

21st International Multidisciplinary Scientific GeoConference (SGEM 2021)

Ecology, Economics, Education and
Legislation

SGEM International Multidisciplinary Scientific GeoConference
Volume 21, Issue 5.1

Albena, Bulgaria
16-22 August 2021

Editors:

**Oleksandr Trofymchuk
Baiba Rivza**

ISBN: 978-1-7138-5239-1

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© (2021) by SGEM WORLD SCIENCE (SWS) Scholarly Society
All rights reserved.

Printed with permission by Curran Associates, Inc. (2022)

For permission requests, please contact SGEM WORLD SCIENCE (SWS) Scholarly Society
at the address below.

SGEM WORLD SCIENCE (SWS) Scholarly Society
10/11 Gerlgasse
Vienna 1030, Austria

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

ECOLOGY AND ENVIRONMENTAL PROTECTION

- 1. ADVANCED WASTEWATER TREATMENT USING NANOMAGNETITE TO REMOVE LEAD, COPPER AND ZINC IONS**, Ioana Andreea Chirea, Alexandra Georgiana Vatui, Adelina Ioana Matei, Andreea Nicoleta Ghita, Lidia Licu.....3
- 2. ANALYSIS OF THE NEAR INFRARED (NIR) SPECTROSCOPY METHOD USED FOR TEXTILE WASTE SORTING**, Assist. Prof. Dr. Oana-Cristina Modoi, Dr. Iulia Ajtai, Assist. Prof. Dr. Carmen Roba, PhD stud. Alexandru Mereuta11
- 3. APPLICATION OF CHEMICAL AND HOLISTIC METHODS IN QUALITY RESEARCH OF BEETROOTS (BETA VULGARIS L. VAR. CONDITIVA ALEF.) WITHIN DIFFERENT AGRICULTURAL SYSTEMS**, Daiva Sileikiene, Laima Cesoniene19
- 4. ASSESMENT OF THE IMPACT OF SOLID WASTE ON SOIL CONTAMINATION (EXAMPLE OF KAKHETI REGION, GEORGIA)**, Laura Kavelidze, Besik Kalandadze.....27
- 5. MAJOR ACCIDENTS AND WASTES**, Prof. Dr. Pavel Danihelka35
- 6. CHEMICAL PECULIARITIES OF THE WATER RECOURSES IN THE UPPER PART OF OGOSTA RIVER CATCHMENTS, NORTHWESTERN BULGARIA**, Assoc. Prof. Dr. Georgi Zhelezov43
- 7. DETERMINATION OF THE COASTAL ZONE OF DANUBE RIVER IN BULGARIA**, Assoc. Prof. Dr. Georgi Zhelezov, Assist. Prof. Dr. Velimira Stoyanova51
- 8. ECOETHICS AND RESPONSIBILITY TOWARDS THE PLANET IN THE REFLECTION OF SELECTED THEORISTS**, Assoc. Prof. Dr. Marian Ambrozy, Assoc. Prof. Dr. Tetiana Bukoros59
- 9. ECOLOGICAL CONDITION AND PROBLEMS OF USING THE SOIL COVER OF ZAPORIZHZHIA REGION (SOUTH OF UKRAINE)**, Assist. Prof. Tetiana Zavialova67
- 10. ECOLOGICAL IMPERATIVE IN INFORMATION-PHILOSOPHICAL DETERMINATIONS OF CRITICAL THINKING**, Prof. Dr. Olena Troitska77

