

“Through a Glass Darkly” - Photoinduced Phenomena in Chalcogenide Glasses

S.R. Elliott

Department of Chemistry, University of Cambridge, Lensfield Road, Cambridge CB2 1EW.

Chalcogenide glasses exhibit very many different photoinduced phenomena. In this talk an introduction to these phenomena will first be given, followed by a discussion of our recent experimental results on the opto-mechanical effect (photoinduced creation of differential mechanical stress). A discussion of our ongoing *ab initio*-based molecular-dynamics simulations of chalcogenide glasses will also be given, including our recent theoretical discovery of a new type of coordination defect in these materials, namely a “see-saw” ($\text{As}_4^- - \text{S}_3^+$) defect.