

17th International Multidisciplinary Scientific GeoConference (SGEM 2017)

Nano, Bio and Green - Technologies for a
Sustainable Future

Extended Scientific Sessions

SGEM International Multidisciplinary Scientific GeoConference
Volume 17, Issue 63

Vienna, Austria
27 – 29 November 2017

Part 1 of 2

ISBN: 978-1-5108-5512-0

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2017) by International Multidisciplinary Scientific GeoConferences (SGEM)
All rights reserved.

Printed by Curran Associates, Inc. (2018)

For permission requests, please contact International Multidisciplinary Scientific GeoConferences (SGEM)
at the address below.

International Multidisciplinary Scientific GeoConferences (SGEM)
51 Alexander Malinov Blvd.
fl 4, Office B5 1712
Sofia, Bulgaria

Phone: +359 2 405 18 41
Fax: +359 2 405 18 65

sgem@sgem.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

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

- 1. AN APPROACH TO VISUALIZING THE PROCESS OF SEEDING IN THE PRODUCTION OF SAPPHIRE SINGLE CRYSTALS BY THE METHOD OF KYROPOULOS**, Prof. Ph.D. Alexander Belousov, Artyom Grebenik, Ph.D. Yury Koshlich, Maxim Panchenko.....3
- 2. IN SITU SYNTHESIZED MAGNETITE ZSM-5 FOR EFFICIENT REMOVAL OF PHOSPHATE FROM WASTEWATER**, Abdul Aziz, Prof. Dr. Kwang Soo Kim, University of Science and Technology UST, Korea South11
- 3. LIGHTWEIGHT ULTRA-STRENGTH ALUMINIUM FLAT PRODUCTS FOR LOW ENVIRONMENTAL IMPACT APPLICATIONS FABRICATED BY SEVERE PLASTIC DEFORMATION AND COLD ROLLING**, Lecturer Nicolae SERBAN, Prof. Vasile Danut COJOCARU, Prof. Dr. Doina RADUCANU, Prof. Ion CINCA, Lecturer Florentina NICULESCU, University POLITEHNICA of Bucharest - Materials Science and Engineering Faculty - Materials Processing and Ecometallurgy Department, Romania.....19
- 4. MATHEMATICAL MODELING – A TOOL TO ANALYZE PLANT – SOIL INTERACTION**, Despina-Maria Bordean, Vladut Nicolae Valentin, Caba Ioan, Monica Harmanescu, Tiberiu Iancu, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara, Romania.....27
- 5. MECHATRONIC MICRO-POSITION SYSTEM USED IN HANDLING OPERATIONS**, Paul Ciprian Patric, Ion Florin Popa, Ryad Zemouri, Valahia University of Targoviste, Romania35
- 6. MICRO-ANALYTICAL INSTRUMENTS FOR INVESTIGATION OF ELEMENTAL AND MINERAL DISTRIBUTION IN URANIUM-BEARING SANDSTONES**, M.Sc. Petr Mikysek, Assoc. Prof. Dr. Marek Slobodnik, M.Sc. Marek Dosbaba, Assoc. Prof. Dr. Tomas Trojek, Masaryk University, Czech Republic.....43
- 7. NITROLIGNOSULFONATES AS A MAGNETIC FLUID STABILIZER**, Assoc. Prof. Viacheslav Veshnyakov, Ph.D. student Nikolay Kuzyakov, Full Prof. Dr. Yuriy Khabarov, Northern Arctic Federal University, Russia55
- 8. ORDINARY KRIGING COMPARISON AND INVERSE DISTANCE WEIGHTING FOR QUALITY ASSESSMENT OF VIETNAM CEMENT LIMESTONE DEPOSITS**, Vu Dinh Trong, Tran Dinh Bao, Fomin S.I., Saint-Petersburg Mining University, Russia.....61

- 9. START-STOP ANALYSIS OF HIGH-SPEED BEARINGS WITH A FLEXIBLE BUSHING**, Ph. D. Eng. Wojciech Miąskowski, MSc Eng. Bartosz Moczulak, Ph. D. Eng. Krzysztof Nalepa, Ph. D. Eng. Pawel Pietkiewicz, Ph. D. Eng. Wieslaw Komar, University of Warmia and Mazury in Olsztyn, Poland69
- 10. SYNTHESIS OF NANOCOMPOSITES FROM TI-AL-B-C POWDERS BY EXPLOSIVE CONSOLIDATION**, Mikheil Chikhradze, George Oniashvili, Fernand D.S Marquis, Ferdinand Tavadze Institute of Metallurgy and Materials Science, Georgia77
- 11. THE INFLUENCE OF ULTRASOUNDS ON THE STRUCTURE OF SOME LOW CARBON AND MANGANESE DUAL-PHASE STEELS**, Lecturer Dr. Constantin Dulucheanu, Lecturer Dr. Traian Severin, Stefan cel Mare University of Suceava, Romania85
- 12. UV-VIS FE-TIO₂ PHOTO CATALYSIS OF CYCLOPHOSPHAMIDE AND ITS DEGRADATION INTERMEDIATES**, Lucian-Alexandru Constantin, Toma Galaon, Florentina Laura Chiriac, Mirela Alina Constantin, Nicolae Ionut Cristea, National Research and Development Institute for Industrial Ecology - ECOIND, Romania.....93

