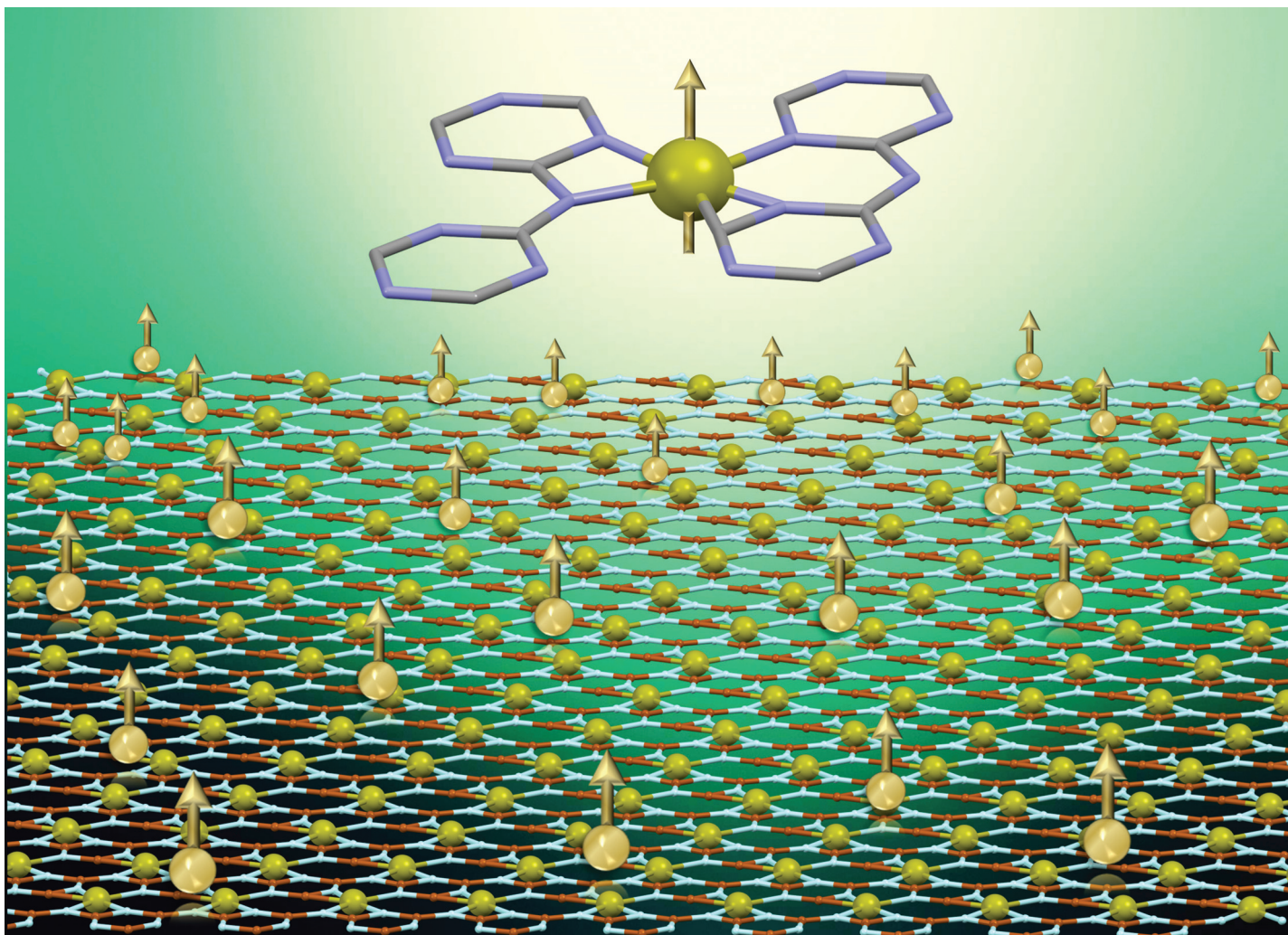


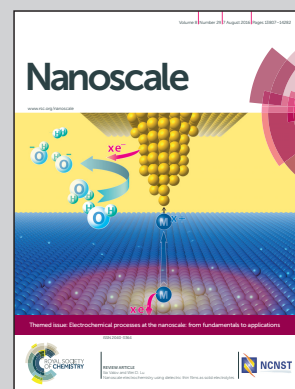


Showcasing research from the Computational Materials Design Group (CMDG), Discipline of Chemistry and Center for Material Science and Engineering, Indian Institute of Technology Indore, India.

Transition-metal embedded carbon nitride monolayers: high-temperature ferromagnetism and half-metallicity

High temperature ferromagnetic materials with planar surfaces are promising for spintronics applications. Using state-of-the-art density functional theory (DFT) calculations, transition metal embedded carbon nitride monolayers (TM@gt-C₃N₄) are studied for possible spintronics devices. Here, we report that Cr@gt-C₃N₄ is a promising material for high temperature spintronics devices as it is a ferromagnetic half-metallic material with a Curie temperature of ~450 K, which is higher than that of any planar 2D materials studied to date.

As featured in:



See Biswarup Pathak *et al.*,
Nanoscale, 2016, 8, 14117.



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