

Journal of Emerging Environmental Technologies and Health Protection

Volume 4 Issue 1 - 2021

Research Development Transactions on-line Series

Volume 4 (1) ISSN 2623-4874 e-ISSN 2623-4882

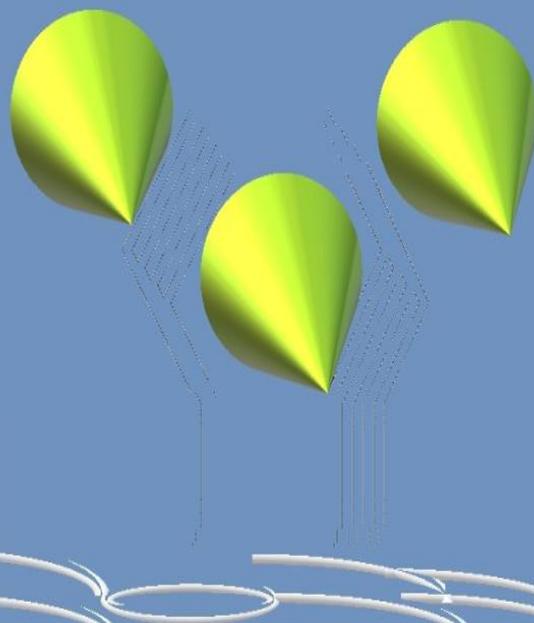
JEETHP

Editors

Tilemachos K Koliopoulos

Fateh Mebarek Oudina

Mahendra Pal



Telegeco

Contents

Preface

Acknowledgements

About the Editors

Articles

1. Growing Significance of Functional Foods to Protect Health.....	17
2. Electromagnetic Monitoring of Italian Volcanoes with the RDF Network	32
3. Natural Treatments for the Control of Foodborne Pathogens	41
4. Toxoplasmosis: Public health importance and its status in Ethiopia	48

Preface

The new volume 4 issue 1 of journal research transactions series entitled Emerging Environmental Technologies and Health Protection (JEETHP) has been realized, which is again a challenge for research dissemination; research and development for stakeholders; graduates; investors; social planners; vocational education, training and all the while keeping in mind not to do any injustice to the zeal of a contributor who has worked so hard to pen the text. Main aim is more issues to be realized at annual base.

Due to circumstances of post COVID-19 pandemic era a long procedure in editing was needful for publishing procedure. This is the issue regarding namely the first issue of 2021 at annual base. The second one issue is coming up also following the right procedure in terms of validation of published articles, reduction of similarity and updates. This volume issue is dedicated to the memory of colleagues that due to COVID-19 associated circumstances left from life. All hope that sometime will stop that pandemic relative situation due to COVID-19.

However, “Emerging Environmental Technologies and Health Protection” last decades old philosophy has been attracting not only due to the circumstances of post COVID-19 pandemic era but also for integrated environmental public health protection and sustainable development the attention of scientists worldwide. Academicians as well as industrialists are equally interested in this new stream of environmental - chemical science; innovative biotechnologies for health protection; sustainable designs; information communication technologies (ICTs); smart engineering projects; efficient e-learning - training tools; social health policy – social cohesion – media; efficient operation of veterinary units; sustainable tourism; health soil – environmental resources; effective community health units; infant units; forest – ecological infrastructures protection; sustainable designs; efficient construction designs for all; fluid mechanics for the semantics and building capacities between different scientific disciplines in engineering, biotechnology, materials and social sciences for health protection and sustainable development.

Researchers, all over the world, are conducting active research in different fields of engineering, social science and technology by adopting innovative principles and methodologies to devise new processes with a view towards helping, protecting, and ultimately saving the environment of our planet from further anthropogenic interruptions and damage. Achieving sustainability of resources is the basic spirit of innovative sustainable projects; it inspires us to try alternative “green” sustainable approaches in place of traditional “gray” practices in everyday industrial and scientific activities. Waste management, food protection, innovative materials, efficient information technologies and sustainable design avoiding associated hazards and risks is a matter of great concern. It’s quality important for both domestic purposes and industrial needs. Emerging environmental technologies are coming a necessity within clean technologies; waste management; sustainable designs; green chemistry; food productivity; food protection; public health; safety design; innovative materials; landfill emissions' exploitation; social sciences; architectural landscape upgrade; ICTs; IoTs; e-learning; green web utilities; reading materials and educational utilities for vocational training; smart technologies; green smart cities; safe infrastructures; food security; safe transportations; clean technologies; urban health; soil health; sustainable health tourism;

sustainable tourism; sports for emotional and physical activities; safe construction designs; environmental health monitoring. They are therefore an important task. But, selecting technology dyes at a cost to the environment that should be avoided when considering which technique to use.

