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Observation of the Temperature driven Insulator to Semiconductor (Ferromagnetic) Phase HANGIL LEE, Beamline Research Division, Pohang Accelerator Laboratory (PAL), K.-J RHO, Electron Spectroscopy Laboratory, Department of Physics, POSTECH, J.-Y KIM, Beamline Research Division, Pohang Accelerator Laboratory (PAL), J.-H PARK, Electron Spectroscopy Laboratory, Department of Physics, POSTECH, PAL TEAM, POSTECH TEAM — We investigated the changes of magnetic properties (para to ferromagnetic) and phase transitions (insulator to semiconductor) in films of EuO grown on a MgO(100) single crystal as a function of temperature. In between 70 K, we found a clear phase transition and magnetic transition using the spin-summed and spin-resolved photoemission spectra, as well as the low energy electron diffraction. We will elucidate the temperature driven electronic and magnetic property in EuO on MgO(100) substrate.

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