

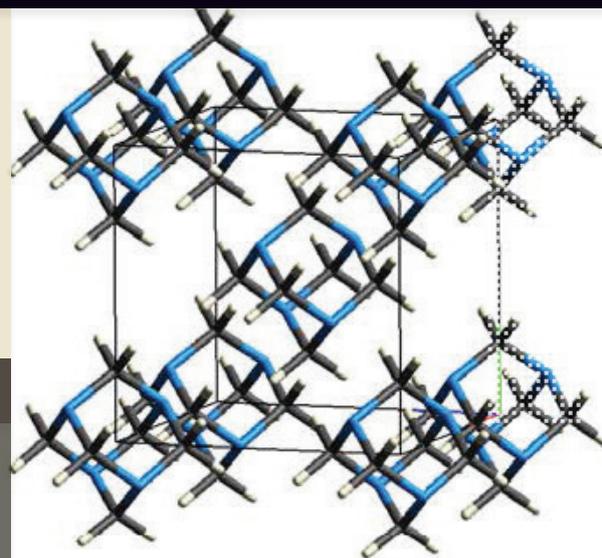


THE UNIVERSITY OF
WESTERN AUSTRALIA

Molecules in Crystals

THE INTERNATIONAL YEAR OF CRYSTALLOGRAPHY 2014 (IYCR2014)

A public lecture by **Mark Spackman**, Winthrop Professor and Head, School of Chemistry and Biochemistry, The University of Western Australia



We all know what crystals are, but how much do we know about what lies within? And how do we know it?

This year celebrates the centenary of X-ray crystallography, but attempts to understand the relationship between the external form of crystals, and the arrangement of the particles within, date back to some remarkable insights made by Kepler, Hooke and Huygens in the 17th century. Real progress in understanding the structure, shape and properties of the 'globules' or 'corpuscles' from which crystals were thought to be built had to wait until the 19th century, with the foundations of modern stereochemistry.

The development of atomic theory and quantum mechanics in the early 20th century, coupled with the discovery of X-ray diffraction, enabled the first experimental verification of the regular periodic arrangements of particles in crystals. The vast number of crystallographic studies that followed have provided extraordinary detail on the three-dimensional arrangement of atoms in molecules and crystals, and especially the way molecules interact and arrange themselves to form crystals.

In this lecture Professor Spackman will trace some of this fascinating story, partly from the viewpoint of his novel partitioning of crystals into discrete molecular fragments, and the development of

software now used worldwide for the identification, analysis and discussion of intermolecular interactions in molecular crystals. The link between this modern perspective and very early ideas on the internal structure of crystals will be presented through several studies on molecular crystals that have become landmarks in the development of modern X-ray crystallography.

About Mark Spackman

Mark Spackman is Winthrop Professor and Head of the School of Chemistry and Biochemistry at The University of Western Australia. In 2003 he was awarded a five-year ARC Australian Professorial Fellowship (2004-2008), enabling him to focus full-time on his research for an extended period.

Professor Spackman is active in a national and international professional capacity. He has been Secretary (1995-1997) and President (2001-2003) of the Society of Crystallographers in Australia & New Zealand, a member of the Australian Academy of Science National Committee for Crystallography (1994-2004, 2008-2011), and was a past member (1993-1998) and Chair (1999-2002) of the International Union of Crystallography Commission on Charge, Spin and Momentum Densities. He has also served as a member of the ARC Expert Advisory Committee on Physics, Chemistry and Geoscience (2002-2003).

In 2013, Professor Spackman was awarded the prestigious Royal Swedish Academy of Sciences (RSAS) 2013 Gregori Aminoff Prize in Crystallography.

Event Details

Date: Wednesday 17 September 2014

Time: 6pm

Venue: Woolnough Lecture Theatre,
Geography and Geology
Building, UWA

Parking: P18&20, via Fairway entrance 2

Cost: Free, but RSVP essential via

www.ias.uwa.edu.au/lectures/crystallography



This lecture is part of the International Year of Crystallography lecture series at UWA, sponsored by the Institute of Advanced Studies and the School of Chemistry and Biochemistry.

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