

# **18th International Multidisciplinary Scientific GeoConference (SGEM 2018)**

Energy and Clean Technologies

Extended Scientific Sessions

SGEM International Multidisciplinary Scientific GeoConference  
Volume 18, Issue 4.3

Vienna, Austria  
3 - 6 December 2018

ISBN: 978-1-5108-8169-3

**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© (2018) by International Multidisciplinary Scientific GeoConferences (SGEM)  
All rights reserved.

Printed by Curran Associates, Inc. (2019)

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](mailto: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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

---

**CONFERENCE PROCEEDINGS CONTENTS****NUCLEAR TECHNOLOGIES**

---

**1. HYGRIC PROPERTIES OF CONCRETE CASING FOR RADIOACTIVE WASTE DEPOSITION**, Prof. Petr Konvalinka, Assoc. Prof. Eva Vejmelková, M.Eng. Lenka Scheinherrová, M.Eng. Magdaléna Doleželová, Dr. Petr Bezdička, Czech Technical University in Prague, Faculty of Civil Engineering, Experimental Centre, Czech Republic.....3

**2. REDUCTION OF THE GEODYNAMIC RISK IN THE DISPOSAL OF RADIOACTIVE WASTE IN GEOLOGICAL FORMATIONS**, Dr. Viktor Tatarinov, Dr. Vladimir Kaftan, Prof. Vladislav Morozov, Prof. Eugenie Kamnev, Tatiana Tatarinova, Geophysical Center of RAS, Moscow, Russia..... 11

**RECYCLING**

---

**3. AGROSMARTGEL FROM ORGANIC BIOCOMPOSITES**, Zainescu Gabriel, Meghea Aurelia, Manea Ana-Maria, Constantinescu Roxana, National R&D Institute for Textile and Leather - Division Leather and Footwear Research Institute, Romania.....21

**4. CHEMICAL AND MICROMORPHOLOGICAL CHARACTERISTICS, BIOTOXICITY AND PLANT STIMULATING PROPERTIES OF THE BIOCHAR OBTAINED AT DIFFERENT TEMPERATURES OF PYROLYSIS**, A. Gordeev, D. Vasserman, PhD P. Galitskaya, Prof. Dr S. Selivanovskaya, Kazan (Volga region) Federal University (KFU), Russia .....27

**5. ECOLOGICAL ASPECTS OF SANITARY CONDITIONS IN UNDERGROUND MINING**, PhD Student, MSc. Eng. Dorota Palka, Silesian University of Technology, Poland.....35

**6. EQUIPMENT FOR RECYCLING OF SPOIL AND DEMOLITION WASTE**, Ing. Jiří Machač, Assoc. prof. Ing. Jiri Fries, Ph.D., Ing. Milan Majer, Ing. Lukáš Kudrna, VŠB-Technical University of Ostrava, Department of Production Machines and Design, Czech Republic .....45

**7. GREEN ECONOMY PROJECT MANAGEMENT CASES**, Prof. Ass. Dr. Ibrahim Krasniqi, Msc.C. Rrezarta Hajdaj, Corresponding author, University Haxhi Zeka in Peja, Kosovo.....55

**8. HYDRAULIC CONDUCTIVITY OF COAL MINE TAILINGS**, Dr. Bartłomiej Olek, Assoc. Prof. Dr. Elżbieta Pilecka, Cracow University of Technology, Poland .... 63

**9. MANAGEMENT OF WASTES FROM ENERGY INDUSTRY IN THE FRAME OF CIRCULAR ECONOMY ON THE EXAMPLE OF MICROSPHERES**, Agata Wajda, Silesian University of Technology, Poland.....71

