



Colloquium Announcement

of the Collaborative Research Centre 951

“Hybrid Inorganic/Organic Systems for Opto-Electronics”

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Probing Functions with sub- Molecular Resolution

Time: Monday, May 07, 2018, 3 pm c.t.

Place: IRIS Adlershof, Zum großen Windkanal 6,
Room 007.



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Probing Functions with sub-Molecular Resolution

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Spectroscopy using scanning tunneling microscope (STM/ STS) utilizing the ultimate spatial resolution of STM is a useful tool to unveil the site specific character of molecules at surfaces. STS including inelastic electron tunneling spectroscopy (IETS) is not only applied to the static spectroscopy but also reflects dynamical phenomena as motion or reaction of molecules induced by the excitation of molecular states, and is utilized to identify the quantum states of the materials [1-3]. Spin state of the molecule depends on the strength of the coupling between the molecule and substrate. Example will be given for the FePc [4-6]. The spin state of FePc changes when connected to metal tip of STM [7].

References:

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- [5] N. Tsukahara, et al., *Phys. Rev. Lett.* **106** (2011) 187201.
- [6] E. Minamitani, et al., *Phys. Rev. Lett.* **109** (2012) 086602.
- [7] R. Hiraoka et al., *Nature Commun.* **8** (2017) 16102.