

MATERIALS RESEARCH SOCIETY OF SERBIA
INSTITUTE OF TECHNICAL SCIENCES OF SASA

Programme and the Book of Abstracts

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

Belgrade, December 1-3, 2021



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**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
Materials for new generation solar cells
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 2022.

Sponsors



ANALYSIS
LABORATORY EQUIPMENT

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15.30 – 15.45 Investigation of photo(electro)catalytic efficiency of BaTi_{1-x}Sn_x, ZnO and ZnO@BaTi_{1-x}Sn_x (x = 0, 0.05, 0.10) powders

Katarina Aleksić¹, Ivan Supić², Ivana Stojković Simatović², Ana Stanković¹, Smilja Marković¹

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15.45 – 16.00 Thin film nanocomposites based on polyaniline and silver nanowires for optoelectronic applications

Jovan Lukić, Vuk V. Radmilović

Faculty of Technology and Metallurgy, University of Belgrade, Serbia

16.00 – 16.15 Surface phonons in YVO₄:Eu³⁺ nanopowders

J. Mitrić¹, N. Paunović¹, M. Mitrić³, J. Ćirković², M. Gilić¹, M. Romčević¹ and N. Romčević¹

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16.15 – 16.30 Hydrothermal synthesis of hydroxyapatite on calcium-enriched natural and synthetic zeolite as a carrier

Katarina Sokić¹, Đorđe Veljović¹, Jelena Dikić², Jovica Stojanović³, Danijela Smiljanić³, Sanja Jevtić¹

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16.30 – 16.45 Synthesis of linear and star-shaped oligoimides by high-temperature catalytic polycondensation in a benzoic acid melt according to the Bn + AB scheme

A.E. Soldatova¹, A.Ya. Tsegelskaya¹, I. G. Abramov², A. Kh. Shakhnes³, O.V. Serushkina³, A. Herberg⁴, A.A. Kuznetsov¹

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16.50 Closing Ceremony

13-4

**Thin film nanocomposites based on polyaniline and silver nanowires
for optoelectronic applications**

Jovan Lukić, Vuk V. Radmilović

Faculty of Technology and Metallurgy, University of Belgrade, Serbia

The broad application of optoelectronic devices has influenced intense R&D to follow in its wake. As one of the essential parts of these devices, transparent electrodes (TE) represent an area of growing interest, owing to the fact that it is possible to drastically improve the performance of optoelectronic devices by improving properties of TE.

In this work TE films based on the nanocomposite of silver nanowires (AgNWs) and polyaniline polymer (PANI) were processed via spin coating during which various wt% of polymer dispersions were coated on a layer of AgNWs, after which the nanocomposite was doped with orto-phosphorous acid (H_3PO_4) in order to transform the polymer from its non-conductive emeraldine base (EB) to its conductive state – emeraldine salt (ES). AgNWs/PANI nanocomposites have shown promising optoelectronic properties, such as optical transparency of 84.6% and sheet resistance of $35 \Omega/\square$, essential for adequate TE performance.

