

**Experiment title:**

Hybridization and magnetism in ultrathin Mn films

**Experiment****number:**

HE-33

**Beamline:**

ID12B

**Date of experiment:**

from: 29/7/96

to: 1 1/8/96

**Date of report:**

24/2/97

**Shifts:**

30

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*Received at ESRF:***27 FEB. 1997****Names and affiliations of applicants** (\* indicates experimentalists):

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**Abstract:**

We have studied the electronic and magnetic structure of ultrathin Mn films grown on 3d transition metal surfaces using x-ray absorption and resonant photoemission. At submonolayer coverages Mn deposition leads to a highly localized 3d<sup>s</sup>-like ground state. A delocalized metallic ground state is formed upon increasing Mn-Mn 3d orbital overlap after percolation of the film. A similar state can also be formed through hybridization between Mn and substrate 3d states even at low coverages. As shown by magnetic circular dichroism Mn exhibits long-range ferromagnetic order only in the latter systems, which evidences the importance of 3d hybridization for exchange coupling.

Suf. Sci., in press