CONFERENCE PROCEEDINGS CONTENTS

RENEWABLE ENERGY SOURCES AND CLEAN TECHNOLOGIES

1. **A SPATIAL ASSESSMENT OF THE ROMANIAN NEARSHORE WIND CONDITIONS,** PhD Alina Girleanu, Prof. Dr. Eugen Rusu, Assoc. Prof. Dr. Florin Onea.....3

2. **A STUDY ON FACTORS AFFECTING THE INTENTION TO USE SMART METERS. EVIDENCE FROM ROMANIA,** PhD Andreea Barbu, Prof. Dr. Gheorghe Militaru, Mirona Popescu, Iustina Cristina Costea- Marcu, Mihaela Ganciu.....11

3. **ADSORPTION CAPACITY, STRUCTURE AND SURFACE PROPERTIES OF NANOPOROUS CARBONS PRODUCED FROM PISTACIA LENTISCUS BY-PRODUCT,** PhD Firas Feki, Assoc. Prof. Dr. Boyko Tsyntsarski, Prof. DSc. Sami Sayadi, Georgi Georgiev, Prof. DSc. Vladimir Dimitrov 19

4. **AN INSIGHT INTO THE ROMANIAN ENERGY MARKET IN THE CONTEXT OF CLIMATE CHANGE AND THE EUROPEAN GREEN DEAL,** PhD Alina Girleanu, Prof. Dr. Eugen Rusu, Assoc. Prof. Dr. Florin Onea.....25

5. **APPROXIMATION OF THE AMPLITUDE CHARACTERISTICS OF PELTIER THERMOELECTRIC MODULES BASED ON CONTINUOUS PIECEWISE LINEAR FUNCTIONS.,** Assoc. Prof. PhD Dmitry Surzhik, Assoc. Prof. PhD Gleb Vasilyev, Prof. Oleg Kuzichkin.....33

6. **BIOETHANOL TRANSFORMATION INTO FUEL RANGE HYDROCARBONS OVER METHAL MODIFIED H-ZSM-5 ZEOLITE,** Prof. Dr. Valentin Doluda, Assoc. Prof. Natalia Lakina, PhD Roman Brovko, PhD Lev Mushinsky 41

7. **CHEMICAL BONDS ON THE IMPACT OF THE SPLITTING PROCESS IN A THERMAL MACHINE (ENGINE),** Assoc. Prof. PhD Piotr Kardasz.....47

8. **CONSTRUCTION AND TECHNICAL CONDITION OF SEWER NETWORKS IN THE CZECH REPUBLIC,** Assoc. Prof. Petr Hlustik, Veronika Singrova.....53

9. **DEVELOPMENT OF TECHNOLOGY FOR PRODUCING THE TITANIUM TRICHLORIDE,** Assoc. Prof. Evgenii Kuzin, Prof. Natalya Kruchinina, Tatyana Nosova.....61

10. **FACTORS AFFECTING BIOLOGICAL PROCESSES OF WASTEWATER TREATMENT,** Veronika Singrova, Assoc. Prof. Petr Hlustik 69

11. **HYDROCARBON SYNTHESIS FROM FATTY ACID FEEDSTOCK AND STRUCTURE MODIFICATION OF SATURATED AND UNSATURATED CYCLIC COMPOUNDS VIA HYDROTREATMENT OVER RUTHENIUM CATALYST,** PhD Ilze Malina, PhD Kristaps Malins, Mihails Strods-Vavilovs 79

12. **INFLUENCE OF SELECTED PARAMETERS ON THE OPERATION OF AN INTERNAL COMBUSTION ENGINE,** Assoc. Prof. PhD Piotr Kardasz 87

13. **MEMBRANE ASSISTED HYDROGEN SYNTHESIS FROM BIOETHANOL,** Assoc. Prof. Natalia Lakina, PhD Stud. Stepan Mikhailov, PhD Stud. Ksenia Salnikova, Prof. Valentin Doluda 97