- 10. POLYMER COMPOSITIONS FROM LEATHER FIBERS (LEATHER SHAVINGS) FOR MORTAR IN CONSTRUCTIONS**, Gabriel Zainescu, Viorica Deselnicu, Roxana Constantinescu, INCDTP - Division: Leather and Footwear Research Institute, Romania.....79
- 11. PROMOTING SUSTAINABLE DEVELOPMENT THROUGH ECO LABELLED PRODUCTS, STUDY CASE FOR SOME CONSUMER PRODUCTS**, Assoc. Prof. Dr. Eugenia Țigan, Lect. Dr. Simona Gavrițaș, Assoc. Prof. Dr. Oana Brînzan, Assoc. Prof. Dr. Monica Lungu, Assoc. Prof. Dr. Anda Ioana Milin, "Aurel Vlaicu" University of Arad, Faculty of Food Engineering, Tourism and Environmental Protection, Romania.....87
- 12. PYROLYSIS OF POLYETHYLENE IN THE LABORATORY CONDITIONS**, Ing. Mgr. Monika Ticha, Prof. Ing. Vojtech Dirner, CSc., Assoc. Prof. Dr. Ing. Radmila Kucerova, Ing. Klara Ossova, Ing. Monika Szturcova, VŠB – Technical University of Ostrava, Czech Republic .....97
- 13. RECYCLING OF NATURAL STONE WASTES OF WORKSHOPS IN KAHRAMANMARAŞ/TURKEY AS MINERAL PLASTER**, Assoc. Prof. Dr. Tamer Rızaoğlu, MSc Student Canberk Çoşkun, PhD Student Dorota Palka, Kahramanmaraş Sütçü İmam University, Faculty of Eng&Arc., Dept. Geology, Turkey.....103
- 14. REUSE OF CERAMICS FOR HEAVY METALS REMOVAL FROM WASTEWATERS: SORPTION AND STABILIZATION**, Martin Keppert, Barbora Doušová, Czech Technical University in Prague, Czech Republic.....111
- 15. SUSTAINABLE RECOVERY OF PHOSPHORUS COMPOUNDS FROM SEWAGE SLUDGE IN THE CIRCULAR ECONOMY APPROACH**, Agata Wajda, Tomasz J. Jaworski, Silesian University of Technology, Poland .....119
- 16. THE ACTION OF NITRIC ACID ON LIGNIN IN A WATER–DIMETHYL SULFOXIDE MIXTURE**, Assoc. Prof. Viacheslav Veshnyakov, MSc Student Muminjon Yokubjanov, Full Prof. Dr. Yuriy Khabaro, Northern Arctic Federal University, Russia.....127
- 17. THE IMPORTANCE OF TESTING WASTE MATERIALS FOR APPLICATION IN MODERN BUILDING COMPONENTS**, Dr. Eva Terpakova, Ph.D., Technical University of Kosice - Faculty of Civil Engineering, Slovakia.....135
- 18. VALORIZATION OF MARINE ALGAE WASTE BIOMASS LOADED WITH ESSENTIAL METAL IONS IN REMEDIATION OF ANTHROPOLOGICALLY DEGRADED SOILS**, Ph.D. Iulia Simona Bădescu, Prof. Dumitru Bulgariu, Ph.D. Alina Roxana Lucaci, Assoc. Prof. Dr. Laura Bulgariu, Technical University of Iasi, Romania.....141