SECTION ADVANCES IN BIOTECHNOLOGY

- 13. AGRI-ENVIRONMENT MEASURES FOR PROMOTING ROMANIAN SUSTAINABLE AGRICULTURE**, Gheorghe Cristian Popescu, Monica Popescu, University of Pitesti, Romania.....103
- 14. ALLELOPATHIC EFFECTS PRODUCED BY XANTHIUM STRUMARIUM EXTRACTS ON DOWNY MILDEW IN TOMATOES**, Lecturer Dr. Carabeț Alin, Assist. Prof. Dr. Ștef Ramona, Dr. Iamandei Maria, Full Prof. Dr. Grozea Ioana, Assist. Prof. Dr. Virteiu Ana-Maria, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara, Romania111
- 15. ANXIOLYTIC-LIKE EFFECTS OF BIOTECHNOLOGICAL PREPARATION ROPREN® IN β -AMYLOID-(25-35) RAT MODEL OF ALZHEIMER'S DISEASE IN FEMALE RATS WITH EXPERIMENTAL MODEL OF MENOPAUSE**, Prof. Dr. Julia Fedotova, Prof. Dr. Olga Volkova, ITMO University, Russia.....117
- 16. APPLICATION OF BIOTECHNOLOGICAL METHODS IN MINERAL PROCESSING**, Iva Janakova, Vladimir Cablik, Barbara Tora, Anna K. Nowak, VSB-Technical University of Ostrava, Czech Republic125
- 17. ASCOPHYLLUM NODOSUM SEAWEED EXTRACT EFFECT ON DROUGHT STRESS IN BEAN PLANTS**, Assoc. Prof. Dr. Monica Popescu, Assoc. Prof. Dr. Gheorghe Cristian Popescu, University of Pitesti, Romania.....133

18. ASESSMENT OF AROMATIC COMPOSITIONS FROM TONIC DRINKS MADE FROM INDOOR PLANTS WITH BIOACTIVE POTENTIAL , Corina Ciucure, Diana Stegarus, Daniela Sandru, Ecaterina Lengyel, Ovidiu Tita, National Institute for Research and Development for Cryogenics and Isotopes Technologies - ICSI Rm.Valcea, Romania	141
19. BIOGENIC AMINES OCCURRENCE INTO WINES AND BEERS FROM THE ROMANIA MARKET , Mircea Oroian, Ana Leahu, Sorina Ropciuc, Stefan cel Mare University of Suceava, Romania.....	147
20. CHEMICAL COMPOSITION AND ANTIOXIDANT PROPERTIES OF BASIL ESSENTIAL OIL , Calin Jianu, Corina Mișca, Daniela Stoin, Gabriel Bujanca, Gruia Alexandra Teodora, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara - Faculty of Agricultural Management, Romania	155
21. CHEMICAL CONTROL OF THE INVASIVE SPECIES AMBROSIA ARTEMISIIFOLIA L. IN SUN FLOWER AGROECOSYSTEM , Assist. Prof. Dr. Stef Ramona, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara, Romania.....	161
22. COMPUTER SYSTEM USING INTERNET OF THINGS FOR MONITORING OF BEE HIVES , M.Sc. Kristina Dineva, Assoc. Prof. Dr. Tatiana Atanasova, Bulgarian academy of science - Institute of Information and Communication Technologies, Bulgaria.....	169
23. CONVERSION OF PAPER-GRADE KRAFT PULP INTO DISSOLVING-GRADE PULP FOR CELLULOSE ACETATE PRODUCTION , Evgeniy Novozhilov, Konstantin Terentyev, Artem Ivakhnov, Tatyana Skrebets, Dmitriy Chukhchin, Northern Arctic Federal University, Russia.....	177
24. CYTOGENETIC EFFECTS OF THE COMMERCIAL FUNGICIDE TOPAS 100EC ON MERISTEMATIC ROOT CELLS OF ALLIUM CEPA L. , Assist. Prof. Dr. Liliana MIRON, Prof. Dr. Georgeta BELENIUC, Assoc. Prof. Dr. Elena DOROFTEI, Ovidius University of Constanta, Romania	185
25. DEGRADATION POTENTIAL OF BACTERIA AND FUNGI ISOLATED FROM SITES CONTAMINATED WITH PESTICIDES AND SYNTHETIC POLYMERS , PhD. Zuzana Rybkova, Prof. Katerina Malachova, Assoc. Prof. Cenek Novotny, University of Ostrava, Czech Republic	193
26. DYNAMIC AND EMPIRICAL RHEOLOGICAL PROPERTIES OF DOUGH AS AFFECTED BY MAGNESIUM SALT FROM VARIOUS SOURCES , Lecturer dr. Sorina ROPCIUC, Assoc. Prof. Dr.Georgiana Gabriela CODINA, Dumitru ZAHARIA, Lecturer dr. Silviu Gabriel STROE, Stefan cel Mare University of Suceava, Romania.....	201