14. **METAL MODIFIED MFI MEMBRANES FOR HYDROGEN PURIFICATION,** Assoc. Prof. Natalia Lakina, PhD Stud. Roman Brovko, PhD Stud. Margarita Monzharenko, Prof. Valentin Doluda 103

15. **METHANOL TO HYDROCARBONS TRANSFORMATION PROCESS USING MICROSTRUCTURED MONOLYTH CATALYST,** Assoc. Prof. Natalia Lakina, Prof. Valentin Doluda, Roman Brovko, Lev Mushinskiy 109

16. **MODELING THE STABILITY OF AUTOMATIC CONTROL SYSTEMS OF PELTIER THERMOELECTRIC MODULES,** Assoc. Prof. PhD Gleb Vasilyev, Prof. Igor Konstantinov, Prof. Oleg Kuzichkin, Assoc. Prof. PhD Dmitry Surzhik, Assoc. Prof. PhD Natalya Shcherbinina 115

17. **NOVEL SYNTHESIS METHOD OF CARBON MATERIALS FROM REFUSE-DERIVED FUEL,** Georgi Georgiev, PhD Ivanka Stoycheva, Assoc. Prof. PhD Boyko Tsyntsarski, Kalina Miteva, Prof. Mehmet Ferhat Yardim 123

18. **REMOVAL OF ORGANIC SUBSTANCES AND MERCURY IONS BY CARBON MATERIALS FROM REFUSE DERIVED FUEL,** PhD Ivanka Stoycheva, Georgi Georgiev, Assoc. Prof. Dr. Boyko Tsyntsarski, Assoc. Prof. Dr. Rumiana Zaharieva, PhD Angelina Kosateva 129

19. **SHAPING SUSTAINABLE ENERGY SUPPLY SYSTEMS ON REGIONAL LEVEL,** Prof. Dr. Ildiko Tulbure, Marius Berca.....137

20. **SYNTHESIS AND CHARACTERIZAION OF GRAPHITIC CARBON FOAM AND APPLICATION AS ADSORBENT FOR PHENOL,** PhD Ivanka Stoycheva, Assoc. Prof. Dr. Boyko Tsyntsarski, Georgi Georgiev, Prof. DSc. Pavlina Dolashka, PhD Bilyana Petrova 143

21. **THE CIRCULAR ECONOMY MODEL OF WASTEWATER TRANSFORMATION TO RENEWABLE ENERGY,** Alina Rozenvalde, Assist. Prof. Inga Grinfelde, Jovita Pilecka-Ulcugaceva, Dr. Juris Burlakovs, Dr. Modrite Pelse.....149

22. **TRENDS IN THE DEVELOPMENT OF HYDRO ENERGY IN BULGARIA AFTER 1989,** PhD Maria Temelkova, Assoc. Prof. Dr. Marian Varbanov.....159

23. **THE EFFECT OF TEMPERATURE ON METHANOL SYNTHESIS VIA CO_2 HYDROGENATION AT LOW PRESSURE OVER ZnO/CuO/SBA-15/KAOLIN CATALYST,** PhD Zane Sustere, Valdis Kampars, Helle-Mai Piirsoo, Hugo Mandar, Aile Tamm 167

24. **WIND CONDITION ANALYSIS AND PARTIAL REPOWERING CONCEPT FOR FANTANELE – COGEALAC ONSHORE PROJECT,** PhD Victoria Yildirir, Prof. Dr. Florin Onea, Prof. Dr. Victor- Eugen Rusu.....175

RECYCLING

25. **ACTIVATED ASH FILLER BASED ON WASTE FROM THERMAL POWER PLANTS,** Prof. Viktoria Petropavlovskaya, Assoc. Prof. Dr. Tatiana Novichenkova, Assoc. Prof. PhD Kirill Petropavlovskii, Prof. Mikhail Sulman, Assoc. Prof. DSc. Timur Deberdeev 187

