Fabrication of La$_{2-x}$Sr$_x$CuO$_4$ Superconductor Nanodevices

NICHOLAS LITOMBE, Harvard University, ANTHONY BOLLINGER, IVAN BOZOVIC, Brookhaven National Laboratory, JENNY HOFFMAN, Harvard University — In order to investigate dimension-limited superconductivity in cuprates, we explore methods of nanopatterning La$_{2-x}$Sr$_x$CuO$_4$ (LSCO). We use high resolution e-beam and photo-lithographic fabrication techniques, coupled with appropriate chemical and physical pattern transfer techniques. In particular, we focus on quasi-1D LSCO nanowire devices where we study random telegraph noise (RTN) signals from possible nematic domain fluctuation dynamics.

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