

SUMMER INTERNSHIPS 2016

TITLE: Plasmonic sensor for biological nanoparticles

DESCRIPTION (Objectives, tasks, materials, equipment...):

The activities of the group cover research at the interface between fundamental nanoscience and applied engineering, in particular in the area of biomedical microsystems. The projects are of highly interdisciplinary nature in close collaboration with clinical partners and industry. The group is primarily focusing on novel detection methods for diagnosing widespread diseases in a very early stage, even before typical symptoms occur. These diseases comprise for example cancer, infectious diseases, cardiovascular diseases, Alzheimer's disease or in general neurodegenerative diseases.

The methods to be developed and employed are primarily optical and photonics principles, in combination with methods from biochemistry and technical engineering in different fields. Based on the knowledge and aspiration of the candidates, the topic of the internship can be adapted to fulfill the needs on either side.

The group is particularly looking for students to work in the development of plasmonic sensors for the detection of biomolecules and biological nanoparticles. The students are involved in the fabrication of plasmonic sensor systems under cleanroom conditions and will learn characterization techniques for nanomaterials.

SUPERVISOR: Andreas Seifert

SUITABLE FOR: physicists, chemists, engineers, or students from material science.