

PRESENTER INFORMATION



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BIOGRAPHICAL SKETCH

Nikola Knežević graduated with PhD in Chemistry in 2009 at Iowa State University, USA and obtained further experience as a postdoc fellow at the University of Houston, Universidad Complutense de Madrid, CNRS-Charles Gerhardt de Montpellier, and as Pole Chimie Balard Visiting professor at the University of Montpellier. His research work involves the development of stimuli (pH, light, magnetic field, biomolecule)-responsive nanomaterials (mesoporous silica, organosilica, silicon, magnetic core/shell) for biomedical and sensing applications. Nikola is a project coordinator for one H2020 project (NANOFACTS GA 952259) and two national projects. He is employed at the Biosense institute, Novi Sad, Serbia, as a Senior researcher since March 2018.

TITLE: Bioactive Nanosystems Based on Mesoporous Silica and Organosilica Nanoparticles.

ABSTRACT

Mesoporous silica and organosilica nanoparticles exhibit highly beneficial features for devising nanosystems applicable in different research fields. Our research interests revolve around application of these types on nanoparticles in cancer therapy, imaging and sensing, as well as other health-related applications, such as protection of skin from UV light and antibacterial activity. This talk will give an overview of our research advancements. Magnetic analogues of mesoporous silica and organosilica nanoparticles can be prepared to introduce magnetic field-responsive character to the materials. Therapeutic molecules can be entrapped within the mesopores of the materials and their controlled release can be achieved by exposure to different stimuli, such as light, change in pH, enzymes and other biomolecules. Plethora of design possibilities exist for surface modification of these types of nanoparticles, which enhance their application potential.