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Exploiting Pressure to Induce “Guest-Blocked” Spin Crossover

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Spin Crossover (SCO) is a phenomenon where a 3d⁴⁻⁷ metal ion reversibly switches between two electronic states, namely high spin (HS) and low spin (LS), under an external perturbation, such as temperature, pressure or light irradiation.[1] SCO behaviour is driven by short- and long-range lattice interactions which enables spin state cooperative propagation throughout the material, resulting in hysteretic and multi-step spin transitions.[2] Hofmann-type framework materials, in particular, are of interest as their robust lattice structure allows direct correlation of magnetic and structural effects in terms of both guest steric (i.e., internal pressure) and electronic effects.[3] This study focuses on a 2D Hofmann-type framework incorporating a 1,2,4-triazole functionalised ligand where the application of hydrostatic pressure uncovers “hidden” SCO properties as well as the range of host–host and host–guest interactions associated with these features.[4]

References

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- [2] M. A. Halcrow, Chem. Soc. Rev. 2011, 40, 4119-4142.
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Are you a student?

No

Do you wish to take part in the Student Poster Slam?

No

Are you an ECR? (<5 yrs since PhD/Masters)

No

What is your gender?

Female

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