---

**AIR POLLUTION AND CLIMATE CHANGE**

---

- 19. AGRICULTURAL RECLAMATION OF THE STERILE DUMPS RESULTING FROM SURFACE MINING OF LIGNITE**, Dr. Marin Nicoleta, Dr. Vrinceanu Andrei, Dr. Lacatusu Anca-Rovena, Dr. Sirbu Carmen, Dr. Dumitru Mihail, ICPA BUCHAREST, Romania..... 151
- 20. ANALYSIS OF DECOUPLING ECONOMIC GROWTH FROM MATERIAL AND ENERGY USE FOR SEVERAL EU COUNTRIES**, Ph. D., M. Sc. Eng. A. Bluszcz, Silesian University of Technology, Poland ..... 157
- 21. ANALYSIS OF DYNAMICAL AND CHEMICAL PROCESSES WHICH FORM ATMOSPHERIC COMPOSITION OVER BULGARIA**, Assist. Prof. Dr. Ivelina Georgieva, Assoc. Prof. Dr. Georgi Gadzhev, Prof. DSc. Kostadin Ganey, Prof. DSc. Nikolay Miloshev, National Institute of Geophysics Geodesy and Geography, Bulgaria ..... 167
- 22. ANALYSIS OF THE SELECTED PROPERTIES OF THE SURFACE LAYER OF ALUMINUM ALLOY 2024 AFTER LASER BEAM IMPACT IN THE ENVIRONMENTAL CONTEXT**, Dr. Eng. Barbara Ciecinska, Assoc. Prof., DSc. Eng. Tomasz Wiecek, Dr. Leszek Pyziak, Dr. Eng. Andrzej Dzierwa, Dr. Eng. Kazimiera Dudek, Rzeszow University of Technology, Poland..... 181
- 23. ASSESSMENT OF POLYAROMATIC HYDROCARBONS IN THE SURFACE SOILS OF AN URBAN AREA**, Assoc. Prof. Dipl. Eng. Vladimir Adamec, Ph.D., Dipl. Eng. Barbora Schüllerova, Ph.D., Dr. Zbynek Vecera, Ph.D., Brno University of Technology, Czech Republic ..... 189
- 24. AUGMENTED AND VIRTUAL REALITY APPLICATION IN DISASTER PREPAREDNESS TRAINING FOR SOCIETY RESILIENCE**, Prof. Dr. Dimitar Velez, Assoc. Prof. Dr. Plamena Zlateva, University of National and World Economy, Bulgaria ..... 195
- 25. CLIMATE AND ANTHROPOGENIC IMPACT FOR THE OB AND THE LENA RIVERS**, Assoc. Prof. Dr. Irina Fedorova, Elena Shestakova, Prof. Dr. Evgeniy Abakumov, Andrey Budro, Evgeniya Morgun, Saint Petersburg State University, Russia ..... 203
- 26. COMPARATIVE ANALYSIS CONCERNING THE AMOUNT OF METHANE RELEASED INTO THE ATMOSPHERE AND COLLECTED BY HARD COAL MINES IN POLAND**, Ph.D. Magdalena Tutak, Silesian University of Technology, Poland..... 211
- 27. CONVERSION OF SO<sub>2</sub> DURING PRESSURIZED OXY-FUEL COMBUSTION**, Dr. Janusz Lasek, Assoc. Prof. Dr. Jarosław Zuwała, Institute for Chemical Processing of Coal, Poland ..... 221

