

International Center of
Advanced Materials and
Electron Microscopy

**Autumn School on Materials Science
and Electron Microscopy 2004**



**"Emerging Microscopy for
Advanced Materials Development –
Imaging and Spectroscopy on Atomic Scale"**

October 3rd - October 7th, 2004

**Humboldt University of Berlin,
Institute of Physics
Chair of Crystallography**

SPONSORS

The Autumn School 2004 is financially supported by:

German Research Foundation (DFG)
Max Planck Institute of Microstructure Physics, Halle
Fritz Haber Institute of the Max Planck Society, Berlin
Paul Drude Institute, Berlin
German Society of Electron Microscopy
German Society of Crystallography

As well as by the following companies:

CARL ZEISS SMT GmbH
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The organizers express their gratitude for this financial support.

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The assistance of staff members of the Fritz Haber Institute Berlin is gratefully acknowledged.

LOCATIONS OF THE AUTUMN SCHOOL

1. Registration, Lectures, Poster Session

Lecture Hall for Chemistry and Physics (LCP building)
Newtonstrasse 14
12489 Berlin-Adlershof

2. Accommodation for financially supported participants School Party

Hotel & Gästehaus "Am Campus"
Rudower Chaussee 14
12489 Berlin-Adlershof
Phone: +49 (0)30 - 756560

The Hotel is located within a walking distance of about 5 min from station S-Adlershof. The lecture hall can be reached by foot from the Hotel & Gästehaus "Am Campus" within 5 min.

REGISTRATION DESK

Opening hours of the registration desk located at the LCP building:

Monday, October 4 th :	8.30 h – 18.00 h
Tuesday, October 5 th :	8.15 h – 15.30 h
Wednesday, October 6 th :	8.15 h – 18.00 h
Thursday, October 7 th :	8.30 h – 14.00 h

POSTER SESSION

Posters are presented as both short oral contributions as well as during two extended Poster sessions in order to provide a maximum of opportunities for intense discussion.

The posters should be mounted as soon as possible on Monday. Mind your poster number as indicated on the poster list enclosed in your conference materials. Please, affix your poster at the poster board having the according number.

Every poster is orally presented on Wednesday afternoon. The time provided for individual presentation is 3 minutes. For projection a laptop with powerpoint (office2000) or alternatively a visualizer for paper printouts supplied.

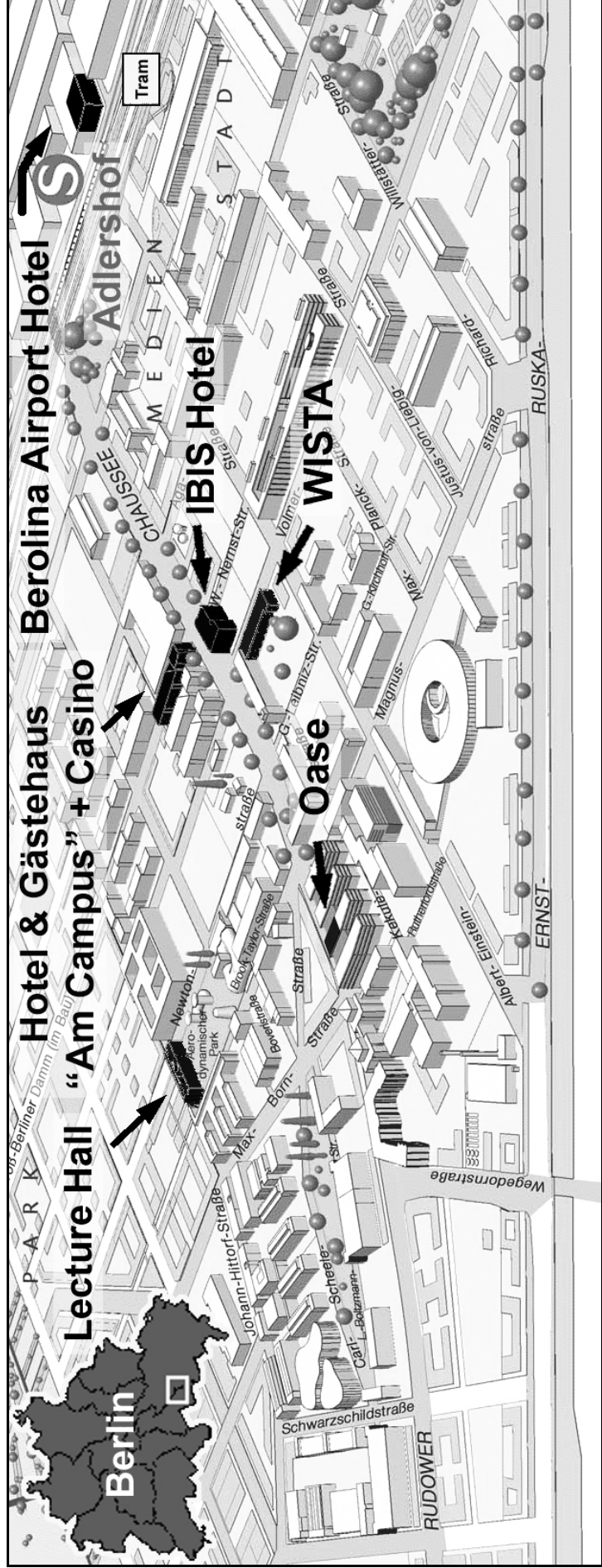
All authors with an even poster number should be present at their posters in session I (Wednesday, October 6th, 16.00 h – 17.00 h). The posters with an odd number have to be presented in session II (Wednesday, October 6th, 17.00 h – 18.00 h).



