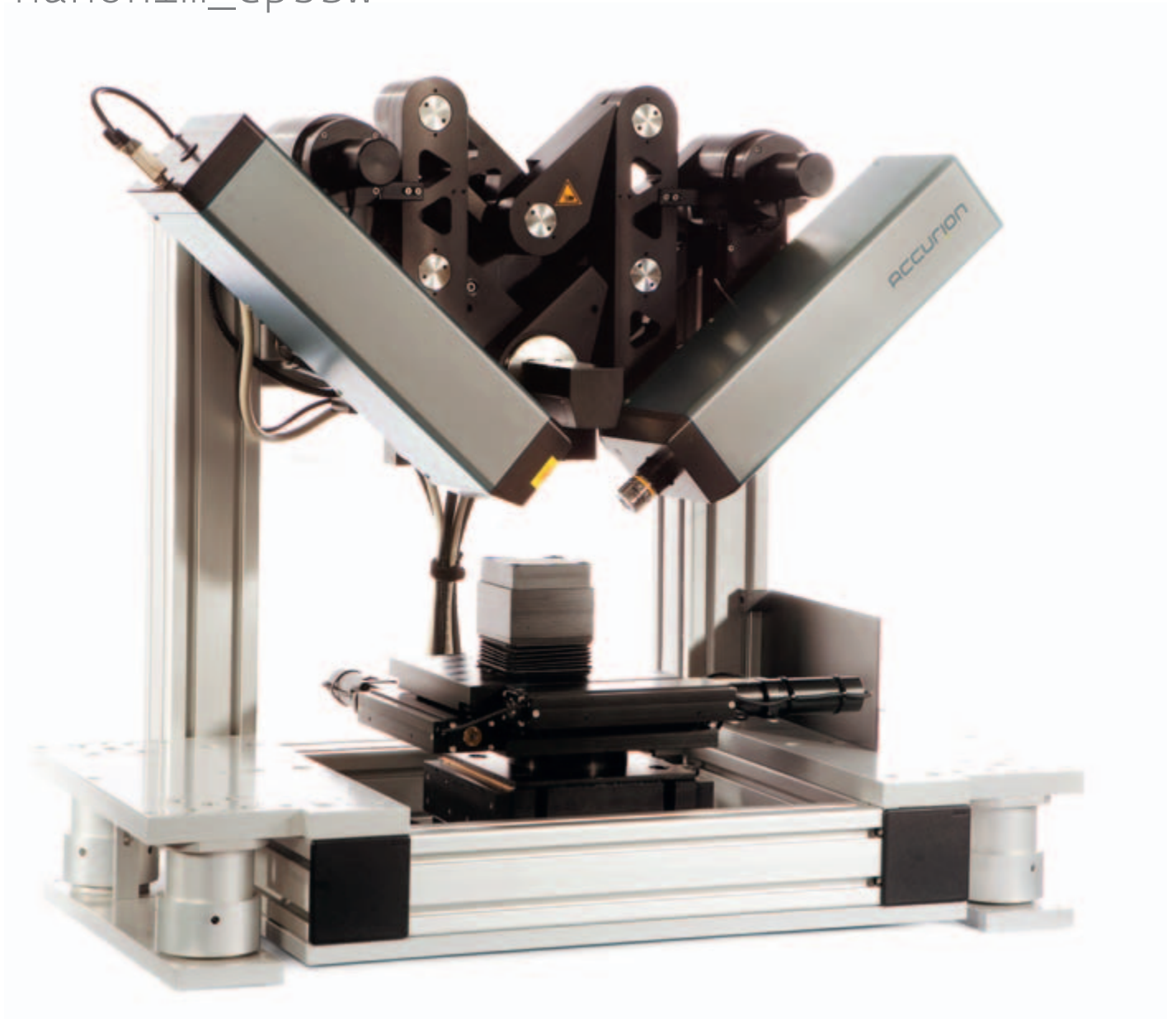


# ACCURION

solutions for science

`_imaging` ellipsometry  
nanofilm\_ep3sw

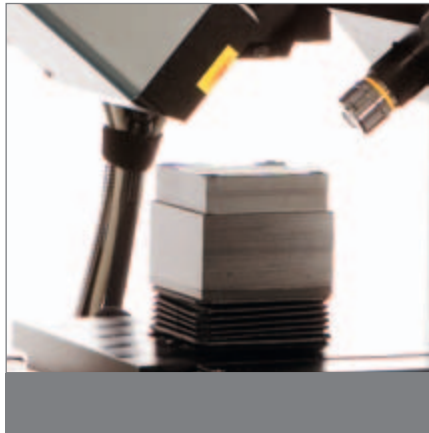


# Single Wavelength Imaging Ellipsometer

## nanofilm\_ep3sw

### ABSTRACT

Classical Ellipsometry has been in use as a powerful characterization technique for thin films for over 100 years. With Imaging Ellipsometry the size of the object under investigation may be reduced to the micrometer range and by this accomplishing the need to measure on micro-structured samples. For example, reactive coatings on cantilever-based microsensors may be characterized by Imaging Ellipsometry, being inaccessible to the large spot size of conventional ellipsometers.