- 28. DAMAGING BY TRIBO-FATIGUE AND TEST RIG DESIGN**, Assist. PhD. Student Costel Humelnicu, Assist. PhD. Student Valentin Amortila, PhD. Student Mihai Gingarasu, Prof. Dr. Eng. Elena Mereuta, Dunarea de Jos University of Galati, Romania.....235
- 29. DECISION-MAKING POSSIBILITIES IN THE FIELD OF EXCAVATED MATERIAL QUALITY SHAPING IN TERMS OF ENVIRONMENTAL PROTECTION, I. E. HOW TO BE GREENER IN MINING**, MSc. Kinga Stecuła PhD Eng. with habilitation Jarosław Brodny, Silesian University of Technology, Poland .....243
- 30. DRIVER’S BIOMECHANICS INFLUENCE ON AIR POLLUTION**, Assist. PhD. Student. Eng. Valentin Amortila, Prof. Dr. Eng. Elena Mereuta, Assist. PhD. Student. Eng. Costel Humelnicu, PhD. Student. Mihai Gingarasu, Dunarea de Jos University of Galati, Romania.....251
- 31. ENVIRONMENTAL CRITERION IN THE ASSESSMENT OF INTEGRATED URBAN PUBLIC TRANSPORT**, PhD Katarzyna Solecka, Cracow University of Technology-Faculty of Civil Engineering, Poland .....259
- 32. ENVIRONMENTAL PROTECTION ACTIVITY EXPERIENCE OF THE RUSSIAN MINING AND PROCESSING ENTERPRISE «APATIT»**, Ph.D in Biology sciences Alla Anatolievna Trotsenko, Ph.D in Pedagogic sciences Natalija Valerievna Erokhova, Ph.D in Pedagogic sciences Alexandrova Evgenia Yu., Murmansk Arctic State University, Russia .....271
- 33. FERTILIZERS WITH ORGANIC SUBSTANCES AND AGROCHEMICAL EFFECTS**, Dr. Sirbu Carmen, Dr. Cioroianu Traian, Dr. Nicoleta Marin, Dr. Dumitru Mihail, Dr. Grigore Adriana, INCDPAPM-ICPA BUCURESTI, Romania .....281
- 34. HOW TO CREATE THE CITY AREAS LOCATED NEAR THE AIRPORT INCLUDING THE RAPID AGLOMERATION RAILWAY SYSTEM**, PhD Aleksandra Faron, MSc Joanna Kita, Cracow University of Technology, Poland .....291
- 35. IMPACT OF AIR POLLUTION ON HEAVY METALS CONTENT OF HONEY**, Prof. DSc. Hortensia Rădulescu, PhD. Oana Ciobanu, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara - Faculty of Agricultural Management, Romania .....301
- 36. INFLUENCE OF TEMPERATURE PARAMETERS ON THE PRODUCTION OF FINE PARTICLE DISTRIBUTION DURING THE BIOMASS COMBUSTION**, Dipl. Eng. Barbora Schullerova, Ph.D., Dipl. Eng. Jan Polacik, Assoc. Prof., Dipl. Eng. Vladimir Adamec, Ph.D., Dipl. Eng. et Dipl. Eng. Kristyna Hrabova, Assoc. prof., Dipl. Eng. Jiri Pospisil, Ph.D., Brno University of Technology, Czech Republic.....307