11. ECOTOXICOLOGICAL RISK ASSESSMENT METHODOLOGY FOR CONTAMINATED SOIL AND GROUNDWATER,	PhD stud. Alexandru Florin Simion, PhD Marius Kovacs, PhD Angelica Nicoleta Calamar, Eng. Ionut Dragoi, Eng. Catalina Ghita	83
12. EFFECT OF GROWING INTERMEDIATE CROPS PRONE TO FROST KILL ON THE RETENTION AND INCREASE OF N SUPPLY IN THE SOIL,	Ing. Antonin Kintl, PhD Jakub Elbl, Ing. Tereza Hammerschmiedt, Ing. Igor Hunady, Ing. Martin Brtnicky	91
13. EFFECT OF PREPARATION PROCEDURE ON FORMATION OF CERIUM AND MANGANESE OXIDES,	Assist. Prof. Dr. Gloria Issa, Assist. Prof. Dr. Radostina Ivanova, Assoc. Prof. Dr. Momtchil Dimitrov, Prof. DSc. Daniela Kovacheva, Prof. DSc. Tanya Tsoncheva	99
14. ENVIRONMENTAL FACTOR WATER AND ANTHROPIC PRESSURES THAT INFLUENCE ECOSYSTEMS FROM NATURA 2000 SITE ROSCI0434 SIRETUL MIJLOCIU,	PhD Nicoleta-Nona Ardeleanu, Dr. Iuliana-Gabriela Breabăn	107
15. FIRST GENETIC CONFIRMATION OF NYMPHAEA TETRAGONA IN LATVIA,	PhD Gunta Jakobsons, PhD Anita Osvalde, PhD Dainis Edgars Rungis, MSc. Andrejs Svilans	115
16. FROM A CONCEPTUAL RESTRUCTURING OF THE UNDERSTANDING OF ENVIRONMENTAL ETHICS - TO PHILOSOPHICAL REPRESENTATIONS AND ACTIONS,	Prof. Dr. Olena Troitska, Assoc. Prof. Alla Krylova, Assoc. Prof. Tatyana Dyuzhikova, PhD Dmytro Vakalo, Prof. Dr. Tamara Troitska	123
17. GREEN COMPETITIVENESS AS A REGIONAL BUSINESS STRATEGY,	Assoc. Prof. Kliment Naydenov	131
18. HABITATS LOST: ANALYSIS OF THE EUTROPHICATION MAGNITUDE AT A PROTECTED COASTAL LAKE IN BULGARIA USING SATELLITE AND DRONE IMAGERY,	Dr. Bogdan Prodanov, Dr. Radoslava Bekova, Dr. Iliyan Kotsev, Viktoriya Vachkova	139
19. MODELING OF TEMPERATURE FIELD FOR OBTAINING LIGATURES IN Fe-B SYSTEM FROM METALLURGICAL WASTE,	Dr. Levan Antashvili, Dr. Garegin Zakharov, Dr. Irakli Maisuradze, Dr. Zurab Aslamazashvili, Dr. George Mikaberidze	147
20. OXIDATIVE DAMAGE IN ZEBRAFISH EXPOSED TO ENVIRONMENT REALISTIC CONCENTRATIONS OF ROUNDUP AND CHLORPYRIFOS,	Prof. Dr. Halina Falfushynska, PhD stud. Ihab Khatib, Assoc. Prof. Dr. Oksana Bodnar, PhD stud. Oksana Horyn, Nadiia Kasianchuk	159

21. PHENOLOGY OF SPRING BARLEY (HORDEUM VULGARE) CULTIVARS REFLECT ADAPTION TO CLIMATE CHANGE: CASE STUDY OF PRIEKULI, LATVIA, 1928–2019, Dr. Gunta Kalvane, Liga Dzedule, Dr. Andis Kalvans	167
22. PHYTOREMEDIATION PLANT DEVELOPMENT IN COMMON AND ECO FRIENDLY HOUSEHOLD DISH WASHING PRODUCTS, Ieva Kleinberga, Assist. Prof. Dr. Inga Grinfelde, Prof. Dr. Inga Straupe, PhD Jovita Pilecka-Ulcugaceva, PhD Sindija Liepa.....	175
23. POTENTIAL ROLE OF MODERN GIS TECHNOLOGIES IN ACHIEVING THE UN SUSTAINABLE DEVELOPMENT GOALS, Denis Vasiliev.....	183
24. PROSPECTS OF RECLAMATION WORK IN THE CZECH REPUBLIC DURING THE PERIOD OF CLIMATE CHANGE FOCUSED ON THE MOST BASIN AREA, PhD Michal Rehor, Eng. Jiri Zaruba, Eng. Pavel Schmidt, Assoc. Prof. Petr Vrablik.....	191
25. PROTECTION OF CHEMICAL FACILITIES AGAINST INTENTIONAL MAJOR ACCIDENTS WITH SERIOUS ENVIRONMENTAL IMPACTS, Prof. Dr. Pavel Danihelka, Mgr. Jan Jurasek.....	199
26. RELATIONSHIP BETWEEN LANDFORMS AND HEAVY METAL CONTENTS IN THE SOIL OF THE OSTROVSKA LOWLAND ALONG LOWER DANUBE, Assist. Prof. Dr. Velimira Stoyanova, Assoc. Prof. Dr. Tsvetan Kotsev	207
27. RISK PERCEPTIONS IN MINING COMMUNITIES AND IMPLICATIONS FOR SUSTAINABLE DEVELOPMENT. A CASE STUDY IN THE APUSENI MOUNTAINS, ROMANIA, Dr. Lucrina Stefanescu, Dr. Monika Meltzer, Dr. Filip Alexandrescu, Dr. Veronica Constantin, Dr. Alina Pop.....	217
28. STUDIES ON COOLING WATER REUSE FROM STEEL SLAG, PhD Viorica Ghisman, Dr. Alina Mihaela Ceoromila, PhD Cristian Dragos Obreja, Prof. Dr. Daniela Laura Buruiana	225
29. STUDIES ON THE REUSE OF STEEL SLAG FOR ENVIRONMENTAL PROTECTION, PhD Viorica Ghisman, PhD Cristian Dragos Obreja, PhD Gabriel Bogdan Carp, Prof. Dr. Daniela Laura Buruiana.....	233
30. SURFACE AND GROUNDWATER POLLUTION FROM OLD URANIUM MINING SITE AND HYDRO-CHEMICAL INDICATORS FOR ITS EXPRESS ASSESSMENT - A CASE STUDY, Prof. Dr. Marinela Panayotova, Prof. DSc. Stefan Dimovski, Prof. Dr. Nikolay Stoyanov, Assoc. Prof. Dr. Svetlana Bratkova, Assoc. Prof. Dr. Anatoliy Angelov.....	241

