

Abstract Submitted
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A Copper Nitride Nanotemplate for Individual Magnetic Molecules BEN WARNER, London Centre for Nanotechnology, Department of Physics & Astronomy, UCL, London, UK, FADI EL HALLAK, London Centre for Nanotechnology, UCL, London, UK, MICHAEL WATERS, School of Chemistry, University of Nottingham, Nottingham, UK, JORIS VAN SLAGEREN, Institut für Physikalische Chemie, Universität Stuttgart, Stuttgart, Germany, CYRUS HIRJIBEHEDIN, London Centre for Nanotechnology, Department of Physics & Astronomy, Department of Chemistry, UCL, London, UK — Molecular magnets hint at a promising future in information technology applications because of their interesting quantum and magnetic properties in the bulk. If these molecules are to be useful for device applications, it may be necessary to place them on surfaces, and work has begun to concentrate in this area. However, the practical issues of isolating and accessing these molecules have yet to be resolved. We present scanning tunnelling microscopy (STM) data on FePc and (DyPc₂) deposited on a (Cu₂N-Cu(100)) surface. (Cu₂N-Cu(100)) forms a quasi-periodic lattice, and has been shown to force porphyrin molecules to sit at specific sites (D. Ecija et al., Appl. Phys. Lett. 92, 223117 (2008)). As with the porphyrins, we find that these molecules sit at the intersection of the copper lines. This spatial separation restrains any potential dipolar or exchange interaction between the molecules, and it allows for individual, independent spins to be addressed. Using data taken with an STM we investigate the properties of these molecules, and furthermore show that the molecules on this surface are immobile up to room temperature.

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