Simultaneously, it is possible to generate maps of ellipsometric data with spatial resolution down to a micrometer, while preserving the sub-nm film thickness resolution of a classical ellipsometer. With our nanofilm\_ep3sw we enable you to image and characterize ultra thin layers, like supported membranes, self assembling monolayers and LB-films. Even on liquid surfaces or inorganic layers such as silicon dioxide on silicon.

### APPLICATIONS

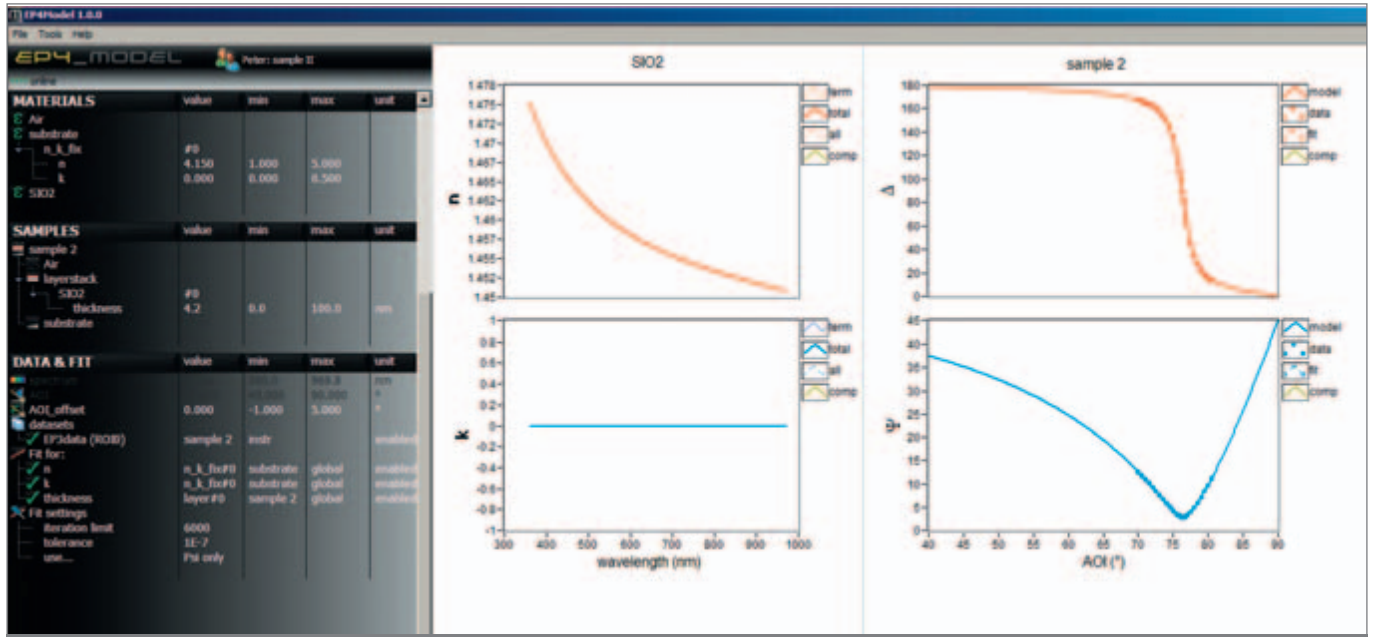
- Microscale sample: Thin Films: thiol on gold, SiO<sub>2</sub> on Al flakes
- Structured Films: micropatterned supported phospholipid membranes and Polymers Lateral phase separation in a mixed bilayer (Phospholipid/glycolipid);
- Transparent Substrates: LB-film on water, protein spots on glass
- Microarrays: QC of Biochips, biomolecular interactions; adsorption kinetics; multi channel measurements
- ... and many more

