

15TH ECerS CONFERENCE FOR YOUNG SCIENTISTS IN CERAMICS

CYSC
2023



15TH ECerS CONFERENCE
FOR YOUNG SCIENTISTS IN CERAMICS

BOOK OF ABSTRACTS

October 11-14, 2023
Faculty of Technology Novi Sad
Novi Sad, Serbia

**15th ECerS CONFERENCE for
YOUNG SCIENTISTS in CERAMICS**

**PROGRAMME
and
BOOK OF ABSTRACTS**

**October 11-14, 2023
Novi Sad, Serbia**

Programme and Book of Abstracts of The ECerS 15th Conference for Young Scientists in Ceramics (CYSC-2023) publishes abstracts from the field of ceramics, which are presented at traditional international Conference for Young Scientists in Ceramics.

Editors-in-Chief

Prof. Dr. Vladimir V. Srdić
Dr. Soňa Hříbalová

Publisher

Faculty of Technology, University of Novi Sad
Bul. cara Lazara 1, 21000 Novi Sad, Serbia

For Publisher

Prof. Dr. Biljana Pajin

Printing layout

Vladimir V. Srdić, Marija Milanović, Ivan Stijepović

Press

TRI 0 Štamparija, Arandelovac

CIP – Каталогизacija u publikaciji
Библиотека Матице српске, Нови Сад

666.3/.7(048.3)

CONFERENCE for Young Scientists in Ceramics (15 ; 2023 ; Novi Sad)

Programme and book of abstracts / 15th ECerS Conference for Young Scientists in Ceramics, October 11-14, 2023, Novi Sad ; [editor-in-chief Vladimir V. Srdić, Soňa Hříbalová]. - Novi Sad : Faculty of Technology, 2023 (Arandelovac : Tri 0). - XV, 137 str. : ilustr. ; 24 cm

Tiraž 130. - Str. III: Preface / editors. - Registar.

ISBN 978-86-6253-174-2

a) Керамика - Технологија - Апстракти
COBISS.SR-ID 126081289



The Book of Abstracts of the 15th ECerS Conference for Young Scientists in Ceramics is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/)

Preface

Dear colleagues and guests we are delighted to welcome you all to Novi Sad, Serbia and the 15th ECerS Conference for Young Scientists in Ceramics. This biannual event is once again jointly organized by the Faculty of Technology Novi Sad, University of Novi Sad and the Young Ceramists Network (YCN) of the European Ceramic Society (ECerS).

The ECerS Conference for Young Scientists in Ceramics is celebrating its 25th anniversary since it started back in 1998 as a national event and now it gathers scientists from all over the world. During all these 25 years the conference has been growing constantly and we are proud to say that it became one of the trademark events in the field of ceramics in Europe.

During the four days of the Conference we will have an opportunity to hear 104 oral presentations given by young scientists together with 12 invited talks and 5 plenary lectures of the more experienced scientists and experts from 29 countries. In addition, we will host a satellite event “Workshop on atomistic calculations in materials science”, thoughtfully designed to introduce fundamental computational methods that are accessible to beginners in this field. Thus, we continue to be the venue for the vivid exchange of ideas and knowledge intertwined with fruitful discussions about the one topic that gathers us all - ceramic materials and all its subfields. Young scientists especially have the opportunity to meet with their peers and senior colleagues to promote their work and make new connections that can benefit them throughout their carrier. We have to emphasize that the feedback from our past conferences, which we get from former participants and guests, is more than positive and gives us ever new energy to endure in our mission of bringing young people involved in ceramics closer together. This is why we are confident that you will enjoy your stay in Novi Sad and be able to broaden your knowledge since topics covered by the conference include various aspects of the ceramics including processing, characterisation and application of advanced and traditional ceramics but also cutting edge results in advance manufacturing, high entropy oxides, computer modelling and physics of the ceramic materials and structures.

Our deepest gratitude goes to our sponsors and co-organizers since we would not be able to organize this conference without them. Once again, the JECS Trust Fund of the European Ceramic Society has recognized the significance of the CYSC and became our greatest financial benefactor. Also, we are thankful to the Serbian Ministry of science and technological development which once again endorsed the conference financially. At the end, we would like to thank to all the people in the local organizing committee and colleagues from YCN who participated in the preparations of the Conference.

