

When chemistry meets physics: high-performance molecule-based magnets

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Magnets derived from molecule-based precursors have been viewed as emerging materials for next-generation technologies. These materials offer several commercial advantages compared to their inorganic counterparts such as reducing device fabrication costs (e.g., low-energy production, high abundance of elemental sources) and combining magnetic properties with other physical properties (e.g., conductive, mechanical). In this presentation, I will talk about a general, simple and efficient methodology to synthesize lightweight molecule-based magnets. The resulting metal-organic ferromagnets will feature critical temperatures up to 242°C and a 7500-oersted room-temperature coercivity [1].

References:

[1] P. Perlepe et al, *Science*. 370, 587-592 (2020).