

**18<sup>th</sup> INTERNATIONAL MULTIDISCIPLINARY  
SCIENTIFIC GEOCONFERENCE  
S G E M 2 0 1 8**

**CONFERENCE PROCEEDINGS**

**VOLUME 18**



**NANO, BIO AND GREEN – TECHNOLOGIES  
FOR A SUSTAINABLE FUTURE  
ISSUE 6.1**

.....  
**MICRO AND NANO TECHNOLOGIES,**

**SPACE TECHNOLOGIES AND PLANETARY SCIENCE**  
.....

**2 July - 8 July, 2018**

**Albena, Bulgaria**

---

## **DISCLAIMER**

This book contains abstracts and complete papers approved by the Conference Review Committee. Authors are responsible for the content and accuracy.

Opinions expressed may not necessarily reflect the position of the International Scientific Council of SGEM.

Information in the SGEM 2018 Conference Proceedings is subject to change without notice. No part of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of the International Scientific Council of SGEM.

Copyright © SGEM2018

All Rights Reserved by the International Multidisciplinary Scientific GeoConferences SGEM

Published by STEF92 Technology Ltd., 51 “Alexander Malinov” Blvd., 1712 Sofia, Bulgaria

Total print: 5000

**ISBN 978-619-7408-50-8**

**ISSN 1314-2704**

**DOI: 10.5593/sgem2018/6.1**

**INTERNATIONAL MULTIDISCIPLINARY SCIENTIFIC GEOCONFERENCE SGEM  
Secretariat Bureau**

E-mail: [sgem@sgem.org](mailto:sgem@sgem.org) | URL: [www.sgem.org](http://www.sgem.org)

## **ORGANIZERS AND SCIENTIFIC PARTNERS**

---

- THE CZECH ACADEMY OF SCIENCES
- LATVIAN ACADEMY OF SCIENCES
- POLISH ACADEMY OF SCIENCES
- RUSSIAN ACADEMY OF SCIENCES
- SERBIAN ACADEMY OF SCIENCES AND ARTS
- SLOVAK ACADEMY OF SCIENCES
- NATIONAL ACADEMY OF SCIENCES OF UKRAINE
- INSTITUTE OF WATER PROBLEM AND HYDROPOWER OF NAS KR
- NATIONAL ACADEMY OF SCIENCES OF ARMENIA
- SCIENCE COUNCIL OF JAPAN
- EUROPEAN ACADEMY OF SCIENCES, ARTS AND LETTERS
- ACADEMY OF SCIENCES OF MOLDOVA
- MONTENEGRIN ACADEMY OF SCIENCES AND ARTS
- CROATIAN ACADEMY OF SCIENCES AND ARTS, CROATIA
- GEORGIAN NATIONAL ACADEMY OF SCIENCES
- ACADEMY OF FINE ARTS AND DESIGN IN BRATISLAVA
- TURKISH ACADEMY OF SCIENCES
- NIZHNY NOVGOROD STATE UNIVERSITY OF ARCHITECTURE AND CIVIL ENGINEERING, RUSSIAN FEDERATION
- BULGARIAN ACADEMY OF SCIENCES
- BULGARIAN INDUSTRIAL ASSOCIATION
- BULGARIAN MINISTRY OF ENVIRONMENT AND WATER

## **INTERNATIONAL SCIENTIFIC COMMITTEE**

---

### **Nano, Bio, Green and Space - Technologies for a Sustainable Future**

- PROF. STEFAN DIMOV, UK
- PROF. MARIPIA VIOLA MAGNI, ITALY
- PROF. STEFFEN LEHMANN, AUSTRALIA
- PROF. RAJAT GUPTA, UK
- PROF. DI MAAS PETER DROEGE, LICHTENSTEIN
- PROF. NIKOLOZ CHIKHRADZE, GEORGIA
- PROF. JAN KAZMIERCZAK, POLAND

- PROF. VADIM ZHMUD, RUSSIA
- DR. FRANCIS BALESTRA, FRANCE
- DR. ANDROULA NASSIOPOULOU, GREECE
- ASSOC. PROF. KRYSZYNA JANUSZKIEWICZ, POLAND
- DR. EMILIO MIGUEL MITRE, SPAIN
- PHD. SINISA SRECEC, CROATIA

