

# Imaging the induced magnetic moment in spin-bearing molecules by means of X-ray Photo-Emission Electron Microscopy

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The assembly of spin-bearing metal-organic molecules, as for instance metallo-porphyrins and -phthalocyanines, on ferromagnetic substrates has received significant attention during the last few years [1, 2, 3]. So far most of the studies have been carried out by spectroscopic techniques lacking of spatially resolved information. Here, we present the first spectro-microscopic investigation performed by X-ray PEEM on a model system [3] consisting of manganese(III) tetraphenylporphyrin chloride (MnTPPCL) molecules adsorbed on various surfaces like native Co, oxygen-covered Co, and a chromium wedge layer on Co[4]. Our results demonstrate that X-ray PEEM in combination with X-ray magnetic circular dichroism can be used to study the induced magnetic moments in a molecular monolayer of spin-bearing molecules with submicron spatial resolution.

[1] H. Wende et al., Nat. Materials 6, 516 (2007)

[2] C. Wäckerlin et al., Chem. Science 3, 3154, (2012)

[3] A. Scheybal et al., Chem. Phys. Lett. 411, 214 (2005)

[4] J. Girovsky et al., submitted (2013).

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