



Contribution ID: 80

Type: not specified

Plasmonic imaging of single nanoparticles: project NANODETECTOR

Wednesday, March 11, 2015 11:20 AM (20 minutes)

A new technology developed within FP7 project "NANODETECTOR" provides a real-time detection of interaction of single nanoparticles with plasmonic surface. A number of the nanoparticle – surface binding events per time unit characterizes volume concentration of nanoparticles. A large value of the resonant surface allows us to detect many hundreds interactions in each frame, this leads to a very high dynamic range of nanoparticles counting and correspondingly to a high dynamic range in the concentration scale. The technology can be applied in liquid or in gaseous phases. Depending on the type of nanoparticles and experimental conditions, the detection limit for aqueous samples can be from 10 till 1000 nanoparticles per microliter. Characteristic SPR images of nanoparticles allows us to study heterogeneity of nanoparticles and can be probably used as a finger prints for identification of different types of nanomaterials. Chemical modification of the plasmonic surface as well as changes of pH or ionic strength influence on the interaction of nanoparticles with surface and can be used as additional parameters to evaluate this interaction and to distinguish between different types of nanoparticles.

Presenter: MIRSKY, Vladimir (Brandenburg University of Technology Cottbus-Senftenberg)

Session Classification: 5B Tracking NM in complex matrices

Track Classification: Parallel session 5B: Tracking NM in complex matrices