---

**CONFERENCE PROCEEDINGS CONTENTS****MICRO AND NANO TECHNOLOGIES**

---

- 1. A COMPUTATIONAL METHOD FOR THE PREDICTION OF CORROSION RESISTANCE OF SOME IRON POWDER METALLURGY MATERIALS**, Mihaela Marin, Florin Bogdan Marin, Dunarea de Jos University of Galati, Romania ...3
- 2. A FEW ASPECTS CONCERNING THE INFLUENCE OF THE ELECTRODES ON THE SF<sub>6</sub> INSULATION DIELECTRIC BEHAVIOR**, Adrian Paun, Flaviu Mihai Frigura-Iliasa, Mihaela Frigura-Iliasa, Petru Andea, Doru Vatau, Politehnica University Timisoara, Romania.....9
- 3. ALTERNATIVE NON-DEMOUNTABLE ASSEMBLY TECHNOLOGIES FOR ALUMINUM ALLOYS**, Dimitrescu A, Babis C, Alecusan AM, Chivu O, Ungureanu L, University Politehnica of Bucharest, Romania ..... 17
- 4. AN ORIGINAL CAD BASED DESIGN FOR A DOMESTIC LOW VOLTAGE SURGE ARRESTER MODULE**, Emil Lazarescu, Mihaela Frigura-Iliasa, Lia Dolga, Hannelore Filipescu, Madlena Nen, Politehnica University of Timisoara, Romania .....25
- 5. ANALYSIS OF WEARABLE INTELLIGENT DEVICES FOR INCREASED SAFETY IN HAZARDOUS ENVIRONMENTS**, Dr. Eng. Suciu, G., Pasat, A., Nadrag, C., Balanescu, M., BEIA Consult International, Romania .....31
- 6. ANTI-CORROSION PROPERTIES OF NANOCOMPOSITE COATINGS IN AMINE ENVIRONMENTS**, Prof. DrSc Kanat Mukashev, PhD-student Rustem Atchibayev, Prof. Abyl Muradov, Dr Ainur Kyzzyrova, Dr Zhasulan Aitbayev, Al-Farabi Kazakh National University, Kazakhstan.....39
- 7. ANTIBACTERIAL POLYMERIC NANOCOMPOSITES BASED ON PVC AND FUNCTIONALIZED TiO<sub>2</sub> NANOPARTICLES WITH APPLICATION IN THE MEDICAL AND FOOD INDUSTRIES**, GEORGESCU MIHAI, ALEXANDRESCU LAURENTIA, SONMEZ MARIA, NITUICA MIHAELA, FICAI ANTON, INCDTP-Div. Leather and Footwear Research Institute ICPI, Romania.....47
- 8. APPLICATION OF AN ARTIFICIAL NEURAL NETWORK FOR PREDICTION OF THE WEAR RESISTANCE OF SINTERED IRON ALLOYS**, Florin Bogdan Marin, Mihaela Marin, Dunarea de Jos University of Galati, Romania.....55
- 9. APPLICATION OF PALLADIUM-CONTAINING POLYSTYRENE-BASED MAGNETICALLY SEPARABLE CATALYSTS IN FINE ORGANIC SYNTHESIS**, Prof. Esther Sulman, Dr. Oleg Manaenkov, Mrs. Nadezhda Nemygina, Dr. Linda Nikoshvili, Prof. Liubov Kiwi-Minsker, Tver Technical University, Russia .....61