Hence, the far important challenge is to make an applied technique sufficiently sustainable and green within a circular economy. Environmental resources pollution is often discussed with respect to various pollutants and their treatments, but the issue of emerging technologies that support health protection and sustainability has not been discussed sufficiently in the literature. Hence, the emerging environmental technologies and environmental health protection has tremendous scope worldwide. That is why emerging environmental technologies and health protection is an important issue which needs to be addressed seriously.

The articles in the current journal volume, periodical research development transactions series are the outcome of the scholarly writing of researchers of international repute with stellar credentials, who have tried to present an overview of current solutions to particular environmental problems that promote sustainability from different scientific fields. The main aim is to protect human health and environmental resources building capacities that support a sustainable development taken place proper designs and applied environmental technologies, all of which are “green.”

The current periodical journal volume issue contains four articles, all of which focus on the theme of green technologies, efficient designs, plans that are sustainable and discuss techniques, tools and materials which are nonhazardous, eco-friendly, protecting public health and social progress from different scientific disciplines.

Article 1 presents the semantics about Growing Significance of Functional Foods to Protect Health. Nowadays have been meeting functional foods with their effects on the human body many times during our life. Therefore, this manuscript presents functional foods, practice of functional nutrition and the role of physical activity and mental balance in healthy life. It is important this acquaintance and its incorporation into everyday life, where could be reduced the probability of getting many chronic diseases. In this working study, are presented useful healthy dishes for public health protection. These dishes are presented with functional nutrition such as mozzarella – tomato baguette; fried chicken breast with ham salad and kernel bread; boiled eggs with vegetable’s salad and seeded baguette; smoked cheese with green salad and mini baguettes; vegetable smoothie with seeds; multi-seeded vegetable salad; vegetable and fruit smoothie with herbs; raspberry cream with whole grain biscuits; garlic cream soup with wholemeal bread cubes; carrot cream soup with roasted pumpkin seeds; pineapple chicken breast with jasmine rice; pork chop with cashew, spinach leaves and potato garnish; vegetable salad with seeds and pomegranate in kefir sauce with a mini baguette; egg cream with green herbs on seeded baguette with tomato; vegetables with mozzarella, seeds and a whole grain bun; fish salad with vegetables and wholemeal bread. The results of the examining working study will be useful for sustainable development of our community. Also in the end are discussed food security issues for sustainability and public health protection.

Article 2 presents useful datasets results examining case studies in Italy. This chapter focuses on the Electromagnetic Monitoring of Italian Volcanoes with the RDF Network. In this working study, data from

electromagnetic monitoring of Italian volcanoes are presented and discussed. The methodology used has already been tested, starting in 2017, for the detection of pre-seismic signals in tectonically active areas. The broadband electromagnetic monitoring frequencies, detect data 24h7, and include the SELF-VLF band, from 0 to 32000 Hz. The purpose of this study, conducted in December 2020, is to identify potential candidate electromagnetic precursors, associated with impending eruptions. The data showed characteristic markers for the Etna Volcano, Stromboli Volcano, and Vesuvius Volcano areas.

Article 3 focuses on Natural Treatments for the Control of Foodborne Pathogens. For many years, chemical antimicrobial products have been used to be added in food or drinks. Consumers increasingly prefer to use natural non-toxic compounds as potential antimicrobials to inhibit the growth of foodborne pathogens, avoiding the abuse of chemical preservatives. On the other hand, microorganisms have increased the resistance to these old treatments. So, the development and the implementation of natural food preservation methods to control foodborne pathogens is urgent. The use of natural compounds presents in vegetables with antimicrobial activity have been studied for several authors and their results indicated good potential of natural extracts for application in food products. Lytic Bacteriophages are a possible method to improve the biosecurity in food because it was demonstrated that phages could control some foodborne pathogens with a high specificity and reduced effect on organoleptic properties of foods. And the use of several members of the lactic acid bacteria are known to produce antibacterial substances and lactic acid bacteria have been used for food preparation and preservation of foods.