26. **APPLICATION OF ASH WASTE IN THE PRODUCTION OF BUILDING MATERIALS,** Prof. Mikhail Sulman, Assoc. Prof. PhD Kirill Chalov, Prof. Yury Kosivtsov, Assoc. Prof. Yury V. Lugovoy, Prof. DSc. Viktoria B. Petropavlovskaya.....193

27. **CERAMIC MATERIALS BASED ON HIGH AMOUNTS OF INDUSTRIAL WASTESE,** Emilia Karamanova, Prof. Alexander Karamanov 199

28. **MAIN WAYS FOR UTILIZATION OF ALUMOSILICATE ASH FROM COAL-FIRED THERMAL POWER PLANTS OF THE RUSSIAN FEDERATION AND ENVIRONMENTAL CONSEQUENCES,** Prof. Dr. Leonid Delitsyn, Prof. Mikhail Sulman, PhD Ruslan Kulumbegov, Assoc. Prof. Dr. Alexander Sidorov, Prof. Yury Kosivtsov 207

29. **MANAGEMENT TOOLS IN PROJECT MANAGEMENT OF THE CONSTRUCTION OF A MODERN FACILITY FOR MUNICIPAL WASTE MANAGEMENT,** PhD Omar Ameir 213

30. **PURIFICATION OF SPENT BREWER'S YEAST FOR OBTAINING BETA GLUCANS: A FACTOR IN THE VALORIZATION OF BY-PRODUCTS AND WASTE REDUCTION,** PhD Ionut Avramia, Prof. Dr. Sonia Amariei.....221

31. **RELATIONSHIP AMONG STRUCTURE, PROPERTIES AND APPEARANCE OF SINTERED GLASS-CERAMICS AND COMPOSITES FROM HAZARDOUS INDUSTRIAL WASTES,** Prof. Dr. Alexander Karamanov, Assoc. Prof. Dr. Ivan Georgiev.....231

32. **SINTERED GLASS-CERAMICS, SELF-GLAZED MATERIALS AND FOAMS FROM METALLURGICAL SLAG,** PhD Nicolai Jordanov, Prof. Dr. Alexander Karamanov.....241

33. **UNBURNED GYPSUM BINDERS BASED ON WASTES FROM FAIENCE PRODUCTION,** Prof. Viktoria Petropavlovskaya, Assoc. Prof. Dr. Tatiana Novichenkova, Assoc. Prof. PhD Kirill Petropavlovskii, Prof. Yury Kosivtsov, Prof. Mikhail Sulman 249

AIR POLLUTION AND CLIMATE CHANGE

34. **AIR PARTICULATE MATTER AND BLACK CARBON CONCENTRATIONS DURING WINTERTIME AT TWO BULGARIAN URBAN SITES,** Assoc. Prof. Dr. Elena Hristova, Assoc. Prof. Dr. Blagorodka Veleva, Stela Naydenova, PhD Lenia Gonsalvesh-Musakova.....259

35. **AMMONIA AND METHANE EMISSIONS FROM DIGESTED MANURE AFTER LAND APPLICATION,** Olga Frolova, Inga Grinfelde, Jovita Pilecka-Ulcugaceva, PhD Laima Berzina 269

36. **ANALYSIS OF THE CALCULATION OF THE STRESS STATE AND THE BEHAVIOR OF CEMENT CONCRETE PAVEMENTS UNDER THE EFFECT OF THERMAL LOADING,** PhD Dominika Hodakova, Assoc. Prof. Andrea Zuzulova, PhD Silvia Capayova, Assoc. Prof. Tibor Schlosser.....277

37. **ASSESSMENT OF CHEMICAL ELEMENTS POLLUTION FROM VEHICLE EMISSIONS: CASE STUDY OF JELGAVA CITY,** Jovita Pilecka-Ulcugaceva, Inga Grinfelde, Kristine Valujeva, PhD Laima Berzina, PhD Oskars Purmalis 285

38. **ASSESSMENT OF THE LONG TERM VARIABILITY OF THE SNOW COVER IN THE VITOSHA MOUNTAIN,** PhD Dimitar Nikolov, PhD Cvetan Dimitrov 295