- 10. APPLICATION OF SILICA NANOPARTICLES TO IMPROVE THE ABRASION RESISTANCE OF TRANSPARENT POLYACRYLATE COATINGS**, Vladimir E. Katnov, Elvira I. Garifullina, Pavel V. Grishin, Sergey N. Stepin, Oksana P. Kouznetsova, Kazan (Volga Region) Federal University, Russia.....67
- 11. ASSESSMENT OF THERMAL PARAMETERS FROM THE MANUFACTURING PROCESS OF METAL OXIDE VARISTORS**, Razvan Petrenci, Mihaela Frigura-Iliasa, Doru Vatau, Flaviu Mihai Frigura-Iliasa, Florin Ionel Balcu, Politehnica University of Timisoara, Romania.....75
- 12. BIOFUNCTIONALIZED IRON OXIDE (II, III) NANOPARTICLES AS DIAGNOSTIC TOOLS FOR AUTOIMMUNE DISEASES**, Tsvetelina Batsalova, Dzhemal Moten, Borislav Mateev, Balik Dzhambazov, Plovdiv University, Bulgaria .....83
- 13. BULK MODULUS AND WORK FUNCTION OF TITANIUM IN CONTEXT OF QUANTUM THEORY**, dr hab. Janusz Chrzanowski, dr Bohdan Bieg, Maritime University of Szczecin, Poland.....91
- 14. CELLULAR AUTOMATA APPROACH FOR AEROGELS STRUCTURE MODELING AND PROPERTIES PREDICTION AS A BASE FOR MULTISCALE NUMERICAL SIMULATION**, Natalia Menshutina, Andrey Kolnoochenko, Igor Mitrofanov, Evgeniy Lebedev, D. Mendeleev University of Chemical technology of Russia, Russia .....99
- 15. COMPARING PERFORMANCE OF STRUCTURED AND UNSTRUCTURED CATALYSTS IN DRY REFORMING OF METHANE**, Assis. Prof. Ivan Mitrichev, Ms Anna Shaneva, Assoc. Prof. Andrey Zhensa, Prof. Eleonora Koltsova, Mendeleev University of Chemical Technology of Russia, Russia.....107
- 16. COMPARISON BETWEEN THE INFLUENCE OF REHABILITATION TECHNIQUES ON STATIC AND VARIABLE LOADS, IN CASE OF CRUCIFORM FILLET WELDED JOINTS REINFORCED WITH ADDITIONAL WELDING ROWS**, BABIS C, SAVU D I, DIMITRESCU A, IACOBESCU G, SEMENESCU A, Politehnica University of Bucharest, Romania.....115
- 17. COMPARISON BETWEEN THE REHABILITATION OF SINGLE AND MULTIPLE ROWS FILLET WELDED JOINTS IN ORDER TO INCREASE THE FATIGUE LIFE TIME**, Babis C, Savu D I, Dimitrescu A, Chivu O, Semenescu A, Politehnica University of Bucharest, Romania.....123
- 18. COMPOSITION EFFECTS AND THERMOMECHANICAL TREATMENTS ON MECHANICAL AND STRUCTURAL PERFORMANCE OF S420NL STEEL**, Gheorghe Gurau, Carmela Gurau, Liviu Gurau, Dunarea de Jos University of Galati, Romania.....131