Furthermore, article 4 focuses on the important topic of Toxoplasmosis: Public health importance and its status in Ethiopia. Toxoplasmosis is one of the most important worldwide zoonotic diseases caused by the protozoan parasite known as *Toxoplasma gondii*. Felines and humans are the only definitive host intermediate hosts for the parasite respectively. Humans get infections after ingesting raw or undercooked meat, by ingesting cat-shed oocysts via contaminated soil, food or water. One-third of the world population is infected with *T. gondii*. Encephalitis is the most important manifestation in immunosuppressed individuals. Good hygienic practicing measures are the best option to minimize transmission of *T.gondii* to humans. The disease has high public and economic significance especially causing abortion and weak newborns in small ruminants. The most effective treatment is a combination of the oral antibiotic drugs pyrimethamine and sulfadiazine plus B vitamin folic acid. Clinically Antibiotics and supportive therapy are used. In Ethiopia, even though there is high prevalence of *T.gondii* antibodies in sheep and goats, there is no significantly current report of clinical disease in animals. Generally, the community needs to be recommended about the disease as to how they can keep themselves and their animals healthy particularly by keeping their cats indoor and keeping environmental hygiene.

Moreover, this journal research development transactions volume of periodical research series can be used as an important platform to inspire researchers and stakeholders in any related fields in order to develop sustainable processes for important techniques for use in associated fields of green projects; sustainability; food productivity; food protection; waste management; biotechnology; materials; safety design; monitoring; public health protection; environmental protection; air pollution control; efficient geotechnical designs; ecological health; community health; geo-health; renewable energy; sustainable circular economies and

associated information communication technologies. Many thanks also to the support of JEETHP Editorial Board's Members wishing any success to their scientific career. We gratefully acknowledge all the contributors of this book, without whom these valuable chapters could not have been completed. We express our highest gratitude and thankfulness to all of them.

The Editors of current volume issue

Tilemachos K. Koliopoulos, Managing Director Telegeco, Collaborator University of West Attica, Athens, Greece, Editor in Chief

Fateh Mebarek Oudina, Professor, University of 20 août 1955, Skikda University, Skikda, Algeria, Associate Editor

Mahendra Pal, Emeritus Professor, Addis Ababa University, College of Veterinary Medicine, Department of Microbiology, Immunology and Public Health, Ethiopia; Department of Veterinary Public Health, Anand Agricultural University, India, Associate Editor .

Autumn 2021

Due to COVID-19 pandemic era circumstances the secretary has properly validated and updated the relative printed as well as on-line material for published JEETHP's volume 4, issue 1. --

August 2022

Acknowledgments

After the successful publication of last volume again completing a task like the publication of the current fourth volume of relative journal research articles, at JEETHP's sections in this task it takes time to rewind again your journey and relive it through memories, you remember people with encouraging faces that have motivated you to complete the task with untiring efforts to your full ability. Such smiling faces remove any pain of stress encouraging us to "Go ahead."

In the post COVID-19 pandemic era we have all to be careful following the right guidelines that are recommended by the Authorities and relative Public Health Organizations for the public health protection. However, we want to express our special thanks to all esteemed contributors of this book, who deserve special mention for contributing their writings, without which this periodical research development transactions issue would not have been possible. We deeply acknowledge our families for their never-ending encouragement, moral support and blessings. We appreciate their patience over the course of this book. We are also thankful to many others whose names we have not been able to mention but whose association and support has not been less in any way.