AUTUMN SCHOOL ON MATERIALS SCIENCE AND ELECTRON MICROSCOPY

"Emerging Microscopy for Advanced Materials Development –
Imaging and Spectroscopy on Atomic Scale"

Venue of the Autumn School 2004 at Berlin-Adlershof





SCIENTIFIC PROGRAM

Monday, October 4th, LCP building

- 10.00 – 10.15 W. Neumann, Berlin
Introduction
- 10.15 – 11.00 J. Hutchison (Oxford)
Where is electron microscopy going? – developments in instrumentation and techniques for HREM
- 11.15 – 12.00 M. Lentzen (Jülich)
Aberration-corrected transmission electron microscopy and its use in materials science
- 12.15 – 13.30 Lunch
- 13.30 – 14.15 R. Otto (Berlin)
Extraction of quantitative information from high resolution TEM micrographs
- 14.30 – 15.15 H. Lichte (Dresden)
Electron holography: basics and application
- 15.30 – 16.00 Coffee break
- 16.00 – 16.45 M. Lehmann (Dresden)
Electron holography: live evaluation of electron holograms with atomic resolution
- 17.00 – 17.45 G. Faigel (Budapest)
Atomic resolution X-ray holography
- 19.00 School party at Hotel & Gästehaus “Am Campus”**

Tuesday, October 5th, LCP building

- 8.30 – 9.15 F. Hofer (Graz)
Introduction to analytical transmission electron microscopy
- 9.30 – 10.15 W. Grogger (Graz)
EFTEM and EELS at the frontiers of spatial and energy resolution
- 10.30 – 11.00 Coffee break
- 11.00 – 11.45 M. Stöger-Pollach (Wien)
Fundamentals of EELS and its applications
- 12.00 – 13.00 Lunch

- 13.00 – 13.30 P. Schlossmacher (CARL ZEISS SMT): *The new LIBRA 200FE*
- 13.30 – 14.00 S. Kujawa (FEI Company): *Lateral resolution in TEM below 0.1 nm*
- 14.00 – 14.30 M. Rodewald (JEOL Germany): *New developments in TEM from JEOL*
- 14.30 – 15.00 M. Felsmann (GATAN): *Recent developments of Gatan products*
- 15.00 – 15.30 Coffee break
- 15.30 – 17.00 Visit to labs of the Chair of Crystallography

Wednesday, October 6th, LCP building

- 8.30 – 9.15 M. Ceh (Ljubljana)
Atomic resolution HAADF-STEM: from experimental imaging to quantitative interpretation
- 9.30 – 10.15 J. Labar (Budapest)
Two aspects, why EDS appears between the methods of "imaging and spectroscopy on atomic scale"
- 10.30 – 11.00 Coffee break
- 11.00 – 11.45 L. Frank (Brno)
Spectromicroscopy with Auger electrons
- 12.00 – 12.45 I. Mullerova (Brno)
Scanning low energy microscope and its applications
- 13.00 – 14.00 Lunch
- 14.00 – 16.00 Short oral presentations of posters
- 16.00 – 17.00 Posters and beer, Session I
- 17.00 – 18.00 Posters and beer, Session II

Thursday, October 7th, LCP building

- 9.00 – 9.45 H. Takahashi (Sapporo)
In-situ high-resolution ion implantation
- 10.00 – 10.45 T. Hesjedal (Berlin)
Nanoscale imaging of surface acoustic waves
- 11.00 – 11.30 Coffee break
- 11.30 – 12.15 S. Fölsch (Berlin)
Assembly and spectroscopy of atomic-scale structures by low-temperature scanning tunnelling microscopy
- 12.30 – 13.15 S.A. Teys and B.Z. Olshanetski (Novosibirsk)
Scanning tunneling microscopy studies of self-organizing nanostructures on silicon surfaces
- 13.30 Closing remarks