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**Kondo physics with organic molecules** VIOLETA IANCU, APARNA DESHPANDE, ALEXANDER GOVOROV, SAW-WAI HLA, Condensed Matter and Surface Science Program at Ohio University, Department of Physics and Astronomy, Ohio University, Athens, OH-45701, USA — The presence of a magnetic impurity on a nonmagnetic metal substrate is known to give rise to a Kondo resonance in the local density of states (LDOS) of the sample. We have carried out a low temperature STM study on a Co-porphyrin molecule, 5, 10, 15, 20-Tetrakis-(4-bromophenyl)-porphyrin-Co (II) 98%, adsorbed on a Cu(111) substrate. Single molecules as well as self-assembled molecular layers (SAM) were studied by scanning tunneling spectroscopy at 12 K. A suppression of the LDOS at the Fermi energy was observed and is explained in terms of the Kondo resonance. Electronic properties of molecules are crucial for the design of new molecular electronic devices. This work is financially supported by the US-DOE grant: DE-FG02-02ER46012.

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