27. EFFECTS OF GRAPE SEEDS FLOUR ADDITION ON WHEAT FLOUR DOUGH RHEOLOGICAL PROPERTIES , MSc. Eng. Madalina Iuga, Assoc. Prof. Dr. Eng. Silvia Mironeasa, Dr. Eng. Dumitru Zaharia, Assoc. Prof. Dr. Eng. Sorina Ropciuc, Prof. Dr. Eng. Costel Mironeasa, Stefan cel Mare University of Suceava, Romania.....	209
28. ELEMENTAL AND MACROMOLECULAR PROFILE OF WHEATGRASS IN DIFFERENT CULTIVATION SETUPS , Maria-Emiliana Fortuna, Andrei Lobiuc, Xenia Patras, Ionel Miron, Petru Poni Institute of Macromolecular Chemistry - Iasi, Romania.....	217
29. ENABLING INTRACELLULAR ASSAYS DURING ON-CHIP DIFFERENTIATION OF INDUCED PLURIPOTENT STEM CELLS INTO HEPATOCYTES , M.Sc. Philip Dalsbecker, M.Sc. Jannick Theobald, Prof. Dr. Stefan Woelfl, Dr. Caroline Beck Adiels, Prof. Dr. Mattias Goksor, University of Gothenburg, Sweden	225
30. ENZYMATIC CEREAL HYDROLYSATES FOR CULTIVATION AND HALOBACTERIUM SALINARUM BIOMASS PRODUCTION , Murzina E.D., Grosheva V.D., Savelyeva E.E., Belov A.A., Kalenov S.V., D. Mendeleyev University of Chemical technology of Russia, Russia	235
31. EVALUATION OF DOUGH EMPIRICAL RHEOLOGICAL PROPERTIES AS AFFECTED BY DIFFERENT CALCIUM SALT ADDITION , Assoc. Prof. Dr. Gabriela Georgiana Codina, Lecturer Dr. Eng. Sorina Ropciuc, Dr. Eng. Dumitru Zaharia, Assoc. Prof. Dr. dr. Mircea Adrian OROIAN, University of Suceava, Romania.....	243
32. IMPACT OF SOME ROOTSTOCKS ON TOMATO PRODUCTION , Madalina Doltu, Marian Bogoescu, Dorin Sora, Gabriela Sovarel, HORTING INSTITUTE, Romania	251
33. INFLUENCE OF ENZYMATIC PREPARATIONS ON THE AROMATIC CHARACTER OF THE PINOT NOIR WINE , Diana Ionela Stegarus, Ecaterina Lengyel National Institute for Research and Development for Cryogenics and Isotopes Technologies - ICSI Rm. Valcea, Romania	257
34. INFLUENCE OF PARTICLE SIZES AND ADDITION LEVEL OF GRAPE SEEDS ON WHEAT FLOUR DOUGH RHEOLOGICAL PROPERTIES , Assoc. Prof. Dr. Eng. Silvia Mironeasa, MSc. Eng. Madalina Iuga, Dr. Eng. Dumitru Zaharia, Assoc. Prof. Dr. Eng. Adriana Dabija, Prof. Dr. Eng. Costel Mironeasa, Stefan cel Mare University of Suceava, Romania	265
35. ISOLATION OF THERMOPHILIC XYLANOLITIC BACTERIA FROM WOODY-CHIP PILE , Igor Sinelnikov, Olesya Yunitsyna, Ivan Rudakov, Marina Emelyanova, Northern Arctic Federal University, Russia	273

- 36. LAVANDULA ANGUSTIFOLIA “SEVTOPOLIS” ESSENTIAL OIL: THE CHEMICAL COMPOSITION AND ANTIMICROBIAL PROPERTIES**, Jianu Calin, Corina Misca, Gruia Alexandra Teodora, Gabriel Bujanca, Daniela Stoin, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara - Faculty of Agricultural Management, Romania281
- 37. NUTRITIONAL AND PHYSICO-CHEMICAL ASPECTS OF FRESH AND COMMERCIAL FRUIT JUICES**, Antoanela Cozma, Lia Micula, Florina Radu, Dacian Lalescu, Mihaela Petcu, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara, Romania287
- 38. OPTIMISATION OF DEPROTEINIZED PLANT RAW MATERIAL PRETREATMENT CONDITIONS FOR OBTAINING FODDER BIOMASS**, A.V. Tur, Dr. D.V. Baurin, Assoc. Prof. Dr. M.G. Gordienko, Assoc. Prof. Dr. I.V. Shakir, Prof. Dr. V.I. Panfilov, D. Mendeleyev University of Chemical technology of Russia, Russia295
- 39. OPTIMIZATION OF WHEAT FLOUR ENZYMATIC HYDROLYSIS FOR LACTOBACILLUS RHAMNOSUS SUBMERGED FERMENTATION**, Dr. Karetkin B.A., Prof. Dr. Panfilov V.I., Khromova N.Yu., Dr. Baurin D.V., Assoc. Prof. Dr. Shakir I.V, D. Mendeleyev University of Chemical technology of Russia, Russia303
- 40. PROJECTIONS FOR THE LATVIAN CEREAL SECTOR**, Dr. Aleksejs Nipers, Prof. Dr. Irina Pilvere, Dr. Sandija Zeverte-Rivza, Dr. Ilze Upite, Dr. Agnese Krievina, Latvia University of Agriculture, Latvia309
- 41. PUMPKIN FLESH AND SEEDS, SOURCES OF MINERALS AND ANTIOXIDANTS**, Andrei Dorel Catargiu, Despina-Maria Bordean, Dan-Dorin Raican, Cristina Gaita, Mariana Atena Poiana, University of Agronomic Sciences and Veterinary Medicine Timisoara, Romania319
- 42. RESEARCH REGARDING AS AND CD EXTRACTION FROM THE POLLUTED SOILS**, Ioana Monica SUR, Timea GABOR, Adriana CHIRILA BABAU, Ancuta Elena TIUC, Technical University of Cluj-Napoca, Romania327
- 43. RESEARCHES ON THE TRANSFORMATIONS THAT OCCUR IN MEAT OBTAINED FROM AQUACULTURE FISH DURING THE PRESERVATION**, Iuliana Manea, Gheorghe Dobrota, Valahia University of Targoviste, Romania.....335
- 44. SIMULTANEOUS DETERMINATION OF ACETOIN AND DIACETYL IN YOGURT BY A SPECTROPHOTOMETRIC METHOD**, Assoc. Prof. Dr. Florina Radu, Dr. Iuliana Popescu, Dr. Lia Micula, Assoc. Prof. Dr. Daniela Stoin, Dr. Antoanela Cozma, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara - Faculty of Agricultural Management, Romania.....343

