

Lecture Series on “Developments in STM”



Speaker: Gernar Hoffmann (Subgroup leader in the group of Prof. Wiesendanger local magnetic spectroscopy of molecular magnetism)

Time: Wed Morning 9:45~10:30 (+ 30 min discussion)

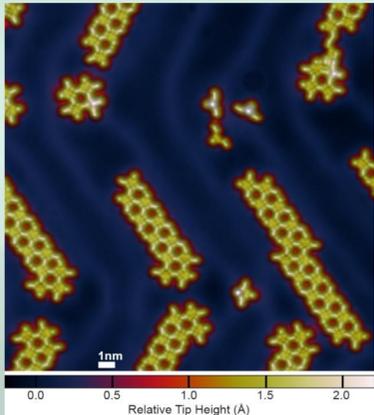
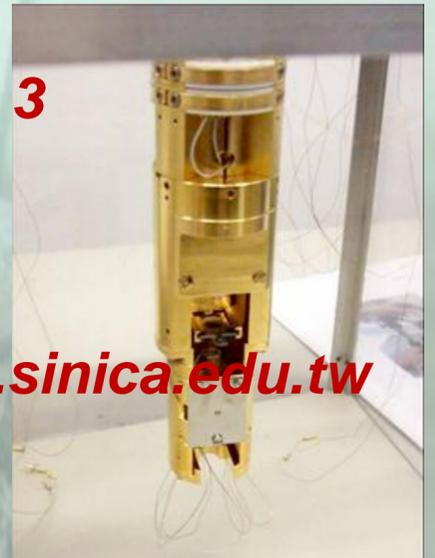
on July 6,13,20,27 and August 3

Location: P101 Meeting Room

Registration : Contact Ms. Chen

Tel: 2789-8356

Email: ywchen@phys.sinica.edu.tw



Abstract:

Scanning tunneling microscopy (STM) gives a fascinating access to the structure and the properties of materials on the smallest length scale of condensed matter. Although already the 30th anniversary of the invention of STM is approaching, the development of new modes of measurement still continues at a surprising speed with new material classes addressed and physical properties becoming accessible.

In my lecture series “Developments in STM”, I want to give students an insight into this amazing technology, thereby adjusted to the activities at the Institute of Physics: Lecture No. 1 will address the development of STM from a purely imaging technique to a powerful tool and on the background of tunneling experiments. Lectures No. 2-4 will focus on practical aspects based on my own experiments and experience.

Nearly weekly a new highlight experiment is reported in Nature or Science of a quality which seems nearly unbelievable as the efforts to achieve these results stay invisible. Here, I will try to uncover some of the hidden secrets. This will cover design consideration to maintain a low-noise environment (Lecture No. 2) and I will discuss the operation of the Lock-In technique (Lecture No. 3). Magnetic imaging, which seems to be trivial as it ‘only’ requires a magnetic probe and the complications in the background will be subject of Lecture No. 4. The Lecture Series will be completed by an overview on recent developments in the field of STM to motivate the audience to participate this challenge to explore new fields of physics.

