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【815】 Magnetolectric coupling between ultrathin Fe films and Pb (Mg_{1/3}Nb_{2/3}) O₃] (1-x)-[PbTiO₃] x, x=0.32 (001) (PMN-PT)

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We study ultra-thin films of Fe magneto-electrically coupled with a ferroelectric substrate PMN-PT (001) .We have grown ultra-thin wedge of Fe with thickness varying from 1 ML to 5 ML on PMN-PT (001) under ultra-high vacuum conditions. We employed x-ray magnetic circular di-chroism (XMCD) technique at, the Fe L₃, 2-edges. The results for the Fe wedge (1-5 ML) shows that the thinner part (1 ML) is paramagnetic while the thicker part (5 ML) is ferromagnetic. Furthermore, we measured a change in the remanent spin magnetic moment for 5 ML of Fe upon switching the ferroelectric polarization of PMN-PT (001).

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