Editors

LIST OF SPONSORS



The European Ceramic Society



The JECS Trust Fund



*Ministry of Education and Science,
Republic of Serbia*



*Provincial Secretariat for Science and
Technological Development*

LIST OF ENDORSERS



Faculty of Technology



University of Novi Sad



Tourist organization city of Novi Sad

Organizer

- *Department of Materials Engineering, Faculty of Technology, University of Novi Sad, Novi Sad, Serbia*
- *Young Ceramists Network, The European Ceramic Society*

Scientific Committee

Subramshu S. Bhattacharya	<i>Indian Institute of Technology, Madras, India</i>
Jon Binner	<i>University of Birmingham, United Kingdom</i>
Vincenzo Buscaglia	<i>ICMATE-CNR, Genoa, Italy</i>
Francis Cambier	<i>Belgian Ceramic Research Center, Mons Belgium</i>
Dragan Damjanović	<i>Ecole Polytechnique Fédérale de Lausanne, Switzerland</i>
Igor Djerdj	<i>Josip Juraj Strossmayer University of Osijek, Croatia</i>
Erkka Frankberg	<i>Tampere University, Finland</i>
Thomas Graule	<i>EMPA, Zurich, Switzerland</i>
Nikola Kanas	<i>Institute Biosense, University of Novi Sad, Serbia</i>
Horst Hahn	<i>Forschungszentrum Karlsruhe, Germany</i>
Andraž Kocjan	<i>Jožef Stefan Institute Ljubljana, Slovenia</i>
Akos Kukovecz	<i>University of Szeged, Hungary</i>
Anne Leriche	<i>University of Valenciennes & Hainaut-Cambresis, France</i>
Marie Lasgorceix	<i>Université Polyte. Hauts-de-France, Valenciennes, France</i>
Karel Maca	<i>Brno University of Technology, Czech Republic</i>
Branko Matović	<i>Institute for Nuclear Sciences "Vinca", Serbia</i>
Marija Milanovic	<i>University of Novi Sad, Serbia</i>
Liliana Mitoseriu	<i>University "Al. I. Cuza", Romania</i>
Zbigniew Pedzich	<i>AGH, University of Science and Technol, Krakow, Poland</i>
Maria Canillas Perez	<i>Universidad Politécnica de Madrid, Spain</i>
Mitar Perusic	<i>University of East Sarajevo, Bosnia & Herzegovina</i>
Pavol Šajgalik	<i>Inst. of Inorganic Chemistry Academy of Sciences, Slovakia</i>
Laura Silvestroni	<i>CNR-ISTEC, Faenza, Italy</i>
Alexandre Simões	<i>Universidade Estadual Paulista UNESP, Brazil</i>
Vladimir V. Srdić	<i>University of Novi Sad, Serbia</i>
Biljana Stojanović	<i>University of Belgrade, Serbia</i>
Maxim M. Sychev	<i>St. Petersburg State Institute of Technology, Russia</i>
Paula Vilarinho	<i>University of Aveiro, Portugal</i>
Louis A.J.A. Winnubst	<i>University of Twente, The Netherlands</i>
Markus Winterer	<i>University of Duisburg-Essen, Germany</i>

Secretary

Ivan Stijepović *University of Novi Sad, Serbia*

Organizing Committee

YCN Committee (Soňa Hříbalová, Awais Qadir, Antonia Ressler, Nicolas Somers, Alejandro Montón Zarazaga)	<i>European Ceramic Society</i>
Jovana Paskaš	<i>University of Novi Sad, Serbia</i>
Danica Piper	<i>University of Novi Sad, Serbia</i>
Jovana Stanojev	<i>University of Novi Sad, Serbia</i>
Sonja Stojanov	<i>University of Novi Sad, Serbia</i>
Iva Toković	<i>University of Novi Sad, Serbia</i>
Elvira Toth	<i>University of Novi Sad, Serbia</i>
Mihajlo Valuh	<i>University of Novi Sad, Serbia</i>
Jelena Vukmirović	<i>University of Novi Sad, Serbia</i>

Content

PROGRAMME

Wednesday, October 11, 2023	2
Thursday, October 12, 2023	4
Friday, October 13, 2023	8
Saturday, October 14, 2023	13

