Abstract Submitted
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Superconductivity at oxydes interface NICOLAS BERGEAL, JOHAN BISCARAS, THOMAS WOLF, JEROME LESUEUR, LPEM-CNRS-ESPCI, AKHILESH KUSHWAHA, AJAY GANGWAR, RAMESH BUDHANI, ITT Kanpur — Superconductivity has been discovered at the interface between two insulators, namely $SrTiO_3$ and $LaAlO_3$ [1], which can be tuned by applying a gate voltage [2]. We have recently measured the properties of such heterostructures at low temperature. The carrier density can be modulated by field effect, and so the superconducting and normal properties. We will present a study of the phase diagram and an analysis of the superconductor-insulator transition observed at low carrier density. We will also discuss the possibility to observe superconductivity in other oxides interfaces.

[1] N. Reyren et al, Science 317, 1196 (2007)
[2] A. Caviglia et al, Nature 456, 624 (2008)

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