

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

**December 6-8, 2017, Belgrade, Serbia**

**Program and the Book of Abstracts**

**Materials Research Society of Serbia  
&  
Institute of Technical Sciences of SASA**

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Program and the Book of Abstracts

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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 journals “Tehnika – Novi Materijali” and “Processing and Application of Ceramics“. 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 2018.

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2-5

### **Adsorption studies of lignin model compounds on activated charcoal particles**

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In this work we have investigated possibilities for immobilization of lignin model compounds (LMCs) as potential antimicrobial agents on activated charcoal particles aimed for applications in wound dressings. LMC adsorption kinetics was determined for different initial LMC concentrations (0.1, 0.5 and 1.1 mg ml<sup>-1</sup>) by using UV-visible spectroscopy over 24 h when the equilibrium was reached. LMC adsorption on charcoal particles was confirmed by Fourier-transform infrared spectroscopy (FTIR). Adsorption kinetics was successfully modeled by the pseudo-second order Lagergren model while the adsorption isotherm at room temperature could be described by both Freundlich and Langmuir models showing satisfactory agreements. The maximal capacity of activated charcoal particles for LMCs according to the Langmuir model was 312.5 mg g<sup>-1</sup>. However, the immobilizates did not exhibit antibacterial activity against *Pseudomonas aeruginosa* indicating the need for further studies of LMC adsorption mechanism with the specific aim to elucidate exact compounds or functional groups responsible for antimicrobial action and their conformation on activated charcoal.