PLENARY LECTURES

Tadej Rojac ORIGINS AND MECHANISTIC ASPECTS OF THE HIGH PIEZOELECTRICITY OF LEAD-BASED RELAXOR-FERROELECTRIC CERAMICS	16
Markus Winterer COMBINING REVERSE MONTE CARLO ANALYSIS OF X-RAY SCATTERING AND EXTENDED X-RAY ABSORPTION FINE STRUCTURE OF VERY SMALL NANOPARTICLES	17
Thomas Graule MYSTERIES AND PITFALLS IN CERAMICS PROCESSING	18
Erkka J. Frankberg QUEST FOR ROOM TEMPERATURE DUCTILITY IN CERAMICS	19
Ivano E. Castelli COMPUTATIONAL WORKFLOWS FOR AN ACCELERATED DESIGN OF NOVEL MATERIALS AND INTERFACES	20

INVITED LECTURES

Cristina Ojalvo PROCESSING OF SUPER-HARD CERAMICS BASED B ₄ C AND TiCN AT LOW TEMPERATURES	21
Julian Walker IONIC MOLECULAR SYSTEMS – NEXT GENERATION “CERAMICS” FOR ELECTRONIC AND THERMAL ENERGY STORAGE APPLICATIONS	21

Maria Canilles LASER INDUCED FORWARD TRASFER FOR SHAPING CERAMICS	22
Jan Hostaša TRANSPARENT CERAMIC COMPOSITES - MACRO AND MICRO, THE “HOWS” AND “WHAT FORS”	23
David Rafaja THE ROLE OF INTERFACES IN CERAMIC MATERIALS	24
Martin A. Schroer NANOSTRUCTURE FORMATION REVEALD BY X-RAY SCATTERING METHODS	25
Jovana Zvicer DEVELOPMENT AND CHARACTERIZATION OF COMPOSITES FOR BONE TISSUE ENGINEERING WITH THE AID OF BIOMIMETIC BIOREACTORS	27
Pawel Pęczkowski DEGRADATION OF HTS TAPES BY IRRADIATION WITH NOBLE GAS IONS AND AGING	28
Henrik Haspel DECARBONIZING THE CHEMICAL INDUSTRY – CERAMICS IN THE AMMONIA ECONOMY	29
Mtabazi G. Sahini THERMO-CHEMICAL STABILIZ ASPECTS OF MIXED IONIC-ELECTRONIC CONDUCTING (MIEC) CERAMIC MEMBRANE MATERIALS	31

DFT - WORKSHOP

Programme of the Workshop on atomistic calculations in materials science	34
---	-----------

ORAL PRESENTATIONS

Vlad-Alexandru Lukacs COMPARATIVE ANALYSIS OF BaTiO ₃ NANO CERAMICS DERIVED FROM CUBOIDAL AND EQUIAXED NANOPARTICLES	36
Marcell Bohus INVESTIGATION OF CNT/OXIDE COMPOSITES IN THE APPLICATION OF NANOFLUIDS	37
Eliška Virágová DEVELOPMENT OF CERAMIC SUSPENSIONS FOR LITHOGRAPHY BASED CERAMICS MANUFACTURING (LCM)	38