39. **ATMOSPHERIC DRY DEPOSITIONS IN THE SOUTHERN BULGARIAN BLACK SEA COASTAL AREA DURING SUMMER,** Assoc. Prof. Dr. Emilia Georgieva, Hristina Kirova, Assoc. Prof. Dr. Elena Hristova.....303

40. **CLIMATOLOGY OF EXTREMELY HOT SPELLS IN BULGARIA (1961-2019),** Krastina Malcheva, PhD Liliya Bocheva, Assoc. Prof. Dr. Hristo Chervenkov 311

41. **DEVELOPMENT AND CONSEQUENCES OF GROUND INVERSIONS IN THE REVITALIZED POSTMONTANE LANDSCAPE OF THE MOST BASIN,** David Hirman, Pavel Schmidt, Petr Kunz 319

42. **DEVELOPMENT OF CLIMATE AND AIR POLLUTION CHARACTERISTICS AND THEIR IMPACT ON MINING OPERATIONS AND RECLAMATION WORK IN THE REGION OF NORTHWESTERN BOHEMIA,** Pavel Schmidt, PhD Michal Rehor.....327

43. **DISTRIBUTION AND POLLUTION OF CHEMICAL ELEMENTS IN JELGAVA URBAN ENVIRONMENT,** Jovita Pilecka-Ulcugaceva, Valters Zabelins, Inga Grinfelde, Sindija Liepa, PhD Oskars Purmalis.....335

44. **DUST PROBLEMS IN OPENCAST COAL MINE,** Tomas Hapla, Pavel Novak, Assoc. Prof. Ladislav Kovar.....343

45. **EVALUATING MANIFESTATIONS IN CLIMATE CHANGE OF DANUBE LOWLAND IN SLOVAKIA,** Assoc. Prof. PhD Jan Cimo, Tatijana Kotus, PhD Vladimir Kiss, PhD Janarul Shaikh.....351

46. **EVALUATION OF INDICATORS CONTROLLING APOPTOSIS IN ADULT POPULATION WITH EXCESSIVE ALUMINUM CONTENT IN THE BLOOD,** Prof. Dr. Nina Zaitseva, Prof. Dr. Oleg Dolgikh, Prof. Dr. Dina Dianova, Prof. Dr. Vadim Alekseev, Prof. Dr. Konstantin Luzhesky 359

47. **EVALUATION OF MESO-METEOROLOGICAL MODEL SIMULATIONS OF EXTREME WIND EVENT AT COASTAL REGION,** PhD Damyan Barantiev, Prof. DSc. Ekaterina Batchvarova, Hristina Kirova, Orlin Gueorguiev.....365

48. **FEATURES OF MODERN CHANGES IN ICE CONDITIONS IN THE WESTERN ARCTIC REGION,** Assoc. Prof. PhD Andrey Rubchenya, Boris Shapkin, Assoc. Prof. Dr. Boris Ivanov, Anastasiia Revina 375

49. **GEOECOLOGICAL MAPPING AND SITUATIONAL MODELING OF DUST POLLUTION IN ECOLOGICAL STANDARDIZATION, DUST EMISSIONS CONTROL AND MANAGEMENT,** Prof. DSc. Irina May, Sergey Zagorodnov, ...383

50. **GROUND LEVEL OZONE AT THE SOUTHERN BULGARIAN BLACK SEA COAST FOR A TYPICAL SUMMER MONTH,** Assoc. Prof. Dr. Krum Velchev, Assoc. Prof. Dr. Emilia Georgieva.....391

51. **LOCKDOWN IMPACT ON AMBIENT AIR QUALITY IN THE CONTEXT OF COVID-19 PANDEMIC,** Vasilica Vasile, PhD Cristian Petcu, Alina Dima, Mihaela Ion.....399

52. **ON THE ABATEMENT OF SHIPPING EMISSIONS – A POTENTIAL APPROACH FOR THE BLACK SEA BASIN,** Valerian Novac, Prof. Dr. Eugen Rusu.....407

