Virginia University

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