Abstract Submitted
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Combinatorial Hall Effect System for Oxide Films\textsuperscript{1} JEFFREY CLAYHOLD, Physics Department, Miami University, Oxford, OH 45056, BRYAN KERNS, DAVID RENCH, MICHAEL SCHROER, IVAN BOZOVIĆ, 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 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 $\mu$V, for a signal-to-noise ratio of 500. We will discuss Hall effect data from samples of La$_{2-x}$Sr$_x$CuO$_4$.

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