<b>19. COPPER-CHITOSAN NANOCOMPOSITES: METAL VAPOR SYNTHESIS, SPECTROSCOPIC CHARACTERIZATION AND ANTIFUNGAL ACTIVITY,</b> Alexander Vasil'kov, Alexander Naumkin, Margarita Rubina, Mousa A. Alghuthaymi, Kamel A. Abd-Elsalam, Nesmeyanov Institute of Organo-Element Compounds, Russia .....	139
<b>20. CORE-SHELL PIGMENTS BASED ON MICROCALCITE WITH PHOSPHATE AND PHOSPHONATE/AMINE SHELLS,</b> Aydar A. Kayumov, Firdaws A. Aliyew, Assoc. Prof. Dr. Sergey N. Stepin, Assoc. Prof. Dr. Maya R. Ziganshina, Assoc. Prof. Dr. Alexey V. Sorokov, Kazan (Volga Region) Federal University, Russia.....	147
<b>21. DECISION SUPPORT SYSTEM FOR CHOOSING ROBOTS IN INDUSTRIAL PROCESSES,</b> Paul Ciprian Patric, Marin Mainea, Valahia University of Targoviste, Romania .....	155
<b>22. DEVELOPMENT OF NOVEL CATALYSTS SYNTHESIZED BY HYDROTHERMAL METHOD,</b> Prof. Valentina Matveeva, Dr. Antonina Stepacheva, Ms. Mariia Markova, Dr. Alexandra Gavrilenko, Dr. Irina Shkileva, Tver Technical University, Russia.....	163
<b>23. EFFECT OF HYDROGEN PEROXIDE ADDITION TO PHOSPHATE BUFFERED SALINE SOLUTIONS ON CORROSION RESISTANCE OF 316L STAINLESS STEEL,</b> Nicoleta SIMIONESCU, Lidia BENEĂ, Anca RAVOIU, University "Dunarea de Jos", Romania .....	169
<b>24. EFFECTS OF IRON OXIDE (II, III) NANOPARTICLES EXPOSURE: <i>IN VITRO</i> EVALUATION USING ALGAL AND HUMAN CELLS,</b> Tsvetelina Batsalova, Dzhemal Moten, Borislav Mateev, Balik Dzhambazov, Plovdiv University, Bulgaria .....	177
<b>25. ELECTROCHEMICAL ETCHING OF P-TYPE GALLIUM PHOSPHIDE,</b> Gauhar Mussabek, Dana Yermukhamed, Saniya Sarsembek, Kazakhbay Almasuly, Vladimir Sivakov, Al-Farabi Kazakh National University, Kazakhstan.....	185
<b>26. ELECTROCHEMICAL METHODS AS PROMISING ROUTES FOR NANOSTRUCTURATION AND FUNCTIONALIZATION OF MATERIALS AND BIOMATERIALS,</b> Lidia BENEĂ, Dunarea de Jos University of Galati, Romania.....	191
<b>27. ENVIRONMENTAL EFFECTS AND HEALTH RISKS OF MANUFACTURING POLYMERIC COMPOSITE NANOMATERIALS: SUMMARY OF THE "FOSTERING PRODUCTIVE INNOVATION" SUB-PROJECT ENVIRONMENTAL MANAGEMENT PLAN,</b> Olzhas Zakiruly, Yerkat Mukazhanov, Nurtas Shayakhmetov, Zhetysu State University named after I.Zhansugurov, Kazakhstan .....	199

- 28. EXPERIMENTAL AND PREDICTION OF POROSITY IN SOME SINTERED IRON-BASED POWDER METALLURGY MATERIALS BY USING ARTIFICIAL NEURAL NETWORKS**, Mihaela Marin, Florin Bogdan Marin, Dunarea de Jos University of Galati, Romania .....207
- 29. FORMULATION AND CHARACTERIZATION OF NEW MODIFIED-RELEASE TOPICAL ANTINEOPLASTIC PRODUCTS**, Assoc. Prof. Dr. Lacramioara Ochiuz, Assoc. Prof. Dr. Diana Guranda, Prof. Dr. Eugen Diug, Assoc. Prof. Dr. Alina Stefanache, Prof. Dr. Aurelia Vasile, Lecturer Dr. Maria Ignat, Gr. T. Popa University of Medicine and Pharmacy, Romania.....213
- 30. FUNCTIONAL MEDICAL MATERIALS BASED ON BIOPOLYMERS: PREPARATION AND INVESTIGATION OF STRUCTURE AND PHYSICO-CHEMICAL PROPERTIES**, E.N. Glazacheva, A.B. Uspenskii, A.A. Voronova, M.V. Uspenskaya, P.P. Snetkov, ITMO University, Russia .....219
- 31. FUNCTIONALISED MESOPOROUS SILICA NANOPARTICLES AS DRUG CARRIER**, Assoc. Prof. Dr. Alina Stefanache, Prof. Dr. Gladiola Tantaru, Lecturer Dr. Maria Ignat , Assist. Dr. Andreea Creteanu, Assoc. Prof. Dr. Lacramioara Ochiuz, Gr. T. Popa University of Medicine and Pharmacy, Romania .....227
- 32. IMAGE PROCESSING ANALYSIS OF POROSITY IN SOME IRON-BASED POWDER METALLURGY MATERIALS**, Florin Bogdan Marin, Mihaela Marin, Dunarea de Jos University of Galati, Romania .....235
- 33. IMPROVEMENT OF PULP FIBERS PROPERTIES BY XYLAN NANOPARTICLES**, Evgenii Novozhilov, Galina Sukhanova, Konstantin Terentyev, Northern Arctic Federal University, Russia .....243
- 34. INFLUENCE OF HEAT TREATMENT ON CORROSION RESISTANCE OF NANOCOMPOSITE NI-P-AL<sub>2</sub>O<sub>3</sub> LAYERS**, Tamara RADU, Lucica BALINT, Gina Genoveva ISTRATE, Dunarea de Jos University of Galati, Romania.....251
- 35. INVESTIGATION AND MODELING OF STRUCTURES AND PROPERTIES OF SILICA-RESORCINOL-FORMALDEHYDE AND SILICA-CARBON AEROGELS**, I. Lebedev, M. Gordienko, A. Tyrtysnikov, I. Mitrofanov, N. Menshutina, Dmitry Mendeleev University of Chemical Technology of Russia, Russia .....259
- 36. INVESTIGATION OF ELECTROCHEMICAL PROPERTIES IN CHLORIDE-CONTAINING COMMERCIAL WATERS**, Alexei Narivskiy, Rustem Atchibayev, Abyl Muradov, Kanat Mukashev, Yerlan Yar-Mukhamedov, Al-Farabi Kazakh National University, Kazakhstan.....267
- 37. RESOURCE-SAVING PRODUCTION TECHNOLOGY OF PRODUCTS MADE OF POLYMERIC MATERIAL: PROBLEM AND SOLUTION**, Kobzev D. Y., Kombarova P. V., Blokhin A. N., Tarov V. P., Baronin G. S., Tambov State Technical University, Russia .....275