Emilija Nidžović HIGH-ENTROPY SPINEL OXIDES: FUNDAMENTALS, SYNTHESIS AND CHARACTERIZATION	39
Nida Khan DEVELOPMENT OF POROUS HYPER-STOICHIOMETRIC LITHIUM TITANATE (Li ₂ TiO ₃) FOR TRITIUM BREEDER APPLICATION	40
Gamze Yüksel CRITICAL PARAMETERS FOR GROWTH OF ORIENTED ZnO NANOWIRE ARRAYS DURING HYDROTHERMAL SYNTHESIS	41
Aleksandra Milojkovic TUNING THE PROPERTIES OF THE MAGNETOSTRICTIVE COBALT FERRITE – A PROMISING CANDIDATE FOR WIRELESS NEURAL STIMULATION APPLICATION	42
Pavčina Šárky OPTIMIZATION AND BIOACTIVITY EVALUATION OF SILICA-DOPED HYDROXYAPATITE SCAFFOLDS FOR BONE TISSUE ENGINEERING – A DIRECT FOAMING APPROACH	43
Álvaro Sándež COMBINING FREEZE CASTING WITH PRESSURE-LESS SPARK PLASMA SINTERING FOR THE MANUFACTURING OF BULK ULTRA-HIGH TEMPERATURE CERAMICS	44
Radosław Zurowski CERAMIC MICROBEADS FABRICATED VIA UV CURING ASSISTED DROP- CASTING METHOD	45
Alisa Tatarinova FEATURES OF SINTERING NANOPOWDERS OF METASTABLE ALUMINUM OXIDE DOPED WITH STABILIZED ZIRCONIUM DIOXIDE	46
Anna Maria Wieclaw-Midor PHOTOCURABLE, AQUEOUS CERAMIC DISPERSIONS FOR 3D PRINTING TECHNIQUES	47
Joanna Tanska DLP PRINTING METHOD IN OBTAINING OF CERAMIC-METAL COMPOSITES	48
Oksana Baranovska FEATURES OF THE PHASE AND STRUCTURE FORMATION OF POWDER COMPOSITES OF THE Al-Ti-C SYSTEM REINFORCED WITH FINELY DISPERSED Al ₂ O ₃ OBTAINED BY THE METHOD OF THERMAL SYNTHESIS ..	49
Heloise Orihuel SOLUTION-BASED DEPOSITION OF CERAMICS ON GLASS SUBSTRATES FOR ALKALI-METAL VAPOR CELLS	50
Lukasz Rakoczy MICROSTRUCTURE AND SELECTED PROPERTIES OF THE METAL-CERAMIC NANOCOMPOSITES FOR THE AEROSPACE APPLICATIONS	52

Alexander V. Maletskyi FEATURES OF STRUCTURE FORMATION OF ZTA CERAMICS DOPED WITH ZIRCONIA	53
Derya Arslan EFFECT OF METAL-ORGANIC FRAMEWORK (MOF) INCORPORATION ON THE PROPERTIES OF α/β -SiAlON MATRIX CERAMIC COMPOSITES	54
Zofia Kucia SYNTHESIS AND STRUCTURAL ANALYSIS OF POLYSILAZANE-DERIVED SiCN WITH TUNEABLE CARBON CONTENT	55
Anastasia Kucheryavaya TAILORING THE PROPERTIES OF ZIRCONIUM OXYCARBIDES AND OXYCARBONITRIDES BY ADJUSTING THEIR CHEMICAL COMPOSITIONS ..	56
Dawid Kozi�n UHTCs COMPOSITES BASED ON THE BORON CARBIDE WITH INTERMETALLIC ADDITIVES FROM Ti-Si SYSTEM	57
James Alexander PRODUCTION OF FUNCTIONALLY GRADIENT CERAMIC-METAL INTERPENETRATING COMPOSITES VIA PRESURELESS INFILTRATION FOR BALLISTIC APPLICATIONS	58
Lucie Kotrbova PREDICTIONS OF THE GRAIN SIZE DEPENDENCE OF THERMAL CONDUCTIVITY FOR $\text{La}_2\text{Zr}_2\text{O}_7$ AND OTHER PYROCHLORE CERAMICS	59
Nyemaga Malima COMPOSITION TUNABLE $\text{Ni}_{1-x}\text{Mg}_x\text{Fe}_2\text{O}_4$ ($0 \leq x \leq 1$) CERAMIC NANOCATALYSTS FOR ENHANCED HYDROGEN EVOLUTION AND OXYGEN EVOLUTION REACTIONS	60
Jakub Aleksandrowicz OPTIMIZATION OF PHENYL LADDED-LIKE SYSTEMS BY SOL-GEL SYNTHESIS	61
Milena Doj�inovi� MAGNESIUM SUBSTITUTION WITH NICKEL AND ITS INFLUENCE ON THE SENSING PROPERTIES OF MgFe_2O_4	62
Jan Słomiński SYNTHESIS OF TERNARY BORIDE Cr_3AlB_4 BY SOLID-STATE REACTION	63
Hamza Boussebha AlON POWDER VIA DYNAMIC CHEMICAL METHOD	64
Tijana B. Vlaškovi� PREPARATION, SYNTHESIS AND CHARACTERIZATION OF NANOMETRIC $\text{Ca}_{0.9}\text{Er}_{0.1}\text{MnO}_3$	65
Elvira Toth SYNTHESIS AND CHARACTERIZATION OF VANADIUM CARBIDE FOR SERS SENSORS	66

