

Solid-State NMR Characterization of MOFs: From Ultra-wideline Spectra of Quadrupolar Nuclei to Ultra-High-Resolution ^1H Spectra



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Seminar Series

Presented by...

Professor Yining Huang

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Abstract

One of the most exciting recent advances in the field of porous materials is development of hybrid organic-inorganic solids, or metal-organic frameworks (MOFs). MOFs have high thermal stability, permanent porosity, a flexible framework and exceptionally high surface areas, leading to many important applications.

Although many MOF structures have been determined by single-crystal X-ray diffraction, many others must be refined from more limited powder XRD data because of the lack of suitable single crystals. Further, activation processes such as dehydration and desolvation tend to reduce the crystallinity and lead to fragmentation of single crystals. This requires additional information from complementary techniques, such as solid-state NMR (SSNMR) spectroscopy. SSNMR is sensitive to short-range ordering and local structure, while X-ray probes long-range ordering and periodicity. Together, both techniques provide a more complete picture on overall MOF structure.

Professor Huang will report recent work on multinuclear SSNMR characterization of MOF-based materials.

Host: Jianzhi Hu, 1-6544

Admin POC: Barb Goodwin, 1-6977



Date: Friday,
August 29, 2014

Location: EMSL
Boardroom (1012)

Time: 2:30 p.m.