



KONWERSATORIUM INSTYTUTU FIZYKI UMCS

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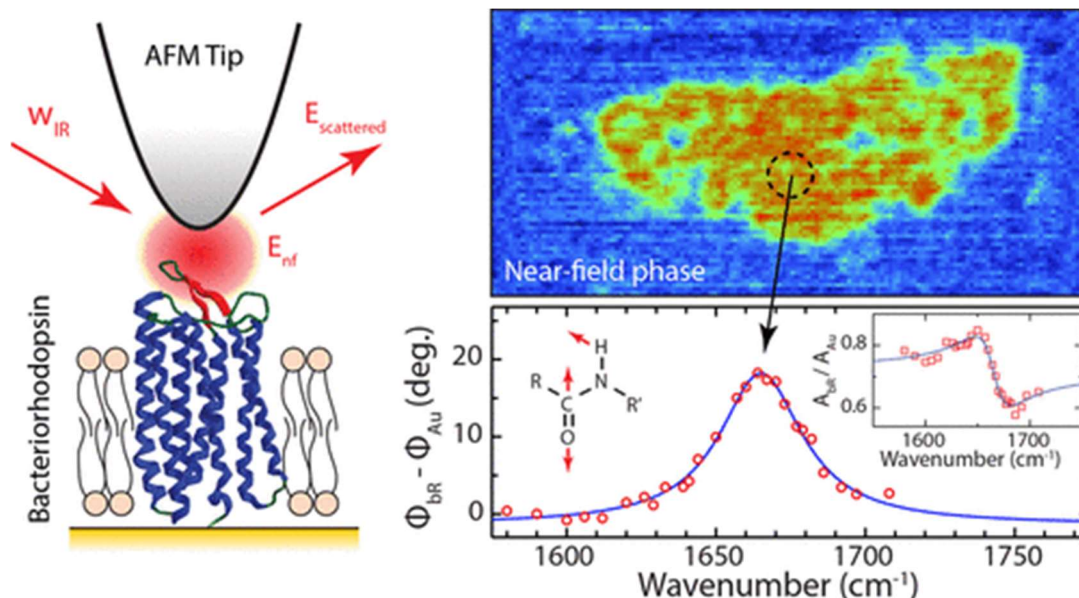
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Nano-IR optical and (bio)chemical characterization of nanomaterials

Scattering-type Scanning Near-field Optical Microscopy (s-SNOM) is a scanning probe approach to optical microscopy and spectroscopy bypassing the ubiquitous diffraction limit of light to achieve a spatial resolution below 10 nanometer. s-SNOM employs the strong confinement of light at the apex of a sharp metallic AFM tip to create a nanoscale optical hot-spot. Analyzing the scattered light from the tip enables the extraction of the optical properties (nano-IR absorption, reflectivity) of the sample directly below the tip and yields nanoscale images simultaneous to mechanical properties.

Equipping s-SNOM systems with IR tunable light sources, nanoscale chemical mapping can be performed at time scales of 30-300s per image. Use of material-selective frequencies in the mid-IR spectral range can be exploited to fully characterize any material with nanometer-scale domains. A broad range of applications of the s-SNOM technology for biological materials, inorganics and 2D materials research, will be presented.



Nano-Chemical Infrared Imaging of Membrane Proteins in Lipid Bilayers

Uprzejmie zapraszam wszystkich pracowników, doktorantów i studentów Instytutu Fizyki.

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