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An Automated, High-Throughput System for GISAXS and GIWAXS Measurements of Thin Films ERIC SCHAIBLE, Lawrence Berkeley National Laboratory, JESSICA JIMENEZ, Lawrence Livermore National Laboratory, MATTHEW CHURCH, SLAC National Accelerator Laboratory, EUNHEE LIM, University of California, Santa Barbara, POLITE STEWART, Southern University and AM College System, ALEXANDER HEXEMER, Lawrence Berkeley National Laboratory — Grazing incidence small-angle X-ray scattering (GISAXS) and grazing incidence wide-angle X-ray scattering (GIWAXS) are important techniques for characterizing thin films. In order to meet rapidly increasing demand, the SAXSWAXS beamline at the Advanced Light Source (beamline 7.3.3) has implemented a fully automated, high-throughput system to conduct SAXS, GISAXS and GIWAXS measurements. An automated robot arm transfers samples from a holding tray to a measurement stage. Intelligent software aligns each sample in turn, and measures each according to user-defined specifications. Users mail in trays of samples on individually barcoded pucks, and can download and view their data remotely. Data will be pipelined to the NERSC supercomputing facility, and will be available to users via a web portal that facilitates highly parallelized analysis.

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