

Abstract Submitted
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EuPd₃ ultrathin layers on MgO(001)¹ PAWEL MASLANKIEWICZ, A. Chelkowski Inst. of Phys., Univ. of Silesia, Katowice, Poland and Center for Magnetism and Magnetic Nanostructures, UCCS, Colorado Springs, USA, ZBIGNIEW CELINSKI, Center for Magnetism and Magnetic Nanostructures, UCCS, Colorado Springs, USA, JACEK SZADE, A. Chelkowski Inst. of Phys., Univ. of Silesia, Katowice, Poland — Ultrathin layers (0.8 – 4 nm thick) of EuPd₃ intermetallic compound were grown on MgO(001) substrates by molecular beam epitaxy from elemental sources. In-situ X-ray photoelectron spectroscopy studies revealed a dominant trivalent europium component, in agreement with available data on bulk EuPd₃ (e.g. [1, 2]). As demonstrated by reflection high energy electron diffraction and X-ray photoelectron spectroscopy, growth by co-deposition at elevated temperature (~ 500 °C) or post-growth annealing of Pd/Eu/Pd layers resulted in formation of islands. Formation of EuPd₃ occurs at lower temperatures. Trivalent europium at Pd layers interface was observed even at room temperature. 250 °C is sufficient to form EuPd₃ from individual Pd and Eu layers. [1] I.R. Harris, G.V. Raynor, J. Less-Common Met. **9**, 263 (1965). [2] W.-D. Schneider, C. Laubschat, I. Nowik, G. Kaindl, Phys. Rev. B, Condens. Matter **24**, 5422 (1981).

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