<b>38. MECHANICAL PROPERTIES OF ALUMINIUM ALLOYS CRYSTALLISED IN THE CENTRIFUGE</b> , Telesheva Assel, Degtyareva Antonina, Shokobaeva Gulnara, Syzdykova Bayan, Tashkeyeva Gulmira, Kazakh National Research Technical University named after K. Satpayev, Kazakhstan,.....	281
<b>39. MINIATURIZATION AS A WAY TO PRESERVE MATERIAL IN THE MANUFACTURE OF MICROSTRIP DEVICES</b> , Denis A. Letavin, Knyazev Nikolay S., Ural Federal University, Russia .....	287
<b>40. MINIATURIZATION OF MICROSTRIP DEVICES FOR SMALL SPACE SATELLITES AND AIRCRAFT</b> , Denis A. Letavin, Ural Federal University, Russia .....	293
<b>41. MORPHOLOGICAL AND STRUCTURAL CHARACTERIZATION OF THIN LAYERS OF TIN COATED ON THE SILICON SUBSTRATE</b> , Stela CONSTANTINESCU, University "Dunarea de Jos", Romania .....	299
<b>42. NANO-COMPOSITION TI-Co(Mn) COATINGS INVESTIGATION</b> , Gulmira Yar-Mukhamedova, Nikolay Sakhnenko, Marina Ved, Irina Yermolenko, Rustem Atchibayev, Al-Farabi Kazakh National University, Kazakhstan.....	307
<b>43. NANOCOMPOSITES BASED ON RUBBER AND NANOCCLAY</b> , Ph. D. Stelescu Maria-Daniela, Ph. D. Craciun Gabriela, Ph.D. Alexandrescu Laurentia, Ph.D. Pelin Cristina, Eng. Georgescu Mihai, National Research and Development Institute For Textiles And Leather - Division The Leather And Footwear Institute, Romania .....	315
<b>44. NANODIMENSIONAL METAL MANGANATES (IV) IN THE PROTECTION COATINGS</b> , Assoc. Prof. Dr. Maya R. Ziganshina, PhD student Firdaws A. Aliyew, PhD student Sergey A. Karandashov, Assoc. Prof. Dr. Anatoly P. Svetlakov, Assist. Prof. Dr. Irek I. Shakurov, Kazan (Volga Region) Federal University, Russia .....	323
<b>45. NANOTECHNOLOGY IN CONCRETE MATERIALS - A POWERFUL MACRO-MATERIAL INFLUENCED BY ITS NANO-PROPERTIES</b> , Senior Lecturer Loredana JUDELE, Senior Lecturer Daniel LEPADATU, Senior Lecturer Ion ANTONESCU, Lecturer Phd. Andrei BOBOC, Phd. Student Diana Ioana MORARIU, Gheorghe Asachi Technical University of Iasi, Romania .....	331
<b>46. NEW IMPROVEMENTS TO THE MANUFACTURING PROCESS OF METAL OXIDE VARISTORS</b> , Mihai Calin Vinga, Mihaela Frigura-Iliasa, Petru Andea, Flaviu Mihai Frigura-Iliasa, Marius Mirica, Politehnica University of Timisoara, Romania.....	339
<b>47. OBTAINING AND CHARACTERIZATION OF WOOD-MINERAL COMPOSITES</b> , Victor Danilov, Prof. Arkady Ayzenshtadt, Assoc. Prof. Tatyana Makhova, Northern Arctic Federal University, Russia .....	347