- 37. LONG-TERM VARIABILITY OF METEOROLOGICAL ELEMENTS AND THEIR INFLUENCE ON THE SAFETY OF CARRYING OUT THE FLIGHT OPERATIONS IN THE SZCZECIN – GOLENIÓW AIRPORT**, Dr Małgorzata Kirschenstein, Mgr Robert Ambroziak, Inż. Katarzyna Kut, Polish Air Force University, Poland .....315
- 38. METHODS FOR DETERMINATION OF AIR TEMPERATURE WITH THE USE OF METEOROLOGICAL DATA FROM STATION DĘBLIN-IRENA**, Dr. Małgorzata Kirschenstein, Dr. Krzysztof Cur, Msc Ing. Kamil Krasuski, Air Force Academy Poland, Poland.....323
- 39. PALEOLOMNOLOGICAL INVESTIGATIONS OF LAKE BOLSHOE MIASSOVO (CHELYABINSK REGION, RUSSIA)**, Prof. Dr. Danis Nurgaliev, Assistant Dilyara Kuzina, Assistant Lina Kosareva, Dr. Pavel Krylov, Engineer Vadim Antonenko, Kazan (Volga Region) Federal University, Russia.....331
- 40. POLYCYCLIC AROMATIC HYDROCARBONS IN THE SNOW OF MOSCOW AS AN INDICATOR OF THE ROAD TRANSPORT IMPACT (RUDN CAMPUS CASE STUDY)**, Prof. Dr. Alexander Khaustov, M. Sc. Polina Silaeva, Assoc. Prof. Dr. Margarita Redina, Dr. Roman Mamadzhanov, Peoples Friendship University of Russia - Ecological Faculty, Russia .....339
- 41. PRODUCTION EVOLUTION FOR THE MAIN AGRICULTURAL CROPS FROM THE CENTRAL BANAT AREA UNDER THE INFLUENCE OF THE MAIN PATHOGENS AND PEDOCLIMATIC CONDITIONS**, Assist. Prof Dr. Adalbert Okros, Prof. Dr. Adrian Borcean, Assoc. Prof. dr. Mircov Vlad Dragoslav, Assist. Prof dr. Mihaș Casiana, Ec. Botoș Florentina Nicoleta, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara, Romania .....347
- 42. REHABILITATION BY NATURAL MITIGATION OF THE POLLUTED SOILS WITH HEAVY METALS FROM ZLATNA AREA**, Prof. Dr. d.h.c. Mihail Dumitru, Dr. Nicoleta Marin, Dr. Andrei Vrinceanu, Dr. Alexandrina Manea, ICPA - Bucuresti, Romania .....357
- 43. REMEDIATION OF DEGRADED MINING AREAS WITH PLANTS**, Lecturer Dr.Camelia Slave, Lecturer Dr. Diana Vască Zamfir, University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania .....367
- 44. SAFETY IN THE HANDLING OF PLANT PROTECTION PRODUCTS ON FARMS IN THE CENTRAL PART OF LATVIA**, Dr. Linards Sisenis, Mg. Dace Brizga, Prof. Irina Pilvere, Dr. Jānis Gailis, Mg. Silva Senhofa, Latvia University of Life Science and Tehnologies, Latvia .....375
- 45. SEISMIC AND MAGNETO-MINERALOGICAL INVESTIGATIONS LAKE MALOE MIASSOVO (SOUTH URAL, RUSSIA)**, Assistant Lina Kosareva, Assistant Dilyara Kuzina, Prof. Dr. Danis Nurgaliev, Dr. Pavel Krylov, Engineer Vadim Antonenko, Kazan (Volga Region) Federal University, Russia.....383

- 46. THE ANALYZE OF AREAS AFFECTED BY DROUGHT USING VCI FOR AREAS WHERE WAS NOTICE VERTICAL DISPLACEMENT: A CASE STUDY OF IASI COUNTY**, PhD student Eng. Paul Macarof, PhD student Eng. Cristian-Iulian Birlica, PhD student Eng. Cezarina Georgiana Bartic, Professor Dr. Eng. Florian Statescu, Technical University of Iasi, Romania .....391
- 47. THE CASE STUDY OF CUTTING OF THE POLYPROPYLENE AND ITS COMPOSITE WITH TALC WITH THE CO2 LASER USAGE**, Assoc. Prof., DSc. Eng. Tomasz Wiecek, Dr. Eng. Barbara Ciecinska, Dr. Leszek Pyziak, Dr. Eng. Lukasz Bak, Rzeszow University of Technology, Poland.....399
- 48. THE INFLUENCE OF METEOROLOGIC CONDITIONS DURING THE PERIOD 2015-2017 ON THE PRODUCTION OF THE MAIN AGRICULTURAL CROPS FROM THE NORTHERN PART OF BANAT**, Assoc. Prof. dr. Mircov Vlad Dragoslav, Prof. Dr. Adrian Borcean, Assist. Prof. Dr. Adalbert Okros, Assist. Prof dr. Antoanela Cozma, Assist. Prof. Mihut Casiana, University of Agronomic Sciences and Veterinary Medicine Timisoara, Romania.....407
- 49. THE INFLUENCE OF AIR TEMPERATURE CONDITIONS AND THEIR CHANGES ON THE MORTALITY IN POLAND**, Małgorzata Falarz, University of Silesia - Faculty of Earth Sciences, Poland .....415
- 50. THE VERTICAL PROFILE OF TROPOSPHERE PARAMETERS ABOVE THE AIRPORT IN DEBLIN**, Dr. Małgorzata Kirschenstein, Dr. Krzysztof Cur, Msc Ing. Kamil Krasuski, Air Force Academy Poland, Poland.....425
- 51. THE U-MOB LIFE PROJECT AND ITS ACTIVITIES TO REDUCE CO2 EMISSION FROM UNIVERSITY MOBILITY**, Dr. Katarzyna Nosal Hoy, Isabel Dominguez Perello, Silvia Pascual Jimeno, Cracow University of Technology, Poland.....433
- 52. VARIABILITY AND CAUSALITY OF PARTICULATE MATTER HIGH AIR POLLUTION EPISODES IN URBAN TERRITORY**, MSc Liene Sustere, Assoc. Prof. Dr. Iveta Steinberga, University of Latvia, Latvia.....441
- 53. VERTICAL STRUCTURE OF SOME POLLUTANT OVER BULGARIA - OZONE AND NITROGEN DIOXIDE**, Assoc. Prof. PhD. Georgi Gadzhev, Prof. Dr. Kostadin Ganev, National Institute of Geophysics Geodesy and Geography, Bulgaria .....449