53. **PRELIMINARY RECONSTRUCTION OF CLIMATE CHANGES AND VEGETATION COVER INFERRED FROM POLLEN STUDY OF THE ARCTIC LAKE BOTTOM SEDIMENTS FROM THE SOUTHWESTERN PART OF THE YAMAL PENINSULA,** Gulnara Nigamatzianova, Niyaz Nigmatullin, Bulat Gareev, Oleg Tumanov, Assoc. Prof. Dr. Larisa Frolova.....415

54. **RECONSTRUCTION OF LACUSTRINE ENVIRONMENTAL EVOLUTION USING RECORDS OF SUBFOSSIL CLADOCERA FROM AN UNNAMED LAKE IN WESTERN SIBERIA (RUSSIA),** Niyaz Nigmatullin, Anastasia Frolova, Gulnara Nigamatzianova, Assoc. Prof. Dr. Larisa Frolova 423

55. **REGIONAL ANALYSIS OF HAIL PRECIPITATION IN BULGARIA,** PhD Liliya Bocheva, Vulcho Pophristov 429

56. **RELATIONSHIP APPRAISAL OF PAHs IN AN URBAN ATMOSPHERIC AEROSOL WITH METEOROLOGICAL CONDITIONS, POLLUTION SOURCES AND OTHER POLLUTANTS,** Stela Naydenova, PhD Anife Veli, PhD Zilya Mustafa, Assoc. Prof. Dr. Elena Hristova, Assoc. Prof. Dr. Lenia Gonsalvesh-Musakova 437

57. **RELATIONSHIP BETWEEN PHYSICO-CHEMICAL PARAMETERS OF PRECIPITATIONS AND WIND DIRECTION AT BULGARIAN COASTAL SITE,** Lora Valcheva, Assoc. Prof. Dr. Elena Hristova 445

58. **STUDY OF THE INFLUENCE OF THE NORTH-ATLANTIC OSCILLATION ON THE SNOW COVER CONDITIONS IN BULGARIA,** PhD Dimitar Nikolov, PhD Cvetan Dimitrov 455

59. **SYSTEMATIC RESEARCHS FOR REDUCING CARBON DIOXIDE EMISSIONS FROM FOSSIL FUELS USING GEOLOGICAL STORAGE IN ROMANIA,** PhD Anghel Sorin, PhD Constantin Stefan Sava, PhD Alexandra Dudu 463

60. **THE CONCEPTUAL FRAMEWORK OF GHG MODULE INTEGRATION IN CONCEPTUAL HYDROLOGICAL MODEL METQ,** Assist. Prof. Inga Grinfelde, Jovita Pilecka-Ulcugaceva, Anda Bakute, Dr. Laima Berzina, Sindija Liepa 471

61. **THE IMMUNE PROFILE FEATURES OF THE CHILDREN'S POPULATION IN THE NORTH OF SIBERIA,** Yulia Chelakova, Prof. Dr. Oleg Dolgikh, Prof. Dr. Nina Zaytseva 479

62. **THE IMPACT OF CLIMATE CHANGE ON THE FREQUENCY OF DANGEROUS WEATHER EVENTS (A CASE OF SOUTHERN EUROPEAN PART OF RUSSIA),** Assoc. Prof. DSc. Olesya Nazarenko 485

63. **THE IMPACT OF TRANSPORT ON THE AIR QUALITY IN SLOVAKIA,** PhD Silvia Capayova Stefunkova, PhD Dominika Hodakova, Jakub Takacs, PhD Andrea Zuzulova 493

64. **VEGETATION AND CLIMATE HISTORY RECONSTRUCTED FROM AN ARCTIC LAKE OF THE PUR-TAZ INTERFLUVIAL REGION, WESTERN SIBERIA,** Gulnara Nigamatzianova, Niyaz Nigmatullin, Elvira Valieva, Assoc. Prof. Dr. Larisa Frolova 501