### BENEFITS

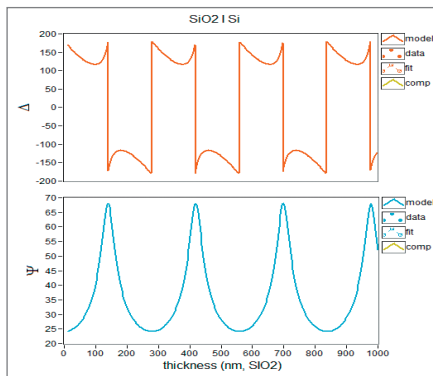
- Three in one - imaging ellipsometry, Brewster angle, and imaging SPR - all with one instrument!
- Real time ellipsometric contrast imaging for direct visualization of your sample - see what you are doing as you do it
- Highest lateral resolution in the field of ellipsometry enabling the investigation surfaces for structures down to 1 micron in lateral resolution
- Interactive and easy to use optical modeling
- Imaging of thin layers on liquid surfaces
- Making ellipsometry available for small samples and structured or inhomogenous surfaces

### FEATURES

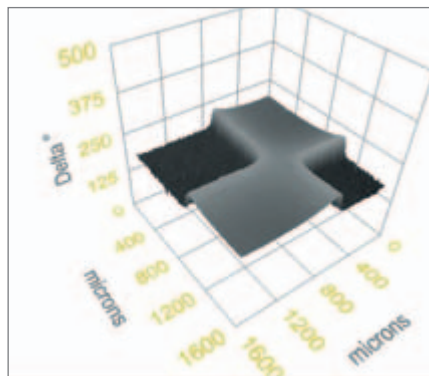
- Nulling Ellipsometer in PCSA-configuration
- Solid state laser (532 nm, 20 mW) - other lasers on request
- 768 x 572 pixel CCD camera
- 10 x objective
- Patented motorised goniometer
- Manual sample handling stage
- ep-View software, new ep4-Model software



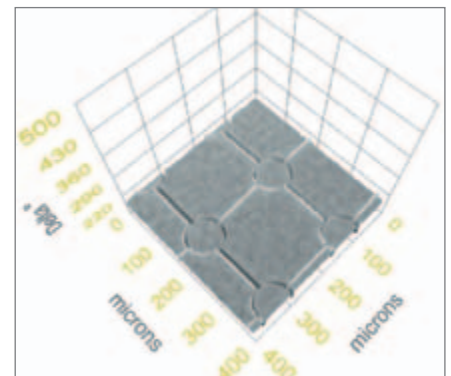
Powerful optical modeling software



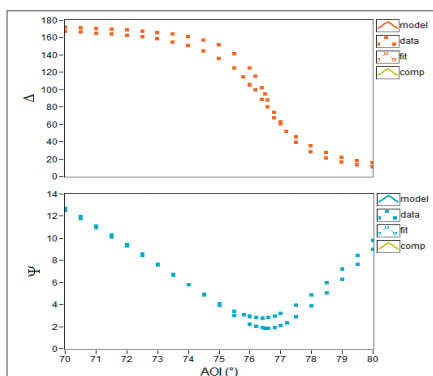
Simulation of Delta and Psi for the layer system Air|SiO<sub>2</sub>|Si



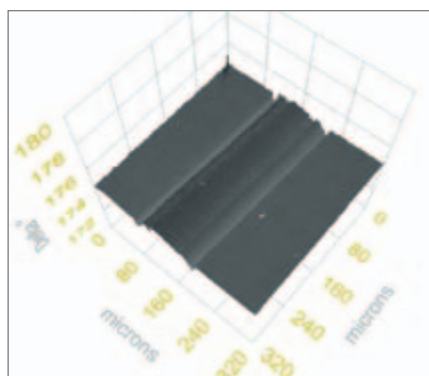
Delta map



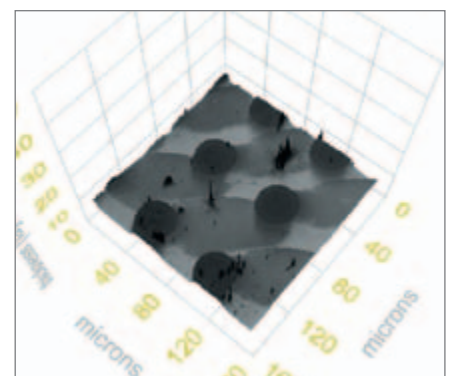
UV-patterned polymer adsorption layer on silicon substrate



Angle-of-Incidence spectrum



High resolution Delta map



Protein array after spotting and washing

### UPGRADE POSSIBILITIES

- nanofilm\_ep3se: Upgrade to a spectroscopic Imaging Ellipsometer
- Upgrade to an Imaging SPR Analyzer
- Combination of Imaging Ellipsometry and AFM

### RECOMMENDED ACCESSORIES

- Automatic Sample Handling Stage
- Laser Safety cabinet
- Solid | liquid and SPR cells
- Temperature Control
- Liquid Handling

- 2x, 5x, 20x, 50x objective
- Beam cutter
- Beam expander
- ep3-View Software Add Ons
- LB-Trough, Z-Lift
- Active Vibration Isolation

