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Investigation of EuO Thin Films ADRIAN SWARTZ, J. WONG, YAN LI, J. CIRALDO, R.K. KAWAKAMI, UC Riverside — EuO is an interesting material for magnetism and spintronics applications due to its large magneto-optic effects, metal-to-insulator transition, and spin splitting of the conduction band. While bulk EuO was extensively studied as long as 40 years ago, epitaxial and stoichiometric films have been difficult to produce. We report the growth of the magnetic insulator EuO on Yttrium Stabilized Zirconia (YSZ 100) and GaAs (001) by reactive Molecular Beam Epitaxy (MBE). The growth is achieved in a regime in which excess Eu ions are re-evaporated and the ratio of Europium to Oxygen flux is more than one. Magneto-Optic Kerr Effect (MOKE) demonstrates a transition for all films at 69K. Further, we investigate the optical and transport properties of these films as well as temperature dependence.

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