

CONTENT

Program	5
Abstracts	13
Crystal growth of Eu-doped (Y, Lu)ScO ₃ by micro-pulling-down method using W crucible	15
<i>Yuka Abe, Takahiko Horiai, Yuui Yokota, Masao Yoshino, Rikito Murakami, Takashi Hanada, Akihiro Yamaji, Hiroki Sato, Yuji Ohashi, Shunsuke Kurosawa, Kei Kamada, and Akira Yoshikawa</i>	
Assessment of the impact of process parameters on temperature fields during laser cutting of AISI 304 steel sheets	16
<i>Eva Babalová and Mária Behúlová</i>	
Characterization of different types of silica-based materials	17
<i>Oleg Babčenko, Zdeněk Remeš, Klára Beranová, Kateřina Kolářová, Jan Čermák, Alexander Kromka, Zdeněk Prošek, and Pavel Tesárek</i>	
Preparation and characterization of gold nanoparticles in silicate glass matrices using aerodynamic levitation coupled to laser heating	18
<i>Jan Baborák, Petr Vařák, Alessio Zandona, Michael Pitcher, Mathieu Allix, Emmanuel Veron, and Pavla Nekvindová</i>	
Highly nonstoichiometric Tb ₂ Y _{0.1-1} Al ₅ O ₁₂ :Ce single crystals with modified microstructure, defect concentration, luminescence, and scintillation properties	19
<i>Karol Bartosiewicz, Masao Yoshino, Takahiko Horiai, Marcin Witkowski, Damian Szymanski, Shunsuke Kurosawa, and Akira Yoshikawa</i>	
Heat source models for numerical simulation of laser welding processes	20
<i>Mária Behúlová and Eva Babalová</i>	
Point defects creation and their influence on luminescent properties of 0D, 1D, 2D and 3D materials	21
<i>Maksym Buryi, Vladimir Babin, František Hájek, Tomáš Hubáček, Anna Artemenko, Zdeněk Remeš, and Júlia Mičová</i>	
Extreme Large 2D and 3D Nanoscale Application	22
<i>Antonio Casares</i>	
Study of phase equilibria in Al-Co and Pd-Co systems	23
<i>Ivona Černičková, Libor Ďuriška, Peter Švec sr., and Jozef Janovec</i>	
Analysis of phase transformations in Fe - 1.1C - 0.9Si - 0.4Mn - 8.3Cr - 2.1 Mo - 0.5V steel using dilatometry and computational thermodynamics	24
<i>Roman Čička and Jozef Krajčovič</i>	
Ion Beam Analysis including ToF ERDA of complex composition layers	25
<i>Jozef Dobrovodský, Dušan Vaňa, Matúš Beňo, František Lofaj, and Robert Riedlmajer</i>	
A measuring of the sound absorption coefficient of structured materials produced by 3D printing ..	26
<i>Rastislav Ďuriš and Eva Labašová</i>	
Structural, thermal and mechanical properties of gallium-enriched SAC lead-free solders	27
<i>Libor Ďuriška, Ivona Černičková, Marián Drienovský, Roman Moravčík, Ladislav Dobrovodský, and Roman Čička</i>	