- 45. STUDIES ON THE COLOR VARIABILITY IN POPULATION OF DIABROTICA VIRGIFERA VIRGIFERA LECONTE (INSECTA: COLEOPTERA) AND CORRELATION WITH DIFFERENT TYPES OF CORN HYBRIDS**, Horatiu Horgos, Ioana Grozea, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara, Romania351
- 46. SURFACE DISINFECTION OF BOVINE DENTIN SAMPLES INFECTED WITH ESCHERICHIA COLI FOR THE ASSESSMENT OF ENDODONTIC IRRIGANTS**, Assoc. Prof. Dr. biol. Alexandr Semenov, Prof. Dr. med. Irina Makeeva, Assoc. Prof. PhD. Svetlana Byakova, Assist. Prof. Nina Novozhilova, PhD Student Victoriya Dezhurko-Korol, First Moscow State Medical Sechenov University, Russia359
- 47. THE AROMATIC EVALUATION OF DISTILLATES MADE FROM SOUR CHERRIES FROM WELL-KNOWN REGIONS**, Diana Stegarus, Oana Botoran, Corina Ciucure, Roxana Ionete, Ecaterina Lengyel, National Institute for Research and Development for Cryogenics and Isotopes Technologies - ICSI Rm.Valcea, Romania365
- 48. THE EVOLUTION OF THE EXTENT OF ACCOMPLISHMENTS OF THE SOIL DEPENDING ON THE ROTATION AND THE DOSE OF FERTILIZERS TO CULTURE OF TRITICUM AESTIVUM**, Liliana MIRON, Georgeta BELENIUC, Corina Gavat, Elena DOROFTEI, Ovidius University of Constanta, Romania.....373
- 49. THE INFLUENCE OF UV-C RADIATION ON ANTHOCYANINS RECOVERY FROM HIBISCUS SABDARIFFA FLOWER AND RIBES NIGRUM FRUIT EXTRACTS**, Madalina Bibicu, Mirabela Perju, Horea Olosutean, Simona Oancea, Lucian Blaga University of Sibiu, Romania381
- 50. THE LEADING ROLE OF INNOVATIVE CHANGE STRATEGIES IN BIOTECHNOLOGY**, Dr. Takacs Ildiko-Csilla, Bercovici Adrian, Ph.D. student, Bucharest University of Economic Studies, Romania.....389
- 51. THE STUDY AND MODELING OF SOME GUT MICROBIOTA BACTERIA GROWTH IN FRUCTOOLIGOSACCHARIDES CONTAINED MEDIUM**, Karetkin B.A., Guseva E. V., Mishchenko A. S., Evdokimova S. A., Grosheva V. D., D. Mendeleyev University of Chemical technology of Russia, Russia397
- 52. THYMUS ALTERNANS KLOKOV: DATA REGARDING THE CHEMICAL COMPOSITION AND ANTIMICROBIAL ACTIVITY OF ESSENTIAL OILS**, Irina Boz, Simona Dunca, Corneliu Tanase, Naela Costica, Alexandru Ioan Cuza University, Romania.....405
- 53. USE OF AN ECOMETRIC MODEL FOR DEVELOPING AN OUTLOOK FOR THE CROP SECTOR IN LATVIA**, Dr. Aleksejs Nipers, Prof. Dr. Irina Pilvere, Dr. Sandija Zeverte-Rivza, Dr. Agnese Krievina, Latvia University of Agriculture, Latvia.....413

54. USE OF EXPERIMENTAL DESIGN FOR QUALITY OPTIMISATION OF YOGURT WITH ROSEHIP POWDER AND GRAPE SEED EXTRACTS, Assoc. Prof. Dr. Eng. Adriana Dabija, PhD. Stud. Eng. Anca Mihaela Gatlan, Assoc. Prof. Dr. Eng. Lacramioara Rusu, Assoc. Prof. Dr. Eng. Silvia Mironeasa, Stefan cel Mare University of Suceava, Romania421

55. YOLK COLOUR AND CAROTENOID COMPOSITION OF THE EGGS PRODUCED BY LAYING HENS FED DIETS CONTAINING TOMATO PROCESSING WASTE, Nour Violeta, Panaite Tatiana Dumitra, Corbu Alexandru Radu, Vlaicu Petru Alexandru, University of Craiova, Romania429

SECTION GREEN BUILDINGS TECHNOLOGIES AND MATERIALS

56. AEROGEL – A THERMAL CHARACTERIZATION AND ANALYSIS, PhD candidate Adrian Bucur, Assoc. Prof. Dr. Ligia Moga, Technical University of Cluj-Napoca, Romania.....439

57. ARCHITECTURE FROM WASTE, Eng. Arch. Janusz Barnas, Ph.D., Cracow University of Technology, Poland.....447

58. BOTTOM ASHES RECYCLING IN THE CERAMIC TILES PRODUCTION: TECHNICAL AND ENVIRONMENTAL ASPECTS, Giuseppe Sappa, Antonio Trotta, Stefania Vitale, Sapienza University of Roma, Italy455

59. BUILDINGS MINIMUM ENVIRONMENTAL CRITERIA AND ENERGY ISSUES, Prof. Manuela Rebaudengo Prof. Enrico Fabrizio, Politecnico di Torino, Italy.....463

60. CONTROL TECHNOLOGY IN PREFABRICATED AND MODULAR GREEN HOME, Janusz Juraszek, dr inz. Arkadiusz Grzywa, Hubert Walusiak, University of Bielsko-Biala, Poland.....471

61. DEEP ENERGY RETROFITTING OF BUILDING: THE DECISION-MAKING AND VALUATION PROCESS THROUGH PASSIVE HOUSE STANDARD, Angela Poletti, Roberto Iannetti, Mara Berardi, Politecnico di Milano, Italy.....479

62. ECOLOGICAL ASPECTS OF INDUSTRIAL ENTERPRISE MANAGEMENT, Assoc. Prof. Rafal Prusak, Dr eng. Zbigniew Skuza, Czestochowa University of Technology, Poland.....487

63. ECONOMIC ADVANTAGE ASSESSMENT OF RENEWABLE ENERGY RESOURCES APPLICATION FOR HEATING OF ADMINISTRATIVE BUILDINGS IN THE CZECH REPUBLIC, Lukas Labudek, M.Sc., Michal Prak, M.Sc., Veronika Roudna, M.Sc. et M.Sc., Assoc. Prof. Alena Ticha, M.Sc., Ph.D., Brno University of Technology Faculty of Civil Engineering, Czech Republic.....495

