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Observation of surface polarization in a diluted magnetic semiconductor GaMnAs/GaAs(111) CHANGSOO PARK, Seoul National University, H.K. CHOI, C.U. YANG, Y. SHON, J. Y. SON, Y.D. PARK, SEOUL NATIONAL UNIVERSITY COLLABORATION, DONGGUK UNIVERSITY COLLABORATION, POTECH COLLABORATION — We report ferromagnetic and ferroelectric behaviors of a Mn doped GaAs epilayer grown on a GaAs (111) substrate by low-temperature molecular beam epitaxy. We confirmed structure and ferromagnetic properties of the Mn doped GaAs layer by high resolution x-ray diffraction and superconducting quantum interference device measurements. We estimated the ferromagnetic Curie temperature to be 110K from both anomalous Hall effect and magnetization temperature dependence measurements. Electric force microscopy at room temperatures show enhanced ferroelectric switching behaviors on the surface of the Mn doped GaAs (111).

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