Brief Biographies of the Editors and Editorial Board's Members

Prof. Dr. Tilemachos K. Koliopoulos is a very well-known author of many articles, books, educational notes, research journals and hundreds of articles over the last twenty years. He has been researcher, scientific collaborator, laboratory collaborator giving lectures in the fields of environmental management, sanitary, civil, environmental and geo-information engineering during the last years at Technological Educational Institute of Athens, Department of Public Health and Community Health and at University of West Attica in Athens, Greece. He has been Professor of Technical Academy of Greek Air Forces. He has been Visiting Professor giving lectures, RDs presentations and seminars for Universities and others in Europe and overseas. Currently he is Managing Director of the Telegeco Research & Development Services, RDs. He did his PhD at University of Strathclyde in Department of Civil Engineering, Center of Environmental Management Research, in Glasgow in the U.K. His research has been in Numerical Modelling and Associated Risk Assessment in sanitary, environmental, civil engineering subjects. His research interests are focused on the development of right techniques for Public Health's protection; social health; green sustainable designs; environmental statistics; CFD; hydraulics – hydrology; numerical modeling; construction materials; atmospheric chemistry; clean technologies; waste recovery to energy; green geotechnics; circular economy for smart cities; sustainability – energy; optimum landfill design; environmental chemistry; simulation learning tools; ICT's; IoT's; VLR's; food protection; biotechnologies; biomass treatment; waste management; monitoring environmental resources and emissions; sanitary drawings; landfill gas; leachates' treatment; landfill emissions; risk assessment; web g.i.s tools; project management; sanitary engineering designs; community health building facilities; efficient construction designs; sustainable tourism; quality assurance; econometrics; decision making and sustainable development designs. Also he has made postgraduate studies Master of Environmental Studies at University of Strathclyde, Master of Business Administration at Open University of Greece in project management and I.C.T's for the protection of environmental resources and public health. He is a chartered civil engineer finished civil, environmental engineering studies at National Technical University of Athens in Greece. He has been specialized in information and communication technologies for Public Health's protection and Sustainable Designs solving proper CFD, environmental engineering computational problems, project management and operational management problems applying particular geo-information communication utilities. He has worked for National Agricultural Research Foundation in Greece as well as at several projects in environmental, civil and sanitary engineering for public health protection in public and private sector. He has been Member of the Editorial Board, reviewer of several Scientific Journals. He has been member of various international professional societies

including the Greek Association - Society of Civil Engineers; American Society of Civil Environmental Engineers; European Federation of Biotechnology and others. t.kol@hotmail.com

Professor Dr. Fateh Mebarek Oudina is a very well-known author of many research journals, books, educational notes and a lot of articles over the last years. Presently Prof. Fateh Mebarek Oudina is working as Professor at University of 20 août 1955, Skikda University, Department of Physics, Faculty of Sciences, in Skikda, Algeria. He has been Member of the International Association of Engineers (IAENG); Member of the Asian Council of Science Editors as well as elected member of Scientific Council of Skikda University, Algeria and Elected member of the Skikda University Joint Commission. He has been Member of the Technical Program Committee for several International Conferences like Materials Science and Engineering; Education, Management and Systems Engineering; Advanced Materials Science and Environmental Engineering; Modelling, Simulation and Applied Mathematics; Computer Science and Architecture Intelligence; Sustainable Energy and Environment; Electrical, Mechanical and Industrial Engineering; Mechanical and Mechatronics Engineering; Advanced Manufacture Technology; Nanomaterials and Renewable Energies and Industrial Application and Mechanical , Electronic and Information Technology. He has also been appointed as Associate Editor of Fluid Mechanics research International Journal; City University International Journal of Computational Analysis as well as Member of the Editorial Board and reviewer of several Scientific Journals. His research interests are in Magnetohydrodynamics (MHD); Computational Fluid Dynamics (CFD); Rotating flows; Hydrodynamic stability; Nanofluids; Combustion; Modeling – Simulation; and Energy. He is also a lifetime member of various international professional societies including the International Association in Engineering, IAENG, Society of Chemical Engineering; Society of Computer Science; Society of Industrial Engineering; Society of Mechanical Engineering and IAENG Society of Scientific Computing etc. f.oudina@hotmail.com

Prof. Dr. Mahendra Pal, Emeritus Professor, Ex-Professor of Veterinary Public Health (UNDP), Addis Ababa University, Ethiopia, is an internationally renowned scientist, and a well known distinguished academician with 601 publications and 8 books. Prof. Pal also worked as Professor and Head, Department of Veterinary Public Health, Anand Agricultural University, India. He is associated as Editor and Member of many online journals. Prof. Pal guided over many students at DVM, MVSc, MSc, and Ph.D. level in India and Ethiopia. He is credited to develop Pal's medium, APRM medium, PHOL stain and Narayan stain for the study of fungi, which are implicated in the clinical disorders of humans and animals. Prof. Pal elucidated for the first time the role of *Cryptococcus neoformans* in the mastitis of goat and buffalo, *Fusarium solani* in corneal

ulcer of buffalo, *Aspergillus fumigatus* in rhinitis of camel and mule, *Trichophyton verrucosum* in dermatitis of deer, and *Candida tropicalis* in human lung empyema.