64. ENERGY AND SAFETY CONTROLLED PREFAB BUILDING SYSTEM, Elisabetta Ginelli, Gianluca Pozzi, Politecnico di Milano, Italy.....	503
65. ENERGY CONSUMPTION AND DATA FOR THE INTERNAL HEAT GAINS AND OPENING HOURS AT A COMMERCIAL BUILDING, Elena Camelia Tamas Papuc, Gratiela Maria Tarlea, Dragos Hera, Gianni Flamaropol, Technical University of Civil Engineering of Bucharest - Building Services Faculty, Romania.....	511
66. ENERGY RECOVERY FROM WASTEWATER FOR HEATING AND COOLING OF MULTIFUNCTIONAL BUILDING IN BRNO: MODELING THE CONNECTION, Dr. Jakub Racek, Ing. Michal Utersky, Ing. Jan Sevcik, Dr. Zdenek Dufek, Prof. Petr Hlavinek, Brno University of Technology Faculty of Civil Engineering, Czech Republic	519
67. ENERGY SAVING AND ENVIRONMENTAL PROTECTION BY INTEGRATING COGENERATION IN NEW RESIDENTIAL BUILDINGS, Lecturer Dr. Diana Tutica, Lecturer Dr. Paula Tudor, Prof. Dr. Roxana Patrascu, Assoc. Prof. Dr. Eduard Minciuc, Prof. Dr. George Darie, University Politehnica of Bucharest, Romania.....	527
68. ENERGY–SAVING AND ENVIRONMENTAL–FRIENDLY TECHNOLOGY FOR CONSTRUCTION OF UNDERGROUND ARCHITECTONIC OBJECTS WITH THE USE OF ROADHEADERS, Cheluszka Piotr, Remiorz Eryk, Silesian University of Technology, Poland.....	535
69. EXPERIMENTAL THERMALLY ACTIVATED BUILDING SYSTEM. FLOOR COVERING INFLUENCE IN HEATING MODE, Alexandru Serban, Gabriel Nastase, George Dragomir, Alin I. Brezeanu, Alexandru Bulmez, University Politehnica of Bucharest, Romania	547
70. FREE-FORM WOODEN ARCHITECTURAL ENVELOPES IN TERMS OF ENERGY EFFICIENCY, Michal Golanski, Krystyna Januszkiewicz, University of Zielona Gora - Faculty of Civil Engineering Architecture and Environmental Engineering, Poland	555
71. GEOPOLYMER LAMINATE PEEL RESISTANCE OF ADHESIVE BONDS WITH FOAM AND HONEYCOMB CORES., Robin Hron, Frantisek Martaus, Martin Kadlec, Roman Ruzek, Czech Aerospace Research Centre, Czech Republic	563
72. IMPACT OF SALINITY ON THE CONSISTENCY LIMITS OF CLAYEY SOILS, J. Fronczyk, K. Markowska-Lech, A. Tkaczyk, M. Bak, Warsaw University of Life sciences - SGGW, Poland.....	571
73. IMPROVEMENT OF OPERATIONAL PROPERTIES OF WOOD MATERIALS BY MODIFICATION THROUGH THE PENETRATION METHOD, Temenuzhka Radoykova, Sanchi Nenkova, Nelly Georgieva, Dimitrina	

Todorova, Tsvetelina Angelova, University of Chemical Technology and Metallurgy, Bulgaria	579
74. OFF-THE GRID LIVING IN COLD CLIMATES , Eng. Arch. Janusz Barnas, Ph.D., M.Sc. Eng. Arch. Krzysztof Barnas, M.Sc. Eng. Arch. Olga Kania, Cracow University of Technology, Poland.....	587
75. PARAMETERS INFLUENCE ON COMPRESSIVE STRENGTH OF FLY ASH GREEN CONCRETE WITH FIBERS USING A MODERN RESPONSE SURFACE METHOD , Senior Lecturer Daniel Lepadatu, Phd. Emanuela Marin, Senior Lecturer Loredana Judele, Senior Lecturer Ion Antonescu, Gheorghe Asachi Technical University of Iasi, Romania.....	595
76. THERMAL PERFORMANCE OF PHASE CHANGE MATERIALS IN ENERGY STORAGE , Dr. Samar Jaber, Mohammad Algara, Yazan Al Jada, Yousef Abulreesh, Jamil Qsous, American University of Madaba, Jordan	603
77. PRICE AS THE BASIC VALUE OF PROJECT MANAGEMENT OF BUILDING GREEN CONSTRUCTIONS , Martin Novy, Jana Novakova, Milos Waldhans, Jan Zacpal, Brno University of Technology Faculty of Civil Engineering, Czech Republic.....	611
78. PROPERTIES OF NEW CONSTRUCTION MATERIAL BASED ON EXPANDED POLYSTYRENE DERIVED FROM RECYCLING , Janusz Juraszek, Hubert Walusiak, University of Bielsko-Biala, Poland.....	619
79. PROPERTIES OF THE SOIL STABILIZED WITH A ROAD BINDER IN INDIRECT TENSILE TEST , Jaroslaw Gorszczyk, Konrad Malicki, Cracow University of Technology-Faculty of Civil Engineering, Poland	627
80. RESILIENT STEEL-CONCRETE SEISMIC RESISTANT FRAME ASSEMBLED BY POST-TENSIONING , Mircea Pastrav, N.I.R.D URBAN-INCERC, Romania	635
81. RESULTS OF A LONG-TERM ENERGY EFFICIENCY MONITORING OF TEST BUILDINGS UNDER REAL CLIMATIC CONDITIONS , Stanislavs Gendelis, Andris Jakovics, Janis Ratnieks, University of Latvia, Latvia.....	643
82. SLIP-JOINT CONNECTION OF CONICAL TOWER SEGMENTS - EXPERIMENTAL AND NUMERICAL ANALYSIS , Ing. Michal Botlo PhD. Ing. Jan Brodniansky PhD. Ing. Martin Magura PhD. Prof.Ing. Jan Brodniansky PhD., Slovak University of Technology Bratislava Faculty of Civil Engineering, Slovakia.....	651
83. SMART CITIES – ENERGY MANAGEMET OF BUILDINGS , Michal Rohlena, Jana Frkova, Czech Technical University in Prague, Czech Republic.....	659

