

Abstract Submitted
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ChemMatCARS: A National Synchrotron Facility for Chemistry and Materials Research¹ BINHUA LIN, DAVID SCHULTZ, MATI MERON, TIM GRABER, JEFF GEBHARDT, DAVID COOKSON, MYUNGAE LEE, P. JAMES VICCARO, CARS, the University of Chicago — ChemMatCARS is a national synchrotron x-ray facility dedicated primarily to static and dynamic condensed matter chemistry and materials science. The facility makes use of highly intense x-ray radiation, tunable over the range of 6 to 32 keV. Key experimental capabilities include time-resolved measurements to the sec- time domain, element-, valence-specific resonant diffraction, and high-energy x-ray scattering. A list of currently available techniques includes the following: surface sensitive x-ray scattering to investigate dynamical and structural properties of surfaces and interfaces in a variety of liquid and solid systems, small and wide-angle x-ray scattering from condensed matter for the study of polymers, colloids, composite materials, fiber (structure and processing), and crystallization kinetics, micro-crystal diffraction to study charge densities, distributions and mixed valence systems, time- resolved crystallography to probe transient species in chemically excited states and anomalous scattering techniques which make use of elemental absorption edges.

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