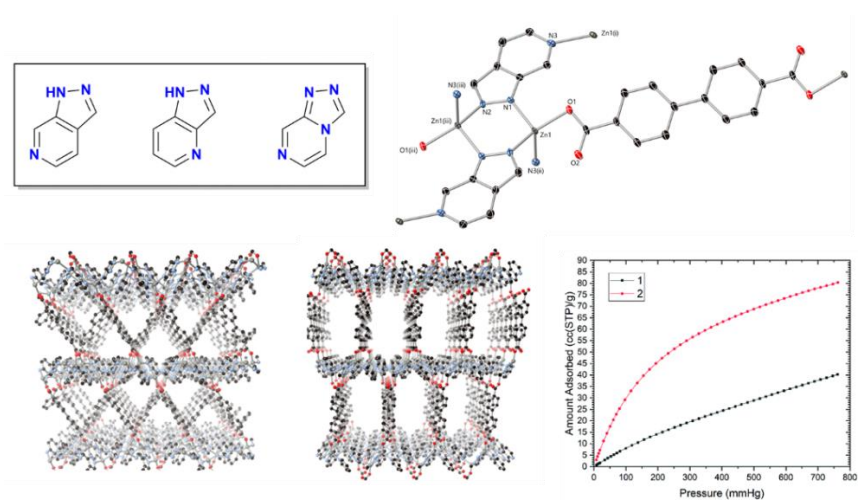


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## Expanding the MOF Chemist's Toolbox with Fused Aza-heterocyclic Ligands

Despite their ever-increasing popularity in inorganic and materials chemistry, the expansion of Metal-Organic Frameworks and related materials into the commercial sector is still hampered by recurring issues around stability and cost. Wider exploration of ligand-centred functionalities may overcome this bottleneck and lead to a greater application scope for these materials. Major progress has been made recently in systems containing mixed ligand functionalities such as CALF-20, a zinc MOF with a 1,2,4-triazolate/oxalate ligand set, showing exceptional capacity for industrial CO<sub>2</sub> separations.<sup>1</sup> Our goal is to explore new ligand systems containing fused heterocyclic functionalities (Figure 1),<sup>2</sup> exploiting the hydrolysis resistance offered by strong metal-azolate bonds and their opportunities for new geometries, photophysical properties and backbone functionalities. This presentation will outline our progress in using these building blocks to construct MOFs and coordination assemblies.



**Figure 1** Examples of fused pyrazolopyridine and triazolopyridine bridging ligands, their resulting coordination compounds and indicative CO<sub>2</sub> uptake performance

## Biography

Chris completed his BSc(Hons) and PhD with Paul Kruger at the University of Canterbury, and held postdoctoral positions with David Turner and Stuart Batten at Monash University, Australia (2012-2015) and Thorri Gunnlaugsson at Trinity College Dublin, Ireland (2015-2017). In 2017 he was appointed as a Lecturer in Inorganic Chemistry at Keele University, U.K. where he is currently joint Programme Director for the Chemistry and Medicinal Chemistry BSc and MChem programmes. Chris also serves on the editorial advisory boards for CrystEngComm and the Journal of Coordination Chemistry.

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