
The 160th iCeMS SEMINAR

Mon 17 March 2014
16:00-17:30

Flexible MOFs: Providing a Window into Inorganic Chemistry and Reactivity

Lecturer: **Assoc Prof Christopher J Sumby**
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Venue: Room A2-303, Katsura Campus
Kyoto University

Metal-organic frameworks, also known as porous coordination polymers (PCPs), are crystalline materials that can be synthesised from metal ions or metal-oxide clusters (joints) and organic building blocks (links). Through careful consideration of the nature of the organic links that are incorporated into a MOF, the properties of the material can be tailored for particular applications. The ability to tune the flexibility of a framework, wherein the material may show enhanced or diminished pore volumes, surface areas and gated adsorption behaviour, are highly sought-after modifications.

In this regard, we have been investigating the synthesis of MOFs that contain organic links whereby coordination and/or guest removal can modulate the flexibility of the link and hence the framework. This seminar will outline a number of new results in this area pertaining to crystal-to-crystal transformations, switchable physical properties, and CO₂/N₂ separations. We will also discuss new results on how such flexible MOFs can be used to provide structural insight into inorganic reactivity through single crystal X-ray crystallography.

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Hosted by: iCeMS (Institute for Integrated Cell-Material Sciences), Kyoto University

