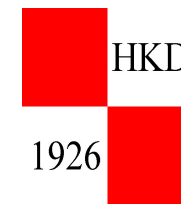




**Institut Ruđer Bošković**

**CVI. Kolokvij Zavoda za organsku kemiju i biokemiju, Zavoda za istraživanje mora i okoliša i Sekcije za organsku kemiju Hrvatskog kemijskog društva**



**Dr. Ljiljana Fruk**

DFG-Centre for Functional Nanostructures,  
Karlsruhe Institute of Technology,  
Karlsruhe, Germany

ponedjeljak, 23. 09. 2013.  
predavaonica III. krila IRB

15:00-16:00 sati

## **Biofunctionalized Nanotools for Sensing and Optoelectronic Devices**

Recent developments in nanotechnology, in particular, in preparation of different classes of nanoparticles, have enabled design of novel devices with wider technological applications in medicine, biology and renewable energy research. However, clear translation from basic research to an application is still missing and huge research efforts are put into preparation of nanotools that could enable advances in biosensor and new material design. Nano bio hybrids make use of chemically modified nanostructures and biologically available molecules such as DNA and proteins to address problems such as early diagnostics, drug design and drug delivery. On the other hand, they have also started to play an important role in material science, in particular in the field of plasmonics.

Several aspects of nano bio hybrid design will be addressed – in particular, chemical synthesis of suitable linker systems, which provide interface between two worlds and preparation and characterisation of the end product. Chemical synthesis of multifunctional linkers as well as biomolecule and nanoparticle modification will be presented with focus on design of biosensors and optoelectronic devices.

Finally an overview of expected near future developments will be given with particular emphasis on challenges and possible solutions the field of nanobiotechnology is faced with.