

**W0575**

**LMX: Large Molecule Neutron Diffractometer for Supramolecular Chemistry and Biological Structure.** Lee Brammer, Dept. of Chemistry, Univ. of Sheffield, Brook Hill, Sheffield S3 7HF, UK, lee.brammer@sheffield.ac.uk

In the past neutron diffraction has required the use of very large crystals due to flux limitations and has been confined to the study of systems with relatively small numbers of independent atoms. A major change is taking place with the development of new diffractometers and new (spallation) sources that promises to deliver opportunities to study crystals of a size that was in common usage for X-ray diffraction only 20-30 years ago. Much larger unit cells will also be accessible.

This talk will focus on the potential new areas of chemistry, materials and structural biology that will become accessible to structural investigation by neutrons in the coming years. In the UK, our efforts are focussed on development of the LMX diffractometer on the new cold neutron target station (TS2) at the ISIS spallation neutron source. The areas of application we envisage for this new instrument include supramolecular chemistry, organometallic chemistry, molecular magnets and single molecule magnets, zeolites and inorganic framework materials, organometallic chemistry, partially ordered fibers of synthetic and biological polymers and protein crystallography.