Shaista Ilyas DRUG CONJUGATES FOR TUMOR-SPECIFIC LOCALIZATION AND SUPERIOR THERAPEUTIC ACTION	67
Sergio Moreno-Martínez FABRICATION OF BIOINSPIRED STRUCTURES FOR DENTAL APPLICATIONS BY INDIRECT DLP	68
Muthusundar Kumar COLD SINTERING PROCESS FOR DEVELOPING HYDROXYAPATITE CERAMIC AND POLYMER COMPOSITE	69
Miljana Mirković SYNTHESIS AND CHARACTERIZATION OF CELLULOSE-HYDROXYAPATITE COMPOSITE MATERIAL WITH PROPER ANTIMICROBIAL PROPERTIES	70
Łukasz Wilk COMPOSITE Ni/SiO ₂ SCAFFOLDS OBTAINED BY DIW 3D PRINTING	71
Jixi Chen POST-LITHIATION: A WAY TO CONTROL THE IONIC CONDUCTIVITY OF SOLID-STATE THIN FILM ELECTROLYTE	72
Azim Uddin THERMALLY STABLE SILICONE ELASTOMER COMPOSITES BASED ON MoS ₂ @BIOMASS-DERIVED CARBON WITH HIGH DIELECTRIC CONSTANT AND ULTRALOW LOSS FOR FLEXIBLE MICROWAVE ELECTRONICS	73
Ekatarin A. Didenko ELECTRICAL PROPERTIES OF NANOSTRUCTURED SYSTEMS FeSe-CuInSe ₂ AND MnSe-CuInSe ₂ UNDER CONDITIONS OF VARYING MOISTURE AND LIGHTING	74
Buse Muslu Kop DESIGN OF BaTiO ₃ WITH THE SHAPES OF EQUIAXED, PLATELET AND NANOWIRE BASED FLEXIBLE NANO GENERATORS	75
Barbara Repič SCREEN PRINTED GRAPHITE-GLASS COMPOSITE ELECTRODES FOR DETECTION OF NEONICOTINOID PESTICIDES	76
Monika Łazor IMPACT OF THE STEEL PRE-OXIDATION ON THE QUALITY OF MC11- AND CMF-BASED PROTECTIVE LAYERS FOR SOC INTERCONNECTS	77
Rui Pinto EXPLORING PrVO _y -CaVO _y OXIDES: CHARACTERIZATION AND PERFORMANCE IN SOLID OXIDE FUEL CELLS	78
Abdelmajid Agnaou STRUCTURAL AND ELECTRICAL STUDIES OF SILICON-DOPED Bi ₄ V ₂ O ₁₁	79
Danica Piper PROCESSING AND CHARACTERIZATION OF ULTRATHIN EPITAXIAL LaMnO ₃ BASED FILMS BY CHEMICALSOLUTION DEPOSITION	80

