

Research Grants for PhD students from the China Scholarship Council

Information Form (please read the guidelines carefully on the website www-csc.utt.fr)

Supervisor's name : Ionescu Given names : Elena Ionescu

Status (prof., assistant prof., ...) : Associate professor

Laboratory : Light, Nanomaterials and Nanotechnology-L2n Website address :

Institution : University of technology of Troyes Website address :
www.utt.fr

Scientific competence of the supervisor:

Biosensors, enzymatic nanolithography for lab-on-chip investigations, water pollutants toxicity to living cells and microorganisms

Two major publications in the field proposed for the PhD :

1. Kun Jia et al., Strong improvements of localized surface plasmon resonance sensitivity by using Au/Ag bimetallic nanostructures modified with polydopamine films, (2014) ACS Appl. Mater. Interfaces 6(1):219–227,
2. Rodica. E. Ionescu, Biosensor Platforms for Rapid Detection of E. coli Bacteria, In InTech book: Escherichia coli Recent Advances on Physiology, Pathogenesis and Biotechnological Applications, (2017)

Website address of the personal page :

Supervisor's email : elena_rodica.ionescu@utt.fr

Description of the research work proposed for a PhD **Topic # (see list) :** IV-1

Title : Nanostructured biochips for medical diagnostics

Subject :

Novel and inexpensive nanostructured surfaces have been recently developed at LNIO, based on high annealing temperatures of a thin metallic film deposited on glass. Such surfaces are excellent candidates for biochips applications due to their stability in aqueous solutions. The aim of the PhD thesis is to investigate the potential toxicity of (bi)metallic nanostructured structures for living microorganisms for further use in (bio)functionalization of biochips for specific detection of target molecules. Surface characterization techniques such as Scanning Electron Microscopy (SEM) and Atomic Force Microscopy (AFM) will be used.

Keywords :

Biosensors, Nanoparticles, Toxicity, Surface (bio)functionalization

Expected collaborations :

Background required from the applicant :

good knowledge on surface (bio)functionalization and characterization techniques (SEM, XPS, etc)

Existence of a PDF file detailing the proposal ("yes" or "no") : No

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