Abstract Submitted
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Combinatorial Hall Effect System for Oxide Films[1] JEFFREY CLAYHOLD, Physics Department, Miami University, Oxford, OH 45056, BRYAN KERNS, DAVID RENCH, MICHAEL SCHROER, IVAN BOZOVIC, Brookhaven National Laboratory — Combinatorial film growth techniques have made it possible to produce large numbers of high-quality oxide films at one time. Characterizing the samples by traditional methods would be far too slow. Certain measurements, such as the the Hall effect, require careful temperature control and lock-in amplifiers to resolve the small signal. We have built special-purpose, multi-channel resistance bridges to measure the Hall effect simultaneously in 32 samples. The voltage resolution is less than 2 nV for signals on the order of 1 μV, for a signal-to-noise ratio of 500. We will discuss Hall effect data from samples of $La_{2-x}Sr_xCuO_4$.

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