

MATERIALS RESEARCH SOCIETY OF SERBIA
INSTITUTE OF TECHNICAL SCIENCES OF SASA

Programme and the Book of Abstracts

**SEVENTEENTH YOUNG RESEARCHERS' CONFERENCE
MATERIALS SCIENCE AND ENGINEERING**

Belgrade, December 5–7, 2018

Materials Research Society of Serbia

<http://www.mrs-serbia.org.rs/index.php/young-researchers-conference>

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&
Institute of Technical Sciences of SASA**

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Aim of the Conference

Main aim of the conference is to enable young researchers (post-graduate, master or doctoral student, or a PhD holder younger than 35) working in the field of materials science and engineering, to meet their colleagues and exchange experiences about their research.

Topics

Biomaterials
Environmental science
Materials for high-technology applications
Nanostructured materials
New synthesis and processing methods
Theoretical modelling of materials

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Results of the Conference

Beside printed «Program and the Book of Abstracts», which is disseminated to all conference participants, selected and awarded peer-reviewed papers will be published in journal “Tehnika – Novi Materijali”. The best presented papers, suggested by Session Chairpersons and selected by Awards Committee, will be proclaimed at the Closing Ceremony. Part of the award is free-of-charge conference fee at YUCOMAT 2019.

Sponsors



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Synthesis and characterization of bioactive glass doped with lithium and strontium ions

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Bioactive glasses have been used for over three decades in biomedical applications owing to high bioactivity, biocompatibility, as well as the possibility to stimulate regeneration of the bone.

The aim of this work was to synthesized bioactive glasses, which contain lithium and strontium, by commercial method melting-quenching, as well as determining the properties, affected by mentioned ions. Differential thermal/thermogravimetric analysis, particle size distribution, energy-dispersive X-ray spectroscopy, inductively coupled plasma optical emission spectrometry, evaluation of the antimicrobial activity, *in vitro* bioactivity and biocompatibility test and scanning electron microscopy were used for characterization.

The results showed that glass transition and crystallization temperatures are decreasing with addition of lithium and strontium ions. Furthermore, the samples showed high inhibition rate of *Escherichia coli* growth, as well as high bioactivity and biocompatibility. The crystal apatite layer, formed on the surface of synthesized glasses after seven days in simulated body fluid, differs in shape, size and interconnection of the glass particles, which depends on concentration of lithium and strontium ions.