- 48. OBTAINING COMPOSITE MATERIALS OF THE POLYMER-ALUMINUM TYPE BY GLUING USING BICOMPONENT ADHESIVES**, Dr. Dimitrescu A, Dr. Babis C, Alecusan AM, Dr. Chivu O, Dr. Ungureanu L, University Politehnica of Bucharest, Romania .....355
- 49. ON DEFORMATION BEHAVIOUR AND MICROSTRUCTURAL CHANGE OF Cu-9.51Al-3.81Ni ALLOY**, Gheorghe Gurau, Carmela Gurau, Dunarea de Jos University of Galati, Romania.....363
- 50. OPERATING CHARACTERISTICS OF CONCRETE MODIFIED BY HIGH-DISPERSED SAPONITE-CONTAINING MATERIAL**, Marina Morozova, Associate Professor Maria Frolova, Professor Valeriy Lesovik, Professor Arkady Ayzenshtadt, Northern Arctic Federal University, Russia .....371
- 51. OPTIMIZATION OF SOLUBILITY OF AMIODARONE HYDROCHLORIDE THROUGH COMPLEXATION WITH HYDROXYPROPYL- $\beta$ --CYCLODEXTRIN**, Andreea Creteanu, Alina Stefanache, Gladiola Tantaru, Madalina Vieriu, Lacramioara Ochiuz, Gr. T. Popa University of Medicine and Pharmacy, Romania.....377
- 52. ORGANIC-MINERAL MODIFIER FOR PETRIFICATION OF WOOD**, N.V. Kiliusheva A.M. Ayzenshtadt V.E. Danilov A.A. Stenin, Northern Arctic Federal University named after M.V. Lomonosov Faculty of Civil Engineering and Architecture, Russia.....385
- 53. PHASE TRANSITION OF HEXAGONAL BE NANOCRYSTAL INTO CUBIC SUPERLATTICE UNDER X-RAY RADIATION**, Mels Boranbayev, Gulmira Yar-Mukhamedova, PhD Farabi Bozheyev, Zhasulan Nakysbekov, Madi Aitzhanov, Al-Farabi Kazakh National University, Kazakhstan.....393
- 54. POLYMER NANOCOMPOSITES OF POLYAMIDE/POLYETHYLENE/FUNCTIONALIZED CARBON FIBRES**, Alexandrescu Laurentia, Georgescu Mihai, Ficai Anton, Trusca Roxana, Tudoroiu Ligian, INCDTP-Div.Leacher and Footwear Research Institute ICPI, Romania .....401
- 55. PRODUCTION OF POLYMER CONCRETE COMPOSITIONS EFFECTIVE IN UNDERGROUND AGGRESSIVE WATERS**, Prof. Nikoloz Chikhradze, Prof. Guram Abashidze, M.Sc. Davit Tsverava, G. Tsulukidze Mining Institute, Georgia .....409
- 56. PROPERTIES OF ANTI-CORROSIVE FERRITE PIGMENT SYNTHESIZED WITH THE USE OF PRODUCTION WASTE**, Sergey N. Stepin, Elvira I. Garifullina, Vladimir E. Katnov, Ilgiz V. Usmanov, Svetlana I. Tolstosheyeva, Kazan (Volga Region) Federal University, Russia .....417

