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***In situ* stoichiometry control using reflection high energy electron diffraction generated x-rays**[1] CAMERON KEENAN, SANDEEP CHANDRIL, THOMAS H. MYERS[2], DAVID LEDERMAN, Dept.of Physics, West Virginia University — One major challenge in the stoichiometric growth of complex oxides, such as $YMnO_3$, is the control of the relative compositions of the constituent materials. Desirable properties of oxide materials, such as ferroelectricity, are highly dependent upon material stoichiometry, making stoichiometry control an important issue. While RHEED (Reflection High Energy Electron Diffraction) analysis is typically used as a qualitative tool, RHEED generated x-rays can be used to give quantitative compositional information. The relative compositions of Y and Mn in MBE grown $YMnO_3$ samples were studied using the grazing exit x-rays generated by RHEED electrons. Comparing the results with RBS characterization suggested that the technique has the potential for real-time compositional analysis.

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