- 84. STATUS OF THE ENERGY EFFICIENCY IN RETAIL INDUSTRY,** Elena Camelia Tamas Papuc, Gratiela Maria Tarlea, Dragos Hera, Gianny Flamaropol, Technical University of Civil Engineering of Bucharest - Building Services Faculty, Romania667
- 85. SUSTAINABLE DESIGN IN GLOBAL ARCHITECTURE,** Zsuzsanna Fulop Ph. D, Budapest University of Technology and Economics, Hungary675
- 86. TEXTILE REINFORCEMENT IN ULTRA HIGH PERFORMANCE CONCRETE – A SUSTAINABLE MATERIAL COMPOSITION,** DI Sandra Ofner, FH-Prof. DI Dr. Norbert Randl, MSc Tamas Meszoely, BSc Bernhard Hofer, Carinthia University of Applied Sciences, Austria683
- 87. THE CONCEPTS OF SMART ADAPTIVE MATERIALS IMPLEMENTED IN CIVIL ENGINEERING,** Janusz Juraszek, Paulina Cygan, University of Bielsko-Biala, Poland.....695
- 88. THE IMPLEMENTATION OF WIND ENERGY SOURCE IN THE DESIGN OF CONSTRUCTION EQUIPMENT,** Minh Nguyen Tien, Eva Jankovichova, Silvia Dubek, Marek Dubek, Slovak University of Technology in Bratislava - Faculty of Civil Engineering, Slovakia.....701
- 89. THE POTENTIAL OF HEAT PUMP SYSTEMS IN GREENHOUSE GAS EMISSION SAVINGS,** Alin Ionut Brezeanu, Alexandru Serban, Gabriel Nastase, George Dragomir, Alexandru Mihai Bulmez, Transilvania University of Brasov, Romania709
- 90. THERMAL COMFORT ASSURANCE IN HISTORICAL BUILDINGS STUDY CASE FOR TOURING FACILITY,** Paula Tudor, Diana Tutica, Sorin Cristian Ionescu, Victor-Eduard Cenusu, Mihaela Carmen Grigore, University Politehnica of Bucharest, Romania717
- 91. USING NON-INVASIVE GEOPHYSICS TECHNOLOGIES FOR THE TASK OF PRESERVING OBJECTS OF HISTORICAL AND ARCHITECTURE VALUE,** Prof. Dr. Zakhar Slepak, Kazan (Volga Region) Federal University, Russia.....725

SECTION GREEN DESIGN AND SUSTAINABLE ARCHITECTURE

- 92. A PARAMETRIC GREEN ARCHITECTURE IN URBAN SPACE. A NEW APPROACH TO DESIGN ENVIRONMENTAL-FRIENDLY BUILDINGS,** Karol G. Kowalski, Krystyna Januszkiewicz, West Pommeranian University of Technology, Poland735

93. AERODYNAMIC SIMULATIONS OF THE HIGH-RISE BUILDING'S ROOF USED AS A SOCIAL PLACE, Ing. Roland Antal, Prof. Ing. Norbert Jendzelovsky PhD., Slovak University of Technology in Bratislava - Faculty of Civil Engineering, Slovakia.....	743
94. AN UNDERPASS UNDER THE KASPROWY WIERCH MOUNTAIN IN THE TATRA NATIONAL PARK AS A PART OF AN ENVIRONMENT PROTECTION SCHEME AND IMPROVEMENT OF TOURIST SAFETY, Krzysztof Krauze, Lukasz Boloz, Tomasz Wydro, AGH University of Science and Technology, Poland.....	751
95. APPLICATION OF AUTOMATIC CAR PARKS AS A METHOD OF OBTAINING A BIOLOGICALLY ACTIVE SURFACE IN A HOUSING ESTATE, Anna Lower, Agnieszka Szumilas, Wroclaw University of Science and Technology, Poland.....	759
96. APPLICATION OF THE ARTIFICIAL INTELLIGENCE IN THE ENERGY SOLVING OF BUILDING SERVICES OF INTELLIGENT BUILDINGS AREAS, Assoc. Prof. DSc. Bohumir Garlik, Eng. et Eng. Pavel Hlavacek, CTU in Prague-Faculty of Civil Engineering, Czech Republic	767
97. ASSESSMENT AND OPTIMIZATION OF INDOOR ENVIRONMENT IN TERMS OF HYGRO-THERMAL MICROCLIMATE, Ing. Michal Kraus, Ph.D., The Institute of Technology and Business in Ceske Budejovice, Czech Republic.....	777
98. BUILDING BRIDGES BETWEEN EDUCATION AND GREEN GROWTH DEMANDING INDUSTRIES, Rasa Viederyte, Klaipeda University, Lithuania.....	785
99. CLIMATE CHANGE INFLUENCE ON ECO-REACTIVE ARCHITECTURAL PERFORMANCE, Prof. Sc. PhD Eng. of Architecture Zbigniew Wladyslaw Paszkowski, PhD Eng. of Architecture Jakub Ignacy Golebiewski, Msc. Eng. of Architecture Katarzyna Elzbieta Krasowska, PhD, West Pommeranian University of Technology, Poland.....	795
100. COMBINING GREEN ROOFS AND RENEWABLE ENERGY – THE PHOTOVOLTAIC ROOFTOP GARDEN, Stefan Sattler, PhD Doris Oesterreicher, Irene Zluwa, University of Natural Resources and Life Sciences - Vienna, Austria	803
101. CONCRETE PREFABRICATED ELEMENTS IN A SUSTAINABLE RESIDENTIAL, MULTI-FAMILY HOUSING., Dr Pawel Mika, Cracow University of Technology, Poland.....	811
102. DIVERSITY AND DISTRIBUTION OF WOODY SPECIES IN A PERI-URBAN AREA OF TIMISOARA CITY (ROMANIA). A CASE STUDY - GIROC	