- 31. THE NATURAL PROTECTION OF AQUIFERS OF THE TERNOPILOBLAST (UKRAINE)**, Prof. Dr. Myroslav Syvyj, PhD stud. Oleksandra Dovhanyk, Assoc. Prof. Dr. Nataliia Lisova, PhD Bohdan Havryshok, Assist. Prof. Natalia Panteleeva249
- 32. THE NECESSITY TO DEVELOP VULNERABILITY-BASE LAND USE POLICIES IN DEVELOPING COUNTRIES. CASE STUDY: USE OF HIGH RESOLUTION LAND USE DATA IN ROMANIA**, Dr. Camelia Botezan, PhD stud. Andrei Radovici, Dr. Iulia Ajtai, Dr. Ioana Pisteu, Dr. Horatiu Stefanie.....259
- 33. THE NEED FOR PAN-EUROPEAN CONSERVATION PLANNING/BASED ON REMOTE SENSING TECHNIQUES**, Denis Vasiliev267
- 34. THE PROBLEM OF GLOBAL CLIMATE CHANGE IN THE ACTIVITIES OF ENVIRONMENTAL PUBLIC ORGANIZATIONS OF UKRAINE**, Assist. Prof. PhD Volodymyr Mykhailov, Assoc. Prof. PhD Galina Taranenکو, Assist. Prof. Liudmyla Shlieina, Assoc. Prof. PhD Olga Popravko, Assoc. Prof. PhD Alexandr Zhiryakov.....277
- 35. THE SPATIO-TEMPORAL DISTRIBUTION OF THE FRESHWATER CRUSTACEAN ASELLUS AQUATICUS LINNAEUS, 1758, IN THE DANUBE DELTA**, Dr. Ana Bianca Pavel, Dr. Naliana Lupascu, Catalin Gheablau, Sylvain Kreuter, Dr. Irina Catianis287
- 36. THE VERTICAL DISTRIBUTION OF THE MAIN LIMNOLOGIC PARAMETERS, AS EVIDENCE OF RECENT LACUSTRINE SEDIMENTATION IN MATITA-MERHEI UNIT-DANUBE DELTA, ROMANIA**, Dr. Irina Catianis, Dr. Adriana Maria Constantinescu, Dr. Sabin Rotaru, Dr. Iulian Pojar, Eng. Dumitru Grosu.....297

