

**Berliner Elektronenspeicherring-Gesellschaft
für Synchrotronstrahlung m.b.H.**



Workshop on High Energy Photoemission

Wednesday, Dec. 3rd 2008 at BESSY

organized by:

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Tunable hard x-ray - high kinetic energy photoemission electron spectroscopy (HAXPES, HIKE, THE-XPS, or VOLPE for volume sensitive photoemission) with excitation energies ranging from about 2 keV to 15 keV has been established in the last years as a new technique with broad possibilities to study complex materials and buried-layer nanostructures. Using higher excitation energies permits more clearly to probe bulk composition, atomic structure and electronic structure, as well as penetrating more deeply into multilayer nanostructures, due to the increased electron inelastic attenuation lengths. A wide range of topics from basic research on strongly correlated materials to multilayer structures as well as applied physics relevant to integrated circuits, photovoltaic cells, or fuel cells is covered by this technique.

Within the last years, beamlines and end-stations for carrying out such studies were established at the synchrotron facilities in France (ESRF), Germany (BESSY, HASYLAB), and Japan (Spring-8). Several new ones are under construction or planned at other facilities of these countries (PETRA III in Germany, SOLEIL in France), as well as in Canada (CLS), Great Britain (DIAMOND), Sweden (MAX-IV), and USA (NSLS-2).

This workshop will present an overview of the present status of HAXPES activities in Europe with special focus on the BESSY HIKE project and consider the various possible future directions for this very exciting method.

Program

Lecture Hall, ground floor

- 8:30 **W. Eberhardt** (BESSY)
Welcome
- 8:45 **G. H. Fecher** (MATCOR Mainz)
High energy valence band spectroscopy towards spin resolution
- 9:15 **J. Zegenhagen** (ESRF, Grenoble)
Structure and electronic properties of bulk oxides and interfaces
- 9:45 **G. Pannacione** (ELETTRA, Trieste)
Hard X-ray Photoemission Spectroscopy on complex systems and buried interfaces: bulk sensitive results and the VOLPE project
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- 10:15 Coffee break
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- 10:30 **S. Svensson** (Uppsala University)
Fundamental and applied research using high kinetic energy photoelectron spectroscopy
- 11:00 **W. Drube** (HASYLAB)
HAXPES activities at HASYLAB
- 11:30 **M. Gorgoi** (BESSY)
The BESSY HIKE project
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- 12:00 Lunch break (BESSY lobby)
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- 12:30 **J. Minár** (TU München)
Angle-resolved X-ray photoemission within the one step model
- 12:50 **M. Sing** (Uni Würzburg)
Profiling layered hybrid structures by hard x-ray photoelectron spectroscopy
- 13:10 **S. Döring** (Uni Dortmund)
Hard X-ray Photoemission with standing wave excitation
- 13:30 **V. de Rooij-Lohmann** (FOM Rijnhuizen)
Understanding the Mo/B₄C/Si system: towards better X-ray optics
- 13:50 **I. Lauermann** (Helmholtz Zentrum, Berlin)
High energy photoemission spectroscopy as tool for the in-depth characterisation of thin film solar cells
- 14:10 End of meeting
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- Session 1 8:45 - 10:15 chair S. Svensson
Session 2 10:30 - 12:00 chair G. Pannacione
Session 3 12:30 - 14:10 chair J. Zegenhagen