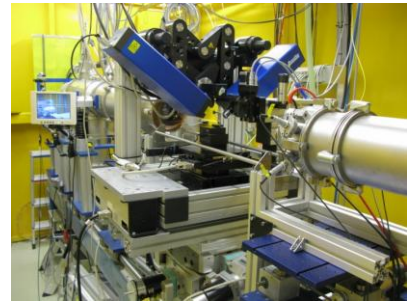


NANOPTICUM

Combining imaging ellipsometry and other techniques like reflection spectroscopy and grazing incidence small angle X-ray scattering

- Halcyonics application example: active vibration isolation system in electrophysiology
- New products: a new laminar flow cabinet - an appropriate environment for the nanofilm_ep3
- Ellipsometric and reflection spectroscopic study of a phospholipid monolayer at the air–water interface in the presence of large organic counterions
- Combination of microbeam grazing incidence small angle X-ray scattering (μ GISAXS) and imaging ellipsometry



nanofilm_ep3 integrated in the beamline BW4, HASYLAB Hamburg
[photo: working group Müller-Buschbaum, TU München]

Dear Sir or Madame,

This month, we will focus on applications of imaging ellipsometry in combination with other techniques. For example, we report applications for the integration of an atomic force microscope into an imaging ellipsometer. In the current issue, we will focus on results from combining reflection spectroscopy and imaging ellipsometry, a forthcoming integration package for our imaging ellipsometers and on the integration of a nanofilm_ep3 into the beamline BW4 at HASYLAB, DESY, Hamburg.

We also would like to introduce our new nanofilm_microlab - together with the halcyonics_variobasic an optimal environment for the nanofilm_ep3.

In the next month, we will participate in different workshops and conferences – and perhaps have an opportunity to meet you face to face.

Best regards

Yours,

Accurion team

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February 2010

DPG Frühjahrstagung, Regensburg, Germany,
March 21st – 26th
<http://regensburg10.dpg-tagungen.de/index.html>

Bunsentagung, Bielefeld University, Germany,
May 13th – 15th.
http://www.bunsen.de/en/Events/Bunsentagung_n/Bunsentagung_2010.html

ICSE-V, Albany, NY USA, 23-28 May 23th -28th
<http://www.icse-v.org/web/>

1st INHOUSE CONFERENCE
“New application of imaging ellipsometry and Brewster angle microscopy”

Göttingen, Germany, 9th and 10th June 2010

NEW PRODUCTS: CLEAN-ROOM CABINET - AN OPTIMAL ENVIRONMENT FOR THE NANOFILM_EP3

Imaging ellipsometry is a very sensitive to changes in layer thickness. From that point of view a clean-room atmosphere is recommended but not always available or practical. To overcome these issues, we offer a tailored clean room cabinet.

- Dimensions (width 1300 x depth 1000 x height 2500 mm)
- Filter: filter-fan-unit (1200 x 900 mm), HEPA H14 filter with pre filter
- Variable air-flow via electronics

ELLIPSOMETRIC AND REFLECTION SPECTROSCOPIC STUDY OF A PHOSPHOLIPID MONOLAYER AT THE AIR-WATER INTERFACE IN PRESENCE OF LARGE ORGANIC COUNTERIONS

Pérez-Morales et al. Used imaging ellipsometry at the air-water interface to determined the optical parameters of a mixed monolayer containing an anionic phospholipid matrix (DMPA), and a cationic porphyrin (Ni-TMPyP, Ni(II)-tetrakis(4-methylpyridyl) porphyrin) as large counter ion. The nulling ellipsometric measurements were done on two phases observed directly by Brewster angle microscopy, over specific regions with a size of few microns. Therefore, values of the ellipsometric angles for the different regions at the interface (domains and surrounding areas) have been obtained. The difference in reflectivity of the monolayer-covered water surface and the bare water surface under normal incidence was determined with a reflection spectroscopy at normal incidence.

M. Pérez-Morales, JM. Pedros, E. Munoz, M.T. Martin-Romero, D. Möbius, L. Camacho (2005) Ellipsometric study of a phospholipid monolayer at the air-water interface in presence of large organic counter ions. *Thin Solid Films* **488**: 247 – 253

COMBINATION OF MICROBEAM GRAZING INCIDENCE SMALL ANGLE X-RAY SCATTERING (MGISAXS) AND IMAGING ELLIPSOMETRY

Körstgens et al. (2010) report the integration of imaging ellipsometry into microbeam grazing incidence small angle X-ray scattering (μ GISAXS) setup at the beamline and is introduced as a new versatile tool for the characterization of nanostructures. μ GISAXS provides a local lateral and depth-sensitive structural characterization, and imaging ellipsometry adds the position-sensitive determination of the three-dimensional morphology in terms of thickness, roughness, refractive index, and extinction coefficient. Together μ GISAXS and imaging ellipsometry enable a complete characterization of structure and morphology.

V. Körstgens J. Wiedersich, R. Meier, J. Perlich, S. V. Roth, R. Gehrke, P. Müller-Buschbaum (2010) Combining imaging ellipsometry and grazing incidence small angle X-ray scattering for in situ characterization of polymer nanostructures. *Anal Bioanal Chem.* **396**: 139-149

HALCYONICS APPLICATION EXAMPLE: ACTIVE VIBRATION ISOLATION SYSTEM IN ELECTROPHYSIOLOGY

Accurion's Workstation_Vario_900 is an active vibration-isolated laboratory table. In this example it isolates a patch clamp setup at the Department for Molecular Neurology of the Max Planck Institute for Experimental Medicine in Goettingen, Germany.



nanofilm clean room cabinet

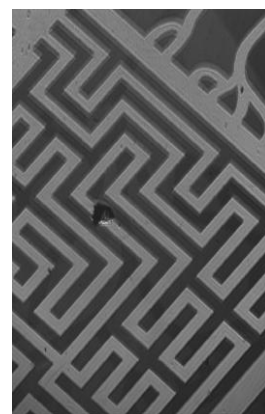


Image of the month: Titanium structure on a Platinum substrate.



Patch clamp setup on an Accurion's Workstation_Vario_900