

Abstract Submitted
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A high energy x-ray diffraction study of the atomic structure of novel rare earth ultraphosphate glasses MEHDI ALI, KANISHKA MARASINGHE, University of North Dakota, ROBERT HART, CHRIS BENMORE, Argonne National Laboratory, NATHAN WYCKOFF, RICHARD BROW, University Of Missouri-Rolla — Rare earth ultraphosphate (REUP) glasses have exciting magnetic and optical properties with numerous potential applications. These properties depend heavily on the atomic structure, especially the rare earth coordination environment. A series of rare earth (namely Neodymium, Gadolinium, and Erbium) ultra phosphate glasses have been studied using high energy (112-114 KeV) X-ray diffraction technique. A heuristic approach used for determining the appropriate normalization of X-ray scattering data and for confirming the sample compositions will be presented. Dependence of the rare earth coordination environment on the type and concentration of the rare earth atoms as determined by these high energy X-ray studies will be discussed.

Gaya Marasinghe
University of North Dakota

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