

SEMINAR

Magnetic order in a purely organic 2D layer adsorbed on epitaxial graphene

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Collective magnetic properties are usually associated with the d or f electrons that carry the individual magnetic moments. A fully spin-polarized ground state based on π -electrons has been predicted in half-filled flat-band organic materials [1], but has remained experimentally challenging to realize. In this talk, a joint study based on scanning tunneling microscopy (STM) and density functional theory (DFT) will be presented, showing that magnetism can develop spontaneously in non-magnetic organic electron acceptors [2], when they are deposited on graphene grown epitaxially on transition metal surfaces [3,4,5]. This paves the way for incorporating novel magnetic functionalities into graphene.

- [1] R. Arita et al. *Phys. Rev. Lett.* **88**, 127202 (2002)
- [2] M. Garnica, D. Stradi et al., *Nature Physics*, Accepted (2013)
- [3] A. L. Vázquez de Parga et al., *Phys. Rev. Lett.* **100**, 056807 (2008)
- [4] D. Stradi et al., *Phys. Rev. Lett.* **106**, 186102 (2011)
- [5] D. Stradi et al., *Phys. Rev. B* **85**, 121404R (2012)

REMEMBER

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Invited by: Dr. Pablo Ordejón