



OBAVIJEST

Javna obrana teme doktorskog rada studentice poslijediplomskog sveučilišnog studija BIOFIZIKA

LUCIJE KRCE

pod naslovom

**“Experimental investigation and modelling of bacterial growth and inactivation:
E. coli exposed to laser synthesized silver nanoparticles”**

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1. prof. dr. sc. Ante Bilušić, (Prirodoslovno-matematički fakultet, Split), predsjednik
2. izv. prof. dr. sc. Larisa Zoranić, (Prirodoslovno-matematički fakultet, Split), članica
3. izv. prof. dr. sc. Marija Raguž, (Medicinski fakultet, Split), članica

Abstract:

Antibacterial property of silver nanoparticles (AgNPs) has been a subject of numerous research papers, mostly because of their efficiency against the multidrug resistant bacterial strains. Reactive oxygen species, membrane pore creation and the release of silver ions are the predominant modes of antibacterial action of AgNPs, according to the literature.

We presume that the study of the bactericidal effect of laser synthesized AgNPs, which are free of chemical byproducts, could be of substantial importance in understanding the underlying action mechanism(s). Recognition, understanding and control of the parameters relevant for bacterial growth could lead to the comprehension of the growth and/or inhibition upon treatment with AgNPs.

This doctoral thesis will include production and characterization of laser synthesized AgNPs, experimental probing of the antibacterial modes of action and development of a growth/inactivation model for untreated and AgNPs treated *E. coli* cells.

Mentor: prof. dr. sc. Ivica Aviani (Prirodoslovno-matematički fakultet, Split)

Programme Head: mile@pmfst.hr

Administrative Leader: ibitunjac@pmfst.hr

Phone: +385 21 619 217

Address: PMFST Biofizika
R. Boškovića 33
HR-21000 Split
Croatia