ENVIRONMENTAL ECONOMICS

- 37. A COMPARATIVE ANALYSIS OF FARMING INTENSITY IN THE BALTIC STATES**, Dr. Valda Bratka, Dr. Arturs Praulins.....313
- 38. A STUDY OF THE IMPACT OF COVID-19 ON TOURISM DEMAND**, Assoc. Prof. Dr. Lyubka Ilieva, Prof. Dr. Mariyana Bozhinova, Dr. Lyubomira Todorova321
- 39. AGRICULTURAL DEVELOPMENT IN GERMAN-SPEAKING SETTLEMENTS OF THE STEPPE ZONE OF SOUTHERN UKRAINE (MID-19TH - EARLY 20TH CENTURY)**, Assoc. Prof. Oleksiy Zamuruysev, Assoc. Prof. Sergiy Pachev, Assoc. Prof. Larysa Poliakova, Assoc. Prof. Natalia Schkoda, Assoc. Prof. Alexandr Zhiryakov333

40. ARE BIOPOLYMERS THE WEAPON AGAINST POLLUTION DUE TO DISPOSABLE PACKAGING? NEW BIOBASED EDIBLE MATERIALS FOR PACKAGING FOOD SUPPLEMENTS, Dr. Roxana Gheorghita Puscaselu, Prof. Dr. Gheorghe Gutt	341
41. ASSESSMENT OF IMPLEMENTING THE BIOECONOMY STRATEGY IN LATVIA, Dr. Irina Pilvere, Dr. Aina Muska, Dr. Aleksejs Nipers, Edgars Pazerausks	349
42. CURRENT TRENDS IN THE DEVELOPMENT OF ORGANIC FARMING IN LATVIA, Dr. Armands Veveris, Dr. Arturs Praulins	359
43. DEVELOPMENT OF E-COMMERCE IN RETAILING IN LATVIA, Assoc. Prof. Dr. Liga Jankova, Assoc. Prof. Dr. Anita Auzina, Assoc. Prof. Dr. Inguna Jurgelane-Kaldava	367
44. EMPLOYEE RELATIONSHIP MANAGEMENT - CASE STUDY PUBLIC UTILITIES COMPANIES IN KOSOVO, Assoc. Prof. Dr. Fellanze Pula, Dr. Agron Mustafa, Dr. Arberesha Behluli	375
45. ENVIRONMENTAL QUALITY AT REGIONAL LEVEL: THE CASE STUGY OF BULGARIA, Assoc. Prof. Dr. Ivaylo Ivanov	383
46. FACTORS AFFECTING THE DEVELOPMENT OF SHEEP FARMING: THE CASE OF LATVIA, Dr. Aina Muska, Dr. Irina Pilvere, Dr. Aleksejs Nipers, Ina Balode	391
47. IMPACTS OF COVID-19 ON THE FOOD SUPPLY CHAIN IN LATVIA: EVIDENCE OF THE EGG PRODUCTION AND PROCESSING SECTOR, Dr. Aina Muska, Prof. Irina Pilvere, Dr. Aleksejs Nipers	401
48. INTEGRATED FINANCIAL-ECONOMIC ANALYSIS USING EXPERIMENTAL MODEL FOR ASSESSING WATER ECOSYSTEM ACCOUNTS - BULGARIAN CASE, Assist. Prof. PhD Nikolay Katsarski	411
49. INTEGRATION OF NON-FINANCIAL REPORTING IN THE BULGARIAN MOST TRADED COMPANIES, Prof. Dr. Mariyana Bozhinova, Assist. Prof. Dr. Emil Nikolov	419
50. LATVIAN STOCK MARKET ENHANCEMENT SCENARIOS: IS IT POSSIBLE TO REACH NEIGHBOURING COUNTRIES' LEVEL?, MBA Aija Pilvere-Javorska	427
51. MAINTENANCE AND REPAIR ECONOMIC EFFICIENCY OF CEMENT CONCRETE PAVEMENTS, Dr. Dominika Hodakova, Assoc. Prof. Andrea Zuzulova, Dr. Silvia Capayova, Assoc. Prof. Tibor Schlosser, Assoc. Prof. Andrii Galkin	437