## **MODERN ENERGY AND POWER SOURCES**

---

- 54. ANN BASED MONTHLY POWER CONSUMPTION FORECASTING. CASE STUDY FOR A ROMANIAN ELECTRIC ENERGY DISTRIBUTION OPERATOR**, Assoc. Prof. Dr. Constantin BARBULESCU, Prof. Dr. Stefan KILYENI Assistant Prof. Dr. Antheia DEACU, Lecturer Dr. Attila SIMO, PhD Student Robert NICOLAE, Politehnica University Timisoara, Romania .....457



---

<b>55. COMPARATIVE ANALYSIS REGARDING THE USE OF HYBRID ENERGY GENERATION SYSTEMS FOR RESIDENTIAL BUILDINGS,</b> Prof. Dr. Eng. Gheorghe Badea, PhD Student Eng. Claudiu Oprea, Dr. Eng. Raluca - Andreea Felseghi, Dr. Eng. Andrei Bolboacă, Dr. Eng. Teodora Şoimoşan, Technical University of Cluj-Napoca, Romania.....	465
<b>56. FRUIT AND VEGETABLE WASTE FROM MARKETS AS A SUBSTRATE FOR AGRICULTURAL BIOGAS PLANT,</b> PhD. Eng. Wojciech Czekala, M.Sc. Eng. Marta Cieřlik, PhD. Eng. Damian Janczak, M.Sc. Eng. Agnieszka Czekala, PhD. Eng. Dawid Wojcieszak, Poznan University of Life Sciences, Poland.....	473
<b>57. FUTURE PROJECTION OF THE WIND POWER POTENTIAL FOR THE ROMANIA TERRITORY,</b> Assist. Prof. Dr. Eng. Daniel Ganea, Prof. Dr. Eng. Elena Mereuta, Prof. Dr. Eng. Liliana Rusu, Dunarea de Jos University of Galati, Romania.....	479
<b>58. HEALTH IMPACT ASSESSMENT OF WIND POWER STATION IN INDUSTRIALISED LANDSCAPE,</b> Dr. Ing. Stanislav Bartusek, RNDr. Alexander Skácel, CSc., VSB-Technical University of Ostrava, Czech Republic.....	487
<b>59. INCREASING THE ENERGY VALUE OF CORN STOVER USED IN BIOGAS PLANT WITHOUT PRE-PROCESSING,</b> PhD. Eng. Dawid Wojcieszak, Prof. Dr. Jacek Przybył, PhD. Eng. Jakub Mazurkiewicz, PhD. Eng. Damian Janczak, PhD. Eng. Maciej Zaborowicz, Poznan University of Life Sciences, Poland.....	495
<b>60. LoRaWAN BASED INDUSTRIAL EMISSION MONITORING WITH SELF-FLYINGDRONE,</b> Lecturer Dr. Attila Simo, Associate Professor Dr. Constantin Barbulescu, PhD Student Marin Salinschi, Politehnica University Timisoara, Romania.....	503
<b>61. NUMERICAL SIMULATION OF HEAT TRANSFER IN A SEMI-CYLINDRICAL CAVITY WITH DIFFERENT HEATING MODELS,</b> S. Kherrou, R. Zarrit, L. Boutina, H. Bensaha, Unite de Recherche Appliquee en Energies Renouvelables URAER Centre de Developpement des Energies Renouvelables CDER, Algeria.....	511
<b>62. RAPE OIL VS CAMELINA OIL – A COMPARATIVE STUDY OF THEIR FATTY ACID PROFILE AND THEIR SUITABILITY FOR BIOFUEL PRODUCTION,</b> Bătrîna Ştefan Laurenţiu, Prof. Dr. Popescu Iuliana, Prof. Dr. Imbrea Ilinca, Prof. Dr. Pop Georgeta, Prof. Dr. Imbrea Florin, Banat University of Agricultural Sciences and Veterinary Medicine King Michael I of Romania from Timisoara, Romania.....	519