COMMUNE , Lecturer Alina Maria Tenche-Constantinescu PhD, Prof. Gheorghe Florian Borlea PhD, Assoc. Prof. Cornelia Hernea PhD, Prof. Silvica Oncia PhD, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara, Romania	819
103. “URBAN ACUPUNCTURE”: DUAL SPACES AS A STRATEGY FOR URBAN RESILIENCE, Dr Anna Porebska, Prof. Paola Rizzi, Cracow University of Technology, Poland.....	827
104. ECO-BUILDINGS SUSTAINABLE DESIGN IN LINKAGE WITH REMOTE SENSING AND UNDERGROUND URBAN AGRICULTURE , Justyna Kobylarczyk, Ewa Glowienka, Jan W. Dobrowolski, Slawomir Mikrut, Kielce University of Technology, Poland.....	835
105. ECOLOGY AS AN ICON OF THE CONTEMPORARY DEVELOPMENT OF METROPOLISES , Boguslaw Podhalanski, Cracow University of Technology, Poland.....	845
106. ENVIRONMENTAL QUANTITY SURVEY FOR BUILDINGS GPP REQUIREMENTS , Prof. Manuela Rebaudengo Prof. Fabio Manzone Prof. Carlo Caldera Prof. Francesco Prizzon, Politecnico di Torino, Italy	853
107. MUNICIPAL SUSTAINABLE DEVELOPMENT GOVERNANCE INDICATOR SYSTEM INNOVATION: INTRODUCTION AND ASSESSMENT , Janis Kaulins, University of Latvia, Latvia	861
108. EVOLUTION AND PROBLEMS CONCERNING THE DEVELOPMENT OF TIMISOARA METROPOLITAN AREA (ROMANIA). A CASE STUDY - GIROC COMMUNE , Assoc. Prof. Szekely Gabriel PhD, Lecturer Alina Maria Tenche-Constantinescu PhD, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara, Romania	871
109. MANAGEMENT OF THE GRASSLANDS SURFACES FOR A BETTER FARMING AND LANDSCAPE PROTECTION. A DESCRIPTIVE CASE IN BANAT PLAIN ROMANIA , Samfira Ionel, Barliba Costel, Butnariu Monica, Banat s University of Agricultural Sciences and Veterinary Medicine from Timisoara, Romania.....	881
110. GREEN BIM – A LEAN METHODOLOGY TO SUPPORT SUSTAINABILITY ASSESSMENT PROTOCOLS , Assoc. Prof. Dr. Fulvio Re Cecconi, Dr. Lavinia Chiara Tagliabue, Dr. Sebastiano Maltese, Full Prof. Dr. Angelo Luigi Camillo Ciribini, Assoc. Prof. Dr. Iva Kovacic, Politecnico di Milano, Italy	889
111. GREEN MOORING LOCATION FOR BOATS , Assoc. Prof. Modiga Alina, Assoc. Prof. Popescu Gabriel, University "Dunarea de Jos", Romania	897

112. IMPACT INDOOR AIR QUALITY ON PRODUCTIVITY AND PERFORMANCE , Ing. Michal Kraus, Ph.D. and prof. Ing. Ingrid Juhasova Senitkova, CSc., The Institute of Technology and Business in Ceske Budejovice, Czech Republic.....	905
113. IMPROVING ENVIRONMENTAL AWARENESS THROUGH ENVIRONMENTAL DESIGN FOR SUSTAINABLE DEVELOPMENT , Deniz Deniz, Izmir University of Economics, Turkey	913
114. IOT, SMART ENERGY SYSTEMNS, PERSONAL DATA AND ENCRYPTION IN THE GDPR , Mihail Mateev, University of Architecture Civil Engineering and Geodesy, Bulgaria	921
115. KINETIC PRINCIPLES OF DYNAMIC ARCHITECTURE AND HOUSING , Architect Konstantin Krundyshev, Architect Ethan Haezrahi, Assoc. Prof. Dr. Boris Krundyshev, Central Research and Design Institute for Residential Construction, Russia.....	929
116. MEDICALLY SOCIAL INSTITUTION FORMATION FACTORS , Assoc. Prof. Dr. Boris Krundyshev, Architect Grigoriy Krundyshev, Mining University of Saint Petersburg, Russia	937
117. NON-ANTHROPOCENTRIC TYPOLOGY IN THE CONTEXT OF THE DUNA BIRD OBSERVATORY , Mgr. art. Martin Uhrík, PhD. Ing. arch. Tibor Varga, PhD, Slovak University of Technology - Faculty of Architecture, Slovakia	945
118. OLYMPIC VILLAGE SUSTAINABLE DESIGN AND ARCHITECTURAL ADAPTATION TO THE POST-OLYMPICS PERIOD , Architect Konstantin Krundyshev Architect Ethan Haezrahi, Central Research and Design Institute for Residential Construction, Russia.....	953
119. REGARDING THE INVESTIGATION OF ECO COMMUNITIES WITH DYNAMIC MATHEMATICS MODELS , PhD. Eng. Math. Bogdan Cioruta, Assoc. Prof. Dr. Eng. Mirela Coman, Technical University of Cluj-Napoca, Romania.....	959
120. RESEARCH OF MODERN METHODS OF CONSTRUCTION BASED ON WOOD IN THE CONTEXT OF SUSTAINABILITY , Jozef Svajlenka, Maria Kozloska, Technical University of Kosice, Slovakia.....	965
121. RESEARCH OF OPTIMAL INTEGRATION OF BUILDING INTEGRATED PHOTOVOLTAIC SYSTEMS FOR ONE FAMILY HOUSES FOR ROMANIA, TIMISOARA , Ionut Ciprian Maties, Miodrag Popov, Smaranda Bica, Daniel Grecea, Politehnica University Timisoara, Romania.....	975

