MONASH University

Monash Centre for Electron Microscopy

Monash Centre for Electron Microscopy Seminar

Rethinking Structure in Amorphous Materials: From Geometry to Statistics

Wednesday 30th November

11.00am – 12.00pm

Science Lecture Theatre S12, Bldg 25, 16 Rainforest Walk, Monash University

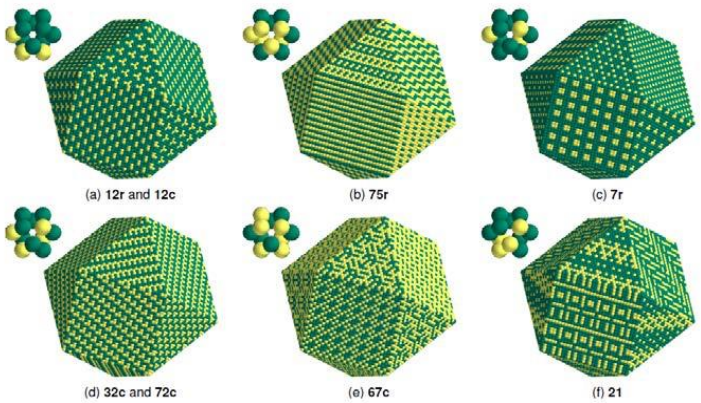
Presenter

Peter Harrowell

School of Chemistry, University of Sydney

Abstract

Despite a long history, there remain many important open questions about, not just the best description of structure in liquids and glasses, but what use these structures provide in terms of understanding the properties of amorphous materials. This talk will introduce the basic questions concerning the role of structure in materials science, how that structure is characterised and then present recent results on how the geometry of the locally stable structures in an amorphous materials influence the stability of the material with respect to crystallization. A central conclusion of this research is that advances in the study of amorphous structure will involve abandoning the traditional descriptive geometrical approach to structure in favour of regarding structure in terms of the statistical correlations between local structural elements



About the Presenter

Peter Harrowell graduated from the University of Sydney and then completed a PhD at the University of Chicago. After a postdoc at Colorado State University he returned to the University of Sydney where he is a Professor of Theoretical Chemistry. He has been Visiting Professor at the universities of Utrecht, Stanford, Cambridge, Peking and Tohoku and at the Weizmann Institute in Israel. He has served on a variety of international conference committee, including Cahir of the 2011 Gordon research Conference on Liquids. Peter's research includes theoretical and computational studies of the glass transition, crystallization, thin film rheology, and dynamics at interfaces.

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