- 63. RECOMMENDATIONS ON DOBROGEA AREAS, ROMANIA, WHERE THE EOLIEN CENTRALS LOCATION TO BE RESTRICTED FROM THE CAUSE OF BIRDS MIGRATION CORRIDORS**, Associate professor PhD. Raluca Florentina Crețu, Lecturer Petrică Ștefan, Professor PhD. Romeo Cătălin Crețu, University of Agronomic Sciences and Veterinary Medicine in Bucharest, Romania.....527
- 64. REGULATION OF THERMAL REGIME OF COAL MINES IN CRYOLITHIC ZONES**, Prof. Dr. Aleksandr Galkin, dr. Ivan Kurta, Ukhta State Technical University, Russia.....535
- 65. RENEWABLE ENERGY PORTFOLIO AND ROMANIAN POWER MARKET**, Assoc. Prof. Dr.Gheorghe VUC, Assoc. Prof. Dr. Constantin BARBULESCU, Lecturer Dr. Attila SIMO, PhD Student Maria MIHALCEA, Politehnica University Timisoara, Romania.....541
- 66. THE EFFECT OF RECTANGULAR HELIOSTAT SHAPE RATIO ON THE SPIRAL LAYOUT PERFORMANCE OF A SOLAR TOWER THERMAL POWER PLANT**, A.Belaid, Dr. A. Gama, Dr.A. Filali, T. Arrif, Dr.M. Bouakba, Applied Research Unit on Renewable Energies, Algeria.....551
- 67. THE USE OF TAXONOMIC METHODS FOR THE ANALYSIS OF ELECTRICITY GENERATION FROM RENEWABLE ENERGY SOURCES BY THE INDIVIDUAL PROVINCES**, Ph.D. Magdalena Tutak, Silesian University of Technology, Poland.....559
- 68. TRANSMISSION ALLOCATION COSTS CONSIDERING ACTUAL ROMANIAN TARIFF ZONES**, Assistant Prof. Dr. Oana POP, Associate Professor Dr. Constantin BARBULESCU, Prof. Dr. Stefan KILYENI, Lecturer PhD Attila SIMO, PhD Student Robert MESZAROS, Politehnica University Timisoara, Romania .....567
- 69. VULNERABILITY ANALYSIS OF ELECTRICITY NETWORKS FROM NATURAL HAZARDS USING VIRTUAL REALITY**, Prof. Dr. Dimiter Velev, Assoc. Prof. Dr. Plamena Zlateva, University of National and World Economy, Bulgaria .....577
- 70. METHODOLOGY OF COMPOSTING RESEARCH UNDER LABORATORY CONDITIONS**, PhD. Eng. Damian Janczak, PhD. Eng. Mazurkiewicz Jakub, PhD. Eng. Dawid Wojcieszak, PhD. Eng. Artur Bugała, Msc. Eng. Kamil Kozłowski, Poznan University of Life Sciences, Poland.....585