



International Max Planck Research School Functional Interfaces in Physics and Chemistry

Introductory course on *Interface/surface science and data acquisition/analysis*

When? 7 Apr (Monday) to 10 Apr (Thursday) 2014
Where? Fritz Haber Institute, Faradayweg 16, 14195 Berlin
 (close to U3 station Thielplatz)
 Department of Chemical Physics (building P, seminar room , 3rd floor)

Topics:

- Surfaces/interfaces of solids: characterization, electronic structure, thermodynamics
- Special focus on heterogeneous catalysis and organic solids
- Scientific toolbox: signal analysis, analog-to-digital conversion and data acquisition

Everyone is welcome to attend - no registration required!

	Mon, 7 Apr	Tue, 8 Apr	Wed, 9 Apr	Thu, 10 Apr
9:00-10:30h	H.-J. Freund (FHI): <i>Introduction to surfaces and their characterization</i>	R. Schomäcker (TU): <i>Fundamental aspects of applied heterogeneous catalysis (part 1)</i>	T. Kampfrath (FHI): <i>Signal theory: Fourier analysis, signal sampling and reconstruction</i>	H. Junkes (FHI): <i>Data acquisition with Matlab, LabVIEW, EPICS, Root, Tango</i>
11:00-12:30h	M. Wolf (FHI): <i>Electronic structure of solids and their surfaces</i>	R. Schomäcker (TU): <i>Fundamental aspects of applied heterogeneous catalysis (part 2)</i>	H. Junkes (FHI): <i>Basics of data acquisition: analog-to-digital conversion, sampling resolution, noise, cables, bandwidth etc.</i>	H. Junkes (FHI): <i>Interfaces (serial, USB, IP network) and their characteristics</i>
14:00-15:30h	H. Appel (FHI): <i>Introduction to static and time-dependent density functional theory</i>	N. Koch (HU): <i>Introduction to organic semiconductors</i>	H. Junkes (FHI): <i>Exercise: Setting up a Raspberry Pi with XXX-board as a Linux-based acquisition system</i>	H. Junkes (FHI): <i>Exercise: Connecting standard devices (e.g. oscilloscope, signal generator) to Raspberry Pi</i>
16:00-17:30h	T. Risse (FU): <i>Thermodynamics and kinetics of surface processes</i>	N. Koch (HU): <i>Organic (opto-)electronic devices and their interfaces</i>	H. Junkes (FHI): <i>Exercise (continued): Setting up a Raspberry Pi</i> http://www.raspberrypi.org	H. Junkes (FHI): <i>Exercise (continued): Use of IP-terminal adapter, demonstration of DAQ, FFT, aliasing etc.</i>



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