- 57. RESEARCH AND MATHEMATICAL MODELING OF THE PROCESS OF OBTAINING A NANOCOMPOSITE OF SiC-CNT**, Ms Anna Shaneva, Prof. Eleonora Koltsova, Assoc. Prof. Andrey Zhensa, Prof. Evgene Zharikov, Ms. Nelly Popova, Mendeleev University of Chemical Technology of Russia, Russia .....425
- 58. RETENTION CAPACITY OF POLYSULFONE MEMBRANE IN WASTEWATER TREATMENT**, Laurentia Geanina TIRON, Eliza DANAILA, Gina Genoveva ISTRATE, Stefan BALTA, Maria VLAD, Dunarea de Jos University of Galati, Romania .....433
- 59. STATISTICAL EVALUATION OF NUTRITIONAL CHARACTERISTICS FOR SEVERAL CHEESE TYPES**, Assoc. Prof. Dr. Ariana - Bianca Velciov, Assist. Prof. Dr. Sofia Popescu, Lecturer Dr. Antoanela Cozma, Lecturer Dr. Dacian Lalescu, Assoc. Prof. Dr. Ing. Ioan David, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara, Romania .....441
- 60. STATISTICAL MODELING OF PHYSIC-CHEMICAL AND BIOCHEMICAL CHARACTERIZATION OF VARIOUS SMOOTHIE TYPES**, Assist. Prof. PhD Sofia Popescu, Assoc. Prof. PhD. Ariana Velciov, Assoc. Prof. PhD. Alma Nicolin, Lecturer PhD Dacian Lalescu, Lecturer PhD Lia Micula, Banat University of Agronomical Sciences and Veterinary Medicine, Romania .....449
- 61. STUDIES ON DANUBE WATER FILTRATION PERFORMANCE OF NANOCOMPOSITE ULTRAFILTRATION MEMBRANES**, Stefan Catalin PINTILIE, Marius BODOR, Andreea Liliana LAZAR, Iulian Gabriel BIRSAN, Stefan BALTA, University "Dunarea de Jos", Romania .....457
- 62. SUPERCRITICAL EQUIPMENT OF DIFFERENT VOLUME TO PRODUCE AEROGELS IN FORM OF PARTICLES - PROSPECTS OF SCALE-UP**, Menshutina N.V., Lovskaya D.D., Lebedev A.E., D. Mendeleev University of Chemical technology of Russia, Russia .....465
- 63. SURFACES MORPHOLOGY, ROUGHNESS AND WETTING PROPERTIES OF NANOPOROUS ALUMINUM OXIDE FILM FORMED ON 1050 ALUMINUM ALLOY BY CONTROLLED ELECTROCHEMICAL OXIDATION**, V.M. Dumitrascu, L. Benea N.L. Simionescu, Dunarea de Jos University of Galati, Romania .....473
- 64. TECHNOLOGICAL METHODS TO REDUCE WELDING STRESSES AND DISTORTIONS**, Corneliu Rontescu, Dumitru-Titi Cicic, Alexandru-Daniel Bucur, Ana-Maria Bogatu, University Politehnica of Bucharest, Romania .....481
- 65. THE INFLUENCE OF THE WAY OF DEPOSITING THE FILLER MATERIAL ON THE GEOMETRICAL CHARACTERISTICS OF THE WELD BEAD**, Corneliu Rontescu, Dumitru-Titi Cicic, Ana-Maria Bogatu, Petriceanu Constantin, University Politehnica of Bucharest, Romania .....489

- 66. THE NONLLINEAR MATHEMATICAL 2D MODEL FOR THE ANALYSIS OF TEMPERATURE REGIMES IN THERMOSENSITIVE LAYERED MEDIUM WITH INCLUSIONS**, Vasyl Havrysh, Roman Kochan, Lubov Kolyasa, Vasyl Loik, Marcin Kubica, University of Bielsko-Biala, Poland .....497
- 67. THE REACTOR SYSTEM FOR BIOSYNTHESIS OF BACTERIAL CELLULOSE WITH DESIRED MICROFIBRIL ORIENTATION**, Ksenia Bolotova, Irina Vydrina, Northern Arctic Federal University, Russia .....505

