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STM studies of Lanthanide Phthalocyanine molecules on metallic and thin-insulating surfaces FADI EL HALLAK, BEN WARNER, UCL, UK, MICHAEL WATERS, U. Nottingham, UK, JORIS VAN SLAGEREN, U. Nottingham, UK; U. Stuttgart, Germany, CYRUS F. HIRJIBEHEDIN, UCL, UK — Molecules deposited onto surfaces are of interest because of their potential use as nano-scale electronic components. More recently, the magnetic properties of these systems have also become accessible. Using scanning tunneling microscopy (STM), it is possible to study both sets of properties, and to examine the local environment of the molecules. For example, large magnetic anisotropies have been observed for transition metal Phthalocyanine (Pc) molecules on thin insulators, which decouple the spin from the underlying metal. We present STM imaging and spectroscopy data on lanthanide double-decker Pcs. We explore the different binding configurations and study how these can influence the properties of these molecules on surfaces.

C.F. Hirjibehedin
UCL, UK

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