122. SHAPING A NEW ARCHITECTURAL ENVIRONMENTALLY FRIENDLY FORM AT THE STAGE OF TRANSFORMING EXISTING BUILDINGS, Janusz Juraszek, Hubert Walusiak, Konrad Sikora, University of Bielsko-Biala, Poland	983
123. SOCIAL AND ENVIRONMENTAL CONFLICTS SURROUNDING THE CONSTRUCTION OF A ROAD INTERSECTING NATURA 2000 NETWORK SITES – A CASE STUDY OF THE AUGUSTÓW BYPASS, Katarzyna Kocur-Bera, Karolina Biala, University of Warmia and Mazury, Poland	991
124. STUDY OF DEPENDENCE BETWEEN BIOLOGICALLY ACTIVE AND HARDENED SURFACE WHEN USING VARIOUS METHODS OF PARKING IN THE CITY, Agnieszka Szumilas, Wroclaw University of Science and Technology, Poland	999
125. SUPPORTING OF POST-INDUSTRIAL AREA MANAGEMENT, Barbara Bialecka, Anna Skalny, Central Mining Institute (GIG), Poland.....	1005
126. SUSTAINABILITY IN CULTURAL TOURISM AND HERITAGE CONSERVATION IN THE CASE OF VERNACULAR HOUSES IN DIYARBAKIR, TURKEY, Mucahit Yildirim, Dicle University, Turkey.....	1013
127. SUSTAINABLE ARCHITECTURE OF INDUSTRIAL AREA, Janusz Juraszek, Hubert Walusiak, University of Bielsko-Biala, Poland.....	1021
128. THE ARCHITECTURE OF DAYLIGHT IN THE DISCOURSE ABOUT THE AESTHETICS OF SUSTAINABILITY, Malgorzata Roginska-Niesluchowska, Gdansk University of Technology, Poland	1031
129. THE IMPACT OF LAND-USE ON THE SOCIAL AND ECOLOGICAL SYSTEMS IN COURTYARDS OF LARGE SCALE HOUSING ESTATES., Alisa Korolova, Dr. arch. Prof. Sandra Treija, Riga Technical University, Latvia	1039
130. THE ROLE OF GREEN ROOFS TO MITIGATE URBAN HEAT ISLAND EFFECT, Sarka Konasova, Czech Technical University in Prague, Czech Republic	1047
131. THE SELECTED ASPECTS OF THE MICROCLIMATE CHANGE INSIDE THE SACRAL BUILDINGS CAUSED BY THE HEAT EMISSION FROM PEOPLE, Pawel Albert Jelec, Cardinal Stefan Wyszynski University in Warsaw, Poland.....	1055
132. THE UTILIZATION OF INSTRUMENT BALANCED SCORECARD FOR FACILITY MANAGEMENT, Veronika Roudna, M.Sc. et M.Sc., Assoc. Prof. Alena Ticha, M.Sc., Ph.D., Zdenek Tichy, M.Sc., Dana Linkeschova, M.A., Ph. D, Eva Oslikova, M.Sc., Brno University of Technology Faculty of Civil Engineering, Czech Republic.....	1063

- 133. THERMAL PERFORMANCE OF INSULATED METAL PANEL SYSTEMS**, Assoc. Prof. Ligia Moga, Prof. Ioan Moga, Assist. Ancuta Abrudan, Prof. Florin Babota, Assist Prof. Assoc. Prof. Constantin Munteanu, Technical University of Cluj-Napoca, Romania.....1073
- 134. TRANSFORMATIONS OF OLD HOSPITAL AREAS – VALORIZATION OF HEALING GARDEN VALUES**, Katarina Kristianova, Silvia Basova, Slovak University of Technology - Faculty of Architecture, Slovakia1079
- 135. UPCOMING OF “ARCHITECTURAL GERONTOLOGY”**, Assoc. Prof. Dr. Boris Krundyshev, Mining University of Saint Petersburg, Russia1087
- 136. URBAN AGRICULTURAL LANDSCAPES OF POLISH CITIES ON SELECTED EXAMPLES – THE INTRODUCTION.**, Dr ing. arch. Justyna Kleszcz, University of Zielona Gora - Faculty of Civil Engineering Architecture and Environmental Engineering, Poland.....1095
- 137. URBANIZATION IN PROTECTED LANDSCAPE AREAS IN THE CZECH REPUBLIC AND ITS INFLUENCE ON THE ARCHITECTURAL AND URBAN VALUE OF SETTLEMENTS**, Daniela Stegerova, Czech Technical University in Prague, Czech Republic.....1103
- 138. THE SUSTAINABLE DEVELOPMENT OF AGRICULTURE IN THE CONTEXT OF ROMANIA'S ACCESSION TO THE EUROPEAN UNION**, Drd. Jordan Cristian Bradut, Prof. Cristea Stelica, Assoc. Prof. Dr. Marcuta Liviu, Assoc. Prof. Dr. Marcuta Alina.....1111
- 139. 5 ROUNDABOUTS FOR 5 LANDSCAPES: PROJECT FOR URBAN RIQUALIFICATION**, Assist. Prof. Dr. Minelli A., Dr. Pasini I.....1119

SECTION ANIMALS AND SOCIETY

- 140. ASPECTS OF THE HUMAN-ANIMAL RELATIONSHIP FOR VETERINARY MEDICINE’ STUDENTS: CASE STUDIES**, Dr. Samfira Elena-Mirela, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara, Romania.....1129
- 141. ASSESSMENT OF ENERGETIC PROFILE OF EUROPEAN MOUFLON (OVIS MUSIMON L.) FROM A GAME RESERVE**, Terezia Posivakova, Katarina Veszels Lakticova, Maria Vargova, Ladislav Takac, Jana Takacova, University of Veterinary Medicine and Pharmacy in Kosice, Slovakia1137
- 142. CASES OF MELANISM IN MAMMALS OF YAKUTIA (EASTERN SIBERIA, RUSSIA)**, Gennady G. Boeskorov, Marina V. Shchelchkova, Vladimir N. Vinokurov, North-East Federal University, Russia.....1145

143. THE INFLUENCE OF SUBCLINICAL MASTITIS ON THE FAT-SOLUBLE VITAMINS AND PROVITAMINS IN COW'S MILK, Florica Cola, Mugurel Cola, University of Craiova, Romania.....1153