Analysis of Biocompatible Metallic Materials used in Medicine	28
<i>Žaneta Gerhátová, Jozef Paták, Paulína Babincová, Mária Hudáková, and Marián Palcut</i>	
Basic study of lithium strontium borates as thermal neutron scintillators	29
<i>Jan Havlíček, Kateřina Rubešová, Vít Jakeš, Romana Kučerková, Alena Beitlerová, and Martin Nikl</i>	
Crystal growth and optical characterization of Ce-doped mixed rare-earth sesquioxide single crystals for scintillator applications	30
<i>Takahiko Horiai, Yuui Yokota, Masao Yoshino, and Akira Yoshikawa</i>	
Structure and properties of Ag ₂ O-GeO ₂ -P ₂ O ₅ glasses	31
<i>Tomáš Hostinský, Petr Mošner, and Ladislav Koudelka</i>	
The influence of structure, sensitization and corrosion on the fatigue properties of AISI 304 austenitic steel	32
<i>Silvia Hudecová, Milan Uhrčík, Peter Palček, Viera Zatkalíková, Lenka Markovičová, Martin Mikolajčík, Veronika Chvalníková, and Martin Slezák</i>	
Y-stabilized hafnia as a potential scintillating material for ionizing radiation detection	33
<i>Vít Jakeš, Kateřina Rubešová, Tomáš Thoř, Jiří Prikner, Christo Gugushev, Romana Kučerková, Jan Pejchal, and Martin Nikl</i>	
Advances in hydroxyapatite dosimetry: New trends	34
<i>David John, Maksym Buryi, Kateřina Pachnerová Brabcová, and Ivo Světlík</i>	
Influence the effect of balancing the grinding set on the accuracy and roughness of the machined surface	35
<i>František Jurina, Tomáš Vopát, Marek Vozár, and Boris Pätoprstý</i>	
Development and material design of structured scintillators for high resolution radiation imaging and thermal neutron detection	36
<i>Kei Kamada, Rei Sasaki, Naoko Kutsuzawa, Masao Yoshino, Yuji Shirakami, Yoshiyuki Usuki, Takahiko Horiai, and Akira Yoshikawa</i>	
The Effect of the Laser Beam on the width of the Cut	37
<i>Jana Knedlová, Milena Kubišová, Vladimír Pata, Miroslav Marčaník, and Barbora Bočáková</i>	
The role of X-ray radiation in materials research	38
<i>Marian Koman</i>	
Experience with modeling values of the virtual catapult range	39
<i>Janette Kotianová, Michal Turza, Zuzana Červeňanská, and Rastislav Ďuriš</i>	
Silver phosphate glasses modified by transition metal oxides	40
<i>Ladislav Koudelka, Tomáš Hostinský, and Petr Mošner</i>	
Energy of nuclei formation on curved active centers	41
<i>Zdeněk Kožíšek, Robert Král, and Petra Zemenová</i>	
Simultaneous DSC-TGA-MS analyses of RE ₂ O ₃ compounds for growth multicomponent oxides ..	42
<i>Robert Král, Petra Zemenová, Alexandra Falvey, Vojtěch Vaněček, Aleš Bystřický, Jan Pejchal, and Martin Nikl</i>	
Statistical evaluation of hard-to-measure surfaces	43
<i>Milena Kubišová, Jana Knedlová, Hana Vrbová, Vladimír Pata, and Barbora Bočáková</i>	

New Ni(II) complexes with 2-aminomethylbenzimidazole, preparation and characterization	44
<i>Vladimír Kuchtanin, Rudolf Varga, Ján Pavlík, and Ján Moncol'</i>	
Development of a high-frequency rapid scan electron spin resonance spectrometer	45
<i>Oleksii Laguta, Matus Šedivý, Vinicius Santana, Andriy Marko , and Petr Neugebauer</i>	
Activation function as an inspiration for metamaterial design and gyroid as inspiration for activation function design. Part 2: next contexts	46
<i>Roman Budjač, Iveta Markechová, and Hana Stúpalová</i>	
Degradation of rubber compounds under natural conditions	47
<i>Lenka Markovičová, Viera Zatkalíková, Milan Uhrčík, and Silvia Hudecová</i>	
Possible methods of removing PCBs from environment	48
<i>Jaroslava Maroszová</i>	
Possibilities of analyzing the mechanical properties of welded and soldered joints	49
<i>Maroš Martinkovič and Pavel Kovačócy</i>	
Single crystal growth of Ru-Mo-W-Re alloy wire by the dewetting micro-pulling-down method ... ??	
<i>Rikito Murakami, Shiika Itoi, Kotaro Yonemura, Kei Kamada, and Akira Yoshikawa</i>	
Effect of structural modification of rotor with a flexible shaft on its modal properties	51
<i>Milan Nad', Peter Bucha, and Ladislav Rolník</i>	
Assessment of cutting tool wear using a numerical FEM simulation model	52
<i>Martin Necpal</i>	
NV spin qubit systems: a platform from sensing to quantum computation	53
<i>Milos Nesladek</i>	
Crystal Growth and Optical Properties of Ce-doped (Y, Tb) ₃ Al ₂ Ga ₃ O ₁₂ and (Gd, Tb) ₃ Al ₂ Ga ₃ O ₁₂ Scintillators	54
<i>Kazuya Omuro, Masao Yoshino, Kei Kamada, Kyoung Jin Kim, Takahiko Horiai, Rikito Murakami, Akihiro Yamaji, Takashi Hanada, Yuui Yokota, Shunsuke Kurosawa, Yuji Ohashi, Hiroki Sato, and Akira Yoshikawa</i>	
Influence of selected parameters of drag finishing on tool microgeometry	55
<i>Boris Pätoprstý, Marek Vozár, Tomáš Vopát, Ivan Buranský, and František Jurina</i>	
Morphology of selected multicomponent garnet laser crystals grown by micro-pulling-down method	56
<i>Jan Pejchal, Jan Havlíček, Jan Šulc, Karel Nejezchleb, Helena Jelínková, and Martin Nikl</i>	
Metal Chalcogenides for Thermoelectricity, Solar Cells and Optoelectronic Devices	57
<i>Michal Piasecki</i>	
Bioactivity of carboxylatocopper(II) complexes	58
<i>Miroslava Puchoňová and Flóra Jozefíková</i>	
The comparison of photoluminescence decay in YAG:Er, ZnO and SiO ₂ crystals	59
<i>Zdeněk Remeš, Maksym Buryi, Štěpán Remeš, Radim Novák, Jan Pejchal, Oleg Babčenko, and Júlia Mičová</i>	
How many electronic study resources is too much?	60
<i>Kateřina Rubešová and Vít Jakeš</i>	