Pavlina Bancheva SYNTHESIS AND INVESTIGATING THE PROPERTIES OF PURE AND DOPED ZnO THIN FILMS OBTAINED BY SPRAY PYROLYSIS	81
Andrzej Kruk EFFECT OF RE ³⁺ DOPING ON THE MAGNETO-OPTICAL AND LUMINESCENT PROPERTIES OF Y ₂ O ₃	82
Dariia Chernomorets SOLUBILITY OF ZrO ₂ IN YTTRIUM OXIDE AND ITS INFLUENCE ON TRANSPARENT CERAMICS PROPERTIES	83
Dániel A. Karajz STRUCTURAL POSSIBILITIES OF INVERSE OPALS	84
Larisa O. Fedorova ADVANCED OPTICAL ZnS AND MgF ₂ CERAMICS: MODIFICATION OF THE SURFACE BY CARBON NANOTUBES	85
Aicha Elaoui PREPARATION OF ZnO/Bi ₂ WO ₆ HETEROSTRUCTURES VIA SURFACTANT- ASSISTED HYDROTHERMAL METHOD: CHARACTERIZATION AND PHOTOCATALYTIC ACTIVITY	86
Natalija Milojković PHOTOCATALYTIC DEGRADATION OF REACTIVE ORANGE 16 DYE USING TiO ₂ /PPy NANOCOMPOSITES UNDER SIMULATED SOLAR LIGHT	87
Mourad Mechouet OBTAINING A HYBRID ELECTRODE BASED ON IMIDAZONIUM IONTERMINATED AND METALLIC NANO-CLUSTERS AND ITS CATALYTIC ACTIVITY TOWARD HER	88
Jana Petrović ACID TREATED g-C ₃ N ₄ PHOTOCATALYSTS FOR THE PHOTOCATALYTIC REDUCTION OF Cr(VI)	89
Irmak Su Okten PREPARATION OF Pt BASED HYDROTALCITE DERIVED Mg(Al)O SHAPED CATALYSTS VIA WET IMPREGNATION FOR PROPANE DEHYDROGENATION REACTION	90
Manuel A. García-Galán EVALUATING THE MECHANICAL INTEGRITY AND RELIABILITY OF MULTI- CHANNELLED FLAT-SHEET CERAMIC MEMBRANES FOR FILTRATION APPLICATIONS	91
Miguel Vieira HYDROTHERMALLY ACTIVATED CERAMIC MEMBRANES FOR OXYGEN SEPARATION	92
Radu Stefan Stîrbu SIMULATION OF PROPERTIES OF ANISOTROPIC POROUS CERAMICS BASED ON 3D RECONSTRUCTED MICROSTRUCTURES	93

Zalán István Várady SYNTHESIZING SiO ₂ -ZnO COMPOSITE NANOPARTICLES FOR APPLICATION OF NANOFUIDS	94
Stjepan Šarić RELATIONSHIP BETWEEN BENTONITE INTERNAL AND EXTERNAL SURFACE AREA AND ITS PERFORMANCE IN WINE CLARIFICATION	95
Vesna Miljić VISIBLE LIGHT DRIVEN PHOTOCATALYTIC CERAMIC BASED NANO- COMPOSITES WITH ANTIBACTERIAL ACTIVITY	96
Maria M. Savanović PHOTOCATALYTIC PERFORMANCE OF TiO ₂ -COATED ALUMINUM FOIL FOR DEGRADATION OF RHODAMINE B IN WATER	97
Francis Oseko LEVERAGING DEFECTS TO PROMOTE DUAL EXSOLUTION ON (BaLa) _{1- x} Ag _x CoFeO _{6-δ}	98
Sara Joksović CARBON NANOTUBES-BASED THIN FILMS PREPARED BY LOW-COST TECHNIQUE FOR BIOSENSING APPLICATIONS	99
Milinko Perić SYNTHESIS OF Ti ₃ C ₂ T _x AND ITS POTENTIAL USE IN WATER PURIFICATION PROCESSES	100
Ivana Goričan ENERGY STORAGE PROPERTIES OF (1-x)Pb(Fe _{0.5} Nb _{0.5})O _{3-x} BiFeO ₃ BULK CERAMICS AND CERAMIC THICK FILMS	101
Touraj Karimpour IMPACT OF MAGNETIC FIELD STRENGTH ON THE CATALYTIC ACTIVITY OF CHEMICAL VAPOR DEPOSITION (CVD) SYNTHESIZED CoFe ₂ O ₄ THIN FILMS FOR ELECTROCHEMICAL OXIDATION OF NITROGEN	102
Anass Chrir EFFECT OF POST-ANNEALING ON MICROSTRUCTURE AND FERROELECTRIC PROPERTIES OF LEAD-FREE BaTiO ₃ THICK FILMS ELABORATED BY AEROSOL DEPOSITION METHOD	103
Mariam Osman POROSITY EFFECTS ON THE FUNCTIONAL PROPERTIES AND PIEZOELECTRIC HARVESTING PERFORMANCES OF BCTZ CERAMICS	104
Imane Anasser HYDROTHERMAL SYNTHESIS OF SBN AURIVILLIUS CERAMICS FOR FERROELECTRIC APPLICATION	105
Mihai-Alexandru Grigoroșcuta MAGNETO-ORIENTATION OF BULK MgB ₂ SUPERCONDUCTOR	105
Victor Zamora NOVEL BORON CARBIDE COMPOSITES SINTERED AT LOW TEMPERATURE	106

