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Title:	Planar Hall effect and anisotropic magnetoresistance in polar-polar interface of LaVO ₃ -KTaO ₃ with strong spin-orbit coupling
Authors:	Gopal, R.K. (/jspui/browse?type=author&value=Gopal%2C+R.K.) Singh, Yogesh (/jspui/browse?type=author&value=Singh%2C+Yogesh)
Keywords:	anisotropic magnetoresistance polar-polar interface LaVO ₃ -KTaO
Issue Date:	2020
Publisher:	Nature Research
Citation:	Nature Communications, 11(1)
Abstract:	Among the perovskite oxide family, KTaO ₃ (KTO) has recently attracted considerable interest as a possible system for the realization of the Rashba effect. In this work, we report a novel conducting interface by placing KTO with another insulator, LaVO ₃ (LVO) and report planar Hall effect (PHE) and anisotropic magnetoresistance (AMR) measurements. This interface exhibits a signature of strong spin-orbit coupling. Our experimental observations of two fold AMR and PHE at low magnetic fields (B) is similar to those obtained for topological systems and can be intuitively understood using a phenomenological theory for a Rashba spin-split system. Our experimental data show a B ² dependence of AMR and PHE at low magnetic fields that could also be explained based on our model. At high fields (~8 T), we see a two fold to four fold transition in the AMR that could not be explained using only Rashba spin-split energy spectra.
Description:	Only IISERM authors are available in the record.
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