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Magnetoelectric Coupling in P(VDF-TRFE)/LCMO Heterojunctions[1] ANIL KUMAR, University of Nebraska-Lincoln, USA, EVGENY KIRIANOV, Lincoln South-West High School, NE, USA, VASILY MOSHNYAGA, I. Physikalisches Institut, Universität Göttingen, Germany, PANKAJ SHARMA, ALEXEI GRUVERMAN, ANDREI SOKOLOV, University of Nebraska-Lincoln, USA — Engineered magnetoelectric heterojunctions have recently attracted significant interest due to the possibility to control magnetic properties by external electric fields. Doped lanthanum manganites are attractive candidates to use as a part of such junctions because of their strong coupling between charge, spin and lattice effects. On the other side the use of a ferroelectric (FE) as a gate electrode has dual benefits: it offers the possibility to design a non-volatile data storage device and provide large charge density change at the interface. The ferroelectric polymer, polyvinylidene fluoride (PVDF), is an interesting candidate due to its outstanding electromechanical, dielectric, and mechanical properties. Here we present results of our transport studies of $La._{67}Ca._{33}MnO_3$ /P(VDF-TrFE) heterojunction. Manganite thin films were grown by MAD technique, followed by Langmuir-Blodgett deposition of ferroelectric polymer. Results are explained by electron accumulation induced metal-insulator transition in the LCMO layer.

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