Maria Sajdak COMPOSITES FROM THE TiB_2 - $MoSi_2$ - C SYSTEM	107
Nikhil Bhootpur RAPID PRESSURELESS SINTERING OF CELLULOSE NANOFIBRE BASED CERAMIC MATRIX COMPOSITES	108
Adrian Grabos OXIDATION AND THERMAL PROPERTIES OF INCONEL 625 – NIOBIUM CARBIDE SYSTEM	109
Salomão M. da Silva Junior ELECTROLESS Ni-P FILM DEPOSITION – SURFACE TREATMENT ON ALUMINA AND POLYAMIDE	110
Jesús López-Arenal AN ALL-CARBIDE TRIPLEX PARTICULATE CERAMIC COMPOSITE FOR TRIBOLOGICAL APPLICATIONS	111
Sumiya Iqbal TAILORING SILICA NANOCARRIERS TO OVERCOME HYDROPHOBIC DRUG CHALLENGES - AN INVESTIGATION INTO ENHANCED MOLECULAR WEIGHT AND HYDROPHOBICITY MODULATION	111
Hakim Firas Ibrahim FLUOROMETRIC DETERMINATION OF LYSOZYMES WITH APTAMER MODIFIED SILICA NANOPARTICLES	112
Slobodanka Stanojević-Nikolić BIOSILICA DERIVED FROM AGRICULTURAL AND INDUSTRIAL WASTE FOR DEVELOPMENT OF NANO-SILICA/POLYMER COMPOSITES FOR APPLICATION IN VARIOUS FIELDS	113
Evgenije Novta A MODIFIED PHOTO-ACTIVATION PROTOCOL OF A HIGHLY-FILLED DENTAL COMPOSITE USING OPTICAL FIBERS	114
Mihajlo Valuh BIO-STABILIZATION OF EARTH ELEMENTS BASED ON INDUSTRIAL WASTES	115
Karyna Sokol CALCIUM PHOSPHATE CERAMICS WITH MAX PHASE ADDITIVES FOR MEDICAL APPLICATIONS	115
Izabela Rutkowska ALUMINUM OXIDE LAYERS DEPOSITED USING PULSED DIRECT CURRENT ELECTROPHORETIC DEPOSITION	116
Justyna Grygierek SOL-GEL SYNTHESIS OF METAL-ION MODIFIED PRECERAMIC POLYMERS FOR DLP 3D PRINTING	117

Hocine Moussouni INVESTIGATING THE REACTIVITY OF SURFACE FUNCTIONALIZATION WITH IONTERMINATED USING SCANNING ELECTROCHEMICAL MICROSCOPY (SECM)	118
Wojciech Wieczorek SYNTHESIS AND STRUCTURAL ANALYSIS OF SOL-GEL DERIVED SiFeOC LAYERS	119
Weronika Bulejak PHOTOCURABLE CERAMIC DISPERSIONS USED IN THE PREPARATION OF COMPOSITE MATERILAS	120
Jakub Marchewka PRECERAMIC POLYMERS FOR THE PREPARATION OF 3D SILICON OXYCARBIDE STRUCTURES BYDIGITAL LIGHT PROCESSING	121
Tariq Labbilta ECO-FRIENDLY GLASS FERTILIZERS – CONTROLLED NUTRIENT RELEASE FOR WHEAT PLANTS	122
Ömer Furkan Ötken HIGH-TEMPERATURE ALKALINE CORROSION BEHAVIOUR OF [CaO, SrO, BaO]-Na ₂ O-B ₂ O ₃ -SiO ₂ ENAMEL COATINGS ON METALLIC SUBSTRATES	123
Marija Kovač MULTI-ANALYTICAL NON-INVASIVE METHODS AS A TOOL FOR PIGMENT CHARACTERIZATION	124
Yurii Delikhovskyi THE INFLUENCE OF COAL FLY ASH ADDITIVES ON EVOLUTION OF CLAY- CEMENT MORTARS	125
Nurullah Çöpoğlu NANO-COPPER OXIDE-INDUCED SURFACE IMPROVEMENTS IN (Na,Li) ₂ O- ZnO-P ₂ O ₅ -B ₂ O ₃ -SiO ₂ GLASS-CERAMIC COATINGS	126
Dunja Djukić THE INFLUENCE OF BRUSHITE-METAKAOLIN GEOPOLYMER MATERIALS ON PHYTOSTABILIZATION OF LEAD IONS BY <i>FESTUCA RUBRA</i>	127
Abdelhamid Oufakir STUDY OF STRUCTURAL AND SURFACE CHANGES OF SiO ₂ FLINT AGGREGATE UNDER THERMAL TREATMENT FOR POTENTIAL VALORIZATION	128
John Wanjala SiC PARTICLE SIZE EFFECT ON CERAMIC THERMO-MECHANICAL PROPERTIES	129
Olga Chudinovych PHASE EQUILIBRIA IN THE La ₂ O ₃ -Lu ₂ O ₃ -Ho ₂ O ₃ SYSTEM AT 1500 AND 1600 °C	130