## **SPACE TECHNOLOGIES AND PLANETARY SCIENCE**

---

- 68. AEROSPACE ENGINEERING DUES TO GLOBAL SUSTAINABILITY**, Dumitru-Dorin Prunariu, Ildiko Tulbure, University 1 Decembre, Romania .....513
- 69. ANALYSIS LUNAR MAPS USING MULTIFRACTAL METHOD**, Zoya Andreeva, Alexey Andreev, Natalya Demina, Ekaterina Kronrod, Yury Nefedyev, Kazan (Volga Region) Federal University, Russia .....521
- 70. ANALYSIS MHD SOLAR ACTIVITY USING ROBUST METHODS**, Yury Nefedyev, Alexey Andreev, Natalya Demina, Sergey Demin, Zoya Andreeva, Kazan (Volga Region) Federal University, Russia .....529
- 71. BUILDING PHYSICS REQUIREMENTS AND ARCHITECTURE STUDENTS**, Kristyna Schulzova, Assoc. Prof. Dr. Daniela Bosova, Ceske vysoke uceni technicke v Praze Fakulta architektury, Czech Republic .....537
- 72. COMPUTER DETERMINATION OF OPTIMAL PARAMETERS FOR THE TELESCOPE PLACED ON THE LUNAR SURFACE**, Petrova Natalia, Hanada Hideo, Andreev Alexey, Nefedyev Yury, Kazan (Volga Region) Federal University, Russia .....545
- 73. CONFIGURATION OF SOURCES OF EARTH'S MAGNETIC FIELD OBTAINED BY SOLVING INVERSE MAGNETOMETRY PROBLEM**, Kochnev V.A., Institute of Computational Modelling SB RAS, Russia .....553
- 74. DEVELOPMENT OF NEW METHODS OF AUTO- AND CROSS-CORRELATION ANALYSIS OF QUASI-STAR OBJECTS' X-RAYS INTENSITY**, Dr. Natalya Demina, Dr. Sergey Demin, Alexey Andreev, Prof. Yury Nefedyev, Kazan (Volga Region) Federal University, Russia .....561
- 75. ELASTOMERIC COMPOUNDS FOR SPACE APPLICATION**, Maria Daniela Stelescu, Adriana Stefan, Elena Manaila, Maria Sonmez, National Research And Development Institute For Textiles And Leather - Division The Leather And Footwear Institute, Romania .....569

- 
- 76. IMPROVED MODEL OF A TETHERED SPACECRAFT SYSTEM WITH ARTIFICIAL GRAVITY**, Prof. Dr. Eng. Andrei Craifaleanu, Prof. Dr. Eng. Cristian Dragomirescu, Assoc. Prof. Dr. Eng. Nicolaie Orasanu, Asist. Prof. Dr. Eng. Alina Ovanisof, University Politehnica of Bucharest, Romania.....577
- 77. POSSIBLE LANDING SITES FOR FUTURE LUNAR MISSIONS IN THE AREA OF THE NORTHERN POLE OF THE MOON**, S.G. Pugacheva, E.A. Feoktistova, V. V. Shevchenko, Bakanas E.S., Moscow State University, Russia.....585
- 78. STUDY ON THE HIGH-INTENSITY GEOMAGNETIC STORM FROM MARCH 2015, BASED ON TERRESTRIAL AND SATELLITE DATA**, NATALIA-SILVIA ASIMOPOLOS, LAURENTIU ASIMOPOLOS, Geological Institute of Romania, Romania.....593
- 79. THE METHOD OF REDUCING DISSIMILAR SPACE IMAGES TO THE SINGLE REFERENCE SYSTEM**, Alexey Andreev, Yury Nefedyev, Natalya Demina, Sergey Demin, Viktor Borovskih, Kazan (Volga Region) Federal University, Russia .....601
- 80. THE STUDY OF FULL FLOW STATISTICAL FEATURES OF THE X-RAYS CYGNUS X-1 BINARY SYSTEM**, Dr. Sergey Demin, Dr. Natalya Demina, Alexey Andreev, Prof. Yury Nefedyev, Kazan (Volga Region) Federal University, Russia .....607
- 81. EFFICIENT USE OF WATER IN AGRICULTURAL CROPS BASED ON SATELLITE INFORMATION**, PhD. Vergil Marian Muraru, PhD. Student Sebastian Lucian Muraru, PhD. Cornelia Muraru-Ionel, Researcher Asistant Paula Condruz Researcher Raluca Sfaru, INMA Bucharest, Romania.....615

