

Abstract Submitted
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High Energy XRD/XRF for High-Throughput Phase Mapping of Composition Spread Thin Films¹ JOHN GREGOIRE, DARREN DALE, ALEXANDER KAZIMIROV, MICHELE TAGUE, HECTOR ABRUNA, FRANCIS DISALVO, R. BRUCE VAN DOVER, Cornell University — Analysis of thin film inorganic libraries is an increasingly popular technique for materials discovery and optimization. For ternary and higher-order libraries, the high-throughput determination of the crystalline phase fields is an active field of research due to its importance in understanding a given material system. We discuss our techniques for high-throughput data acquisition and analysis using a 60keV x-ray source at the Cornell High Energy Synchrotron Source. The techniques provide simultaneous mapping of the composition, crystalline phase, and fiber texture of a composition spread thin film. We also demonstrate the utility of this data in interpreting our measurements of the thin film's catalytic activity for the oxidation of methanol.

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