Effect of welding mode on selected properties of additively manufactured AA5087 aluminium alloy parts	61
<i>Martin Sahul, Miroslav Sahul, Ladislav Kolařík, Tomáš Němec, Marie Kolaříková, and Barbora Bočáková</i>	
Influence of generator parameters on cutting width during WEDM process	62
<i>Vladimír Šimna</i>	
Tribological performance of nanolaminate coatings based on tungsten and niobium nitrides	63
<i>Kateryna Smyrnova, Martin Sahul, Marián Haršáni, Alexander Pogrebnyak, Lubomír Čaplovič, Vyacheslav Beresnev, Mária Čaplovičová, and Martin Kusy</i>	
Transparent ceramics of LiAl_5O_8 prepared by spark plasma sintering	64
<i>Tomáš Thoř, Kateřina Rubešová, Vít Jakeš, and Filip Průša</i>	
The influence of heat treatment on the nitriding layer on AISI 304 austenitic steel	65
<i>Milan Uhrčík, Peter Palček, Viera Zatkalíková, Lenka Markovičová, Silvia Hudecová, Zuzana Šurdová, Martin Slezák, and Veronika Chvalníková</i>	
Development of novel cross-luminescence scintillators	66
<i>Vojtěch Vaněček, Robert Král, Romana Kučerková, Petra Zemenová, and Martin Nikl</i>	
Er-doped zinc-silicate glass-ceramics with enhanced emission in the near-infrared region	67
<i>Petr Vařák, Jan Baborák, Emmanuel Véron, Alena Michalcová, Jan Mrázek, Jakub Volf, Mathieu Allix, and Pavla Nekvindová</i>	
The effect of composition on luminescence properties of Ce and Mn ions in borate-silicate glasses	68
<i>Jakub Volf, Petr Vařák, Martin Kormunda, Maksym Buryi, and Pavla Nekvindová</i>	
Development of cutting forces in high-speed machining on turning centre	69
<i>Tomáš Vopát, František Jurina, Marek Vozár, Boris Pätoprstý, and Martin Necpal</i>	
Influence of cutting edge microgeometry on the selected aspects of machining difficult-to-cut materials	70
<i>Marek Vozár, Boris Pätoprstý, Tomáš Vopát, Ivan Buranský, and František Jurina</i>	
Composition Dependence of Resistivity of Ru-Mo-W ternary system and single crystal wire growth by the dewetting micro-pulling-down method	71
<i>Kotaro Yonemura, Rikito Murakami, Shiika Itoi, Kei Kamada, Takahiko Horiai, Takashi Hanada, Akihiro Yamaji, Masao Yoshino, Hiroki Sato, Yuji Ohashi, Shunsuke Kurosawa, Yuui Yokota, and Akira Yoshikawa</i>	
Corrosion resistance of austenitic stainless steels in mixed sulfuric acid and copper sulfate solution	72
<i>Viera Zatkalíková, Lenka Markovičová, Milan Uhrčík, and Silvia Hudecová</i>	
Author index	73
List of Participants	77