52. POLITICAL FEATURES OF FEDERALIZATION OF THE MOST POWERFUL COUNTRIES IN THE WORLD: EXPERIENCE FOR UKRAINE, Prof. Dr. George Abuselidze, Assoc. Prof. Dr. Iryna Sudak, Assoc. Prof. Yuliia Bilyak, Assoc. Prof. Yuliia Nehoda	445
53. POTENTIAL LANDSCAPE OF LATVIAN REGISTERED COMPANIES RELATIVE TO BALTIC AND NORDIC STOCK MARKET LISTED COMPANIES, MBA Aija Pilvere-Javorska, Dr. Irina Pilvere, Dr. Baiba Rivza	453
54. POTENTIAL SCENARIOS FOR OVERCOMING THE COVID-19 CRISIS IN FOOD SUPPLY CHAINS IN LATVIA, Prof. Irina Pilvere, Dr. Aleksejs Nipers, Lana Janmere	461
55. PROBLEMS AND PROSPECTS OF DEVELOPMENT OF THE TOURIST AND RECREATIONAL INDUSTRY OF THE ZAPORIZHZHIA REGION OF UKRAINE IN CONDITIONS OF A PANDEMIC, Assoc. Prof. Irina Arsenenko, Assoc. Prof. Larysa Donchenko, Assoc. Prof. Iryna Donets, Assoc. Prof. Olena Arabadji, Assoc. Prof. Oleg Baiteriakov	471
56. PROBLEMS IN THE REACTION OF THE REGIONAL ECONOMY DURING THE PANDEMIC COVID -19 IN THE REPUBLIC OF BULGARIA, Assist. Prof. Dr. Metodi Ivanov.....	479
57. THE EFFECT OF TRAINING ON EMPLOYEE PERFORMANCE - (CASE STUDY - COMMERCIAL BANKS IN KOSOVO), Dr. Agron Mustafa, Assoc. Prof. Dr. Fellanze Pula	487
58. MULTI-ANNUAL FINANCIAL FRAMEWORK INVESTMENTS OF THE EUROPEAN UNION IN THE CONTEXT OF GREEN GOALS, Zaiga Vitola, Assoc. Prof. Dr. Ludmila Aleksejeva, Dr. Inta Ostrovska	495
59. THE IMPACT OF COMPLEXITY TO COLLABORATION AND ABILITY OF BUSINESSES TO SHARE INFORMATION ACROSS TEAMS, Prof. Dr.. Andrejs Cekuls	505
60. THE IMPACT OF COMPLEX APPLICATIONS AND SYSTEMS ON TECHNOLOGY OF DECISION-MAKING, Prof. Dr. Andrejs Cekuls	513
61. THE IMPORTANCE OF CULTURAL MONUMENTS IN THE VALUATION CONTEX, Martina Varechova, David Brandejs, Dr. Vitezslava Hlavinkova, Dr. Pavel Klika, Assoc. Prof. Dr. Karel Schmeidler.....	521
62. THE NITROUS OXIDE ISOTOPE MEASUREMENTS FOR SOIL SAMPLES UNDER LABORATORY CONDITIONS, Dace Butenaite, Assist. Prof. Inga Grinfelde, PhD cand. Jovita Pilecka-Uilcugaceva, Zane Vincevica-Gaile, Sindija Liepa	529

63. ECOLOGIC PROBLEMS OF RECREATIONAL ZONE OF BATUMI SEA COAST , Prof. Merab Putkaradze, Assist. Prof. Khatuna Chichileishvili, Assist. Prof. Tsira Katamadze, Dr. Maia Ananidze, MSc. Landa Putkaradze.....	537
---	-----

EDUCATION AND ACCREDITATION IN GEOSCIENCES

64. BUSINESS PROCESSES AND OCCUPATIONAL PROFILES CHALLENGES FOR TOMORROW'S INDUSTRY WORKFORCE , Assoc. Prof. Maria Ioana Vlad Sandru, Alina Radutu, Ion Nedelcu.....	549
65. FORMING A SYSTEM OF CARTOGRAPHIC CONCEPTS IN THE GEOGRAPHY TRAINING IN THE BULGARIAN SECONDARY SCHOOL , Assoc. Prof. Dr. Maya Vasileva	565
66. IMPROVING THE ENGINEERING EDUCATION IN THE RAW MATERIALS SECTOR IN AN ADVANCED, DECARBONISED, AND DIGITAL EUROPEAN SOCIETY , Assoc. Prof. Dr. Juan Herrera Herbert, Assoc. Prof. Dr. Arturo Hidalgo.....	573
67. THE EDUCATION FOR SUSTAINABLE DEVELOPMENT FOR ENVIRONMENTAL ENGINEERING STUDENTS , Assist. Prof. Inga Grinfelde, Prof. Dr. Baiba Briede, PhD cand. Jovita Pilecka-Ulcugaceva, PhD cand. Kristine Valujeva, Sindija Liepa	583