

Multicomponent Metal-Organic Frameworks

Shane Telfer¹

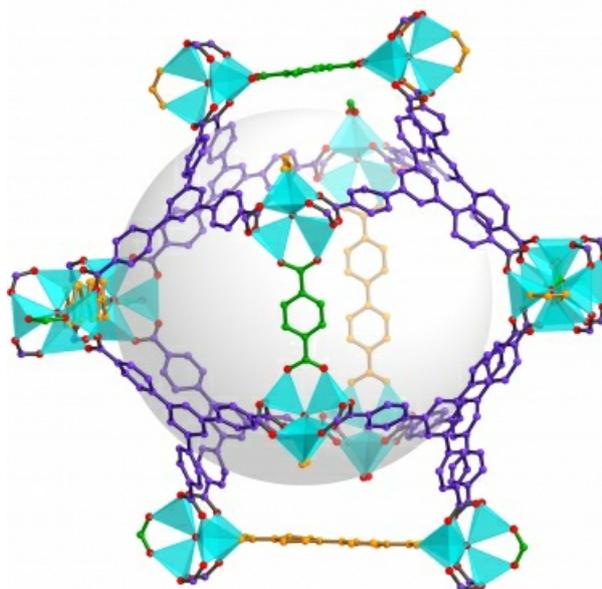
¹*Institute Of Fundamental Sciences, Massey University, Palmerston North, New Zealand*
E-mail: s.telfer@massey.ac.nz

MOFs are distinguished from other porous materials by their compositional diversity and structural regularity. While typical MOFs are rather simple, comprising just one type of joint and linker, MOFs that feature multiple, topologically-distinct, linkers offer new perspectives on framework design and functional properties. Because the position of each linker in the lattice is determined by its backbone structure, regularity prevails over randomness. Isorecticular series of frameworks can be design and synthesized by introducing modified linkers that bear various substituents. In this way complex, pore architectures that feature three-dimensional arrays of functional groups can be programmed. Multicomponent MOFs produced in this way allow for the optimization of functional attributes, such as selective gas uptake and catalysis. In this presentation, I will discuss our recent work on the synthesis and properties of multicomponent MOFs based on MUF-77 (MUF – Massey University Framework).

[1] S.J. Lee, C. Doussot, A. Baux, L. Liu, C. Richardson, G.B. Jameson, J. J. Pak, F. Trousselet, F.-X. Coudert, and S. G. Telfer, *Chem. Mater.* 2016, 28, 368-375.

[2] L. Liu and S. G. Telfer, *J. Am. Chem. Soc.* 2015, 137, 3901-09.

[3] L. Liu, K. Konstas, M. R. Hill and S. G. Telfer, *J. Am. Chem. Soc.* 2013, 135, 17731-4.



Keywords: [MOF](#), [adsorption](#), [catalysis](#)