

Abstract Submitted
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Study of Electrode Surface Dynamics Using Coherent Surface X-ray Scattering¹ HOYDOO YOU, Argonne National Laboratory, MICHAEL PIERCE, Rochester Institute of Technology, VLADIMIR KOMANICKY, Safarik University — We present successful efforts to develop a new surface x-ray scattering technique that allows in-situ measurements of surface dynamics in electrochemical systems. The technique, sensitive to the microstates of the system, can measure the transient dynamics of phase relaxation from one phase to another upon changing electrochemical conditions, as well as the equilibrium dynamics of microstates even if the electrode macroscopic state appears static. We will discuss the underlying physics of surface x-ray speckle correlation spectroscopy and present our recent study of Au (100) surface in vacuum, water, and electrolytes.

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