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Fast Analysis of Time-Resolved Scattering Data ALEXANDER HEXEMER, DINESH KUMAR, SINGANALLUR VENKATAKRISHNAN, ABHINAV SARJE, SIMON PATTON, SHERRY LI, JACK DESLIPPE, CRAIG TULL, Lawrence Berkeley Natl Lab, ELI DART, ESNET, FENG LIU, THOMAS RUSSELL, Amherst UMass, ENRIQUE GOMEZ, The Pennsylvania State University, CHENHUI ZHU, ERIC SCHAIBLE, POLITE STEWART, Lawrence Berkeley Natl Lab, CAMERA TEAM, ESNET TEAM, SPOT SUITE TEAM, UMASS COLLABORATION, PENNSTATE COLLABORATION — Organic Photovoltaics hold promise to reduce costs and increase efficiency. Most efforts have focused on spin-coating to fabricate high performance devices, a process that is not amenable to large scale fabrication. This mismatch in device fabrication processes makes it difficult to translate quantitative results obtained from laboratory scale devices to commercially prepared large area devices. Using a mini-slot die coater, designed and build in house, we address this issue, where the commercial process is translated to the laboratory setting. Grazing Incidence Small Angle X-ray Scattering was used to probe the change in morphology during the printing process. HIPGISAXS was used to fit the data in real-time by utilizing different ASCR facilities. SPOT orchestrated the workflow for the data: the transfer from the beamline to NERSC and subsequently to the TITAN supercomputer for fitting and back to NERSC.

Alexander Hexemer
Lawrence Berkeley Natl Lab

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