Anastasiya Kruglyak INFLUENCE OF HAFNIUM OXIDE ON THE STRUCTURE AND PROPERTIES OF POWDERS AND CERAMICS OF THE YSZ-HfO ₂ COMPOSITION	131
Iva Toković DFT STUDY OF BULK AND EPITAXIAL LaMnO ₃ FILM	132
Tina Tasheva INVESTIGATION OF THE MICROSTRUCTURE AND MAGNETIC PROPERTIES OF SILICATE GLASS-CERAMICS WITH HIGH IRON OXIDE CONCENTRATION	133
Sanita Ahmetović INVESTIGATING THE EFFECTS OF Zr DOPING ON THE TITANIUM DIOXIDE NANOFIBRES	134
Talha Doğan Özerdem COMPREHENSIVE STUDY ON CHARACTERIZATION, LEACHING BEHAVIOUR AND AGRICULTURE PREFORMANCE OF GLASS FRIT AS A SLOW-RELEASE FERTILIZER	135
Aleksandra Pavlović NOVEL POROUS ORGANOSILICA NANOPARTICLES FOR UV PROTECTION	136
Derya Akbulut EFFECTS OF PYROLYSIS CONDITIONS ON THE PRODUCTION OF ACTIVATED CARBON FROM OLIVE SEEDS	137

INDEX OF AUTHORS

OA-29

**PREPARATION, SYNTHESIS AND CHARACTERIZATION OF
NANOMETRIC $\text{Ca}_{0.9}\text{Er}_{0.1}\text{MnO}_3$**

Tijana B. Vlašković¹, Bojana Laban¹, Maja Milošević², Maria Čebela³,
Vladimir Dodevski³, Milena Rosić³

¹*Faculty of Sciences and Mathematics, University of Priština in Kosovska Mitrovica,
Lole Ribara 29, 38220 Kosovska Mitrovica, Serbia*

²*Department of Mineralogy, Crystallography, Petrology and Geochemistry, Faculty of
Mining and Geology, Đušina 7, 11000 Belgrade, Serbia, University of Belgrade, Serbia*

³*Laboratory for Material Science, Institute of Nuclear Science „Vinča“, National
Institute of the Republic of Serbia, University of Belgrade Belgrade, Serbia*

e-mail: tijanaticapantovic@gmail.com

The present research demonstrates the synthesis and characterization of $\text{Ca}_{0.9}\text{Er}_{0.1}\text{MnO}_3$ perovskite powder using the sucrose nitrate procedure (SNP) technique. The following substances were used to obtain this complex perovskite: sucrose $\text{C}_{12}\text{H}_{22}\text{O}_{11}$, which has a dual role (complexant and fuel), and metal nitrates were used as oxidants - calcium nitrate tetrahydrate $\text{Ca}(\text{NO}_3)_2 \times 4\text{H}_2\text{O}$, manganese(II) nitrate hydrate $\text{Mn}(\text{NO}_3)_2 \times \text{H}_2\text{O}$, erbium(III) nitrate pentahydrate $\text{Er}(\text{NO}_3)_3 \times 5\text{H}_2\text{O}$. Nanopowder was prepared by combining metal nitrates in their respective stoichiometric ratios. The synthesized $\text{Ca}_{0.9}\text{Er}_{0.1}\text{MnO}_3$ powder was calcined in a temperature range of 800–1000 °C for a period of 15 min. The effects of calcination were characterized through different experimental techniques (differential thermal analysis (DTA), X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR), Field emission scanning electron microscopy (FESEM), and inductively coupled plasma (ICP)).