He has established for the first time the prevalence of *Cryptococcus neoformans* in the environment of New Zealand, Nepal, and Djibouti. Prof. Pal has reported the first isolation of *Candida albicans* from mastitic milk, and *Trichophyton verrucosum* in dermatitis of camel in Ethiopia. Prof. Pal launched the Ph.D. programme for first time in Veterinary Public Health at Addis Ababa University, Ethiopia and also at College of Veterinary Science, Anand, Gujarat, India. His biography is published in World's Who and Who. Prof. Pal is recipient of many award including "Distinguished Teacher Award", "Jawaharlal Nehru Award", "International Achievement Award", and "Life Time Achievement Award". Prof. Pal delivered guest lectures in medical and veterinary colleges in India, New Zealand, Japan, and Ethiopia. He is the "First Indian Veterinarian" who worked as "JSPS Visiting Scientist" at University of Tokyo, Japan. Considering his immense contribution, Prof. Pal is known as "Father of Veterinary Mycology" in India. Very recently, he launched "Narayan Consultancy" on Veterinary Public Health and Microbiology to give free technical advice to scientists of poor resource countries of the world.

palmahendra2@gmail.com

Past advisory associate editors at JEETHP's issue sections, periodical transactions research development volume series have been Professor Dr. Sanjay K. Sharma from India and Professor Elias T. Nerantzis from Greece.

Prof. Dr. Sanjay K. Sharma is a very well-known author and editor of many books, research journals and hundreds of articles over the last twenty years. Presently Prof. Sharma is working as Professor and Head of the Department of Chemistry, JECRC University, Jaipur, India, where he is teaching Engineering Chemistry and Environmental Chemistry to B. Tech Students; Green Chemistry, Spectroscopy and Organic Chemistry to undergraduate and post-graduate students; and pursuing his research interest in the domain of Green Chemistry with special reference to Water Pollution, Corrosion Inhibition and Biopolymers. Dr. Sharma has had more than 16 books published on Chemistry by national-international publishers and over 61 research papers of national and international repute to his credit. He has also been appointed as a Series Editor by Springer, UK, Taylor & Francis Publishing, CRC press etc, for their prestigious book series "Green Chemistry for Sustainability," where he has been involved in editing more than 14 different titles by various international contributors so far. Dr. Sharma is also serving as Editor-in-Chief for the RASAYAN Journal of Chemistry He is a Fellow of the Royal Society of Chemistry (UK), member of the American Chemical Society (USA), and International Society for Environmental Information

Sciences (ISEIS, Canada) and is also a lifetime member of various international professional societies including the International Society of Analytical Scientists, Indian Council of Chemists, International Congress of Chemistry and Environment, Indian Chemical Society, etc. sk.sharmaa@outlook.com

Prof. Dr. Elias T. Nerantzis is Emeritus Professor at University of West Attica in Athens, Greece. He has employment duration more than twenty nine years in higher education at Department of Oenology, he had been Head of Department of Oenology at Technological Educational Institute of Athens in Athens, Greece. He is a very wellknown author and editor of many books, research journals and hundreds of articles over the last twenty years. He finished the Ethnikon kai Kapodistriakon University of Athens, Field Of Study Natural Sciences and he did his PhD at Aston University in the U.K, in the field of Industrial Microbiology. His research interests are in Fermentation of food and beverages; Design of Photobioreactors for microalgae production; Yeast microencapsulation for bioethanol production Upgrading of agroindustrial byproducts; The Archaeology of wine; Revival of ancient Greek wines. His specialties are in: Microencapsulation of microorganisms; Microalgae production; Bioethanol production using stressed yeast; Fermentation of food and beverages; Design of Photobioreactors for microalgae production; Yeast microencapsulation for bioethanol production; Upgrading of agro-industrial byproducts. He has worked in the past as Research Project Manager and Research Production Manager in the sector of the Industrial Microbiology in Greece and in the U.K. elias.nerantzis@gmail.com

JEETHP Editorial Board's Members

Galina Petrova Mratskova, MD, PhD. She is Assistant Professor in Department of "Medical Rehabilitation, Occupational Therapy, Physical Medicine and Sport", Faculty of Medicine, Trakia University – Stara Zagora, Head of Department "Physical and Rehabilitation Medicine", Galabovo - Hospital, Bulgaria. She is Member of International Society of Physical and Rehabilitation Medicine, Bulgarian Medical Association; Association of "Physical and Rehabilitation Medicine"; Bulgarian Medical Society for Osteoarthritis and Osteoporosis, Member of IOF; National Association of Otorhinolaryngology, Head and Neck Surgery, Bulgarian Society of Manual Medicine of Vertebrogenic Diseases, BDMMWZ; Bulgarian Scientific Society for Public Health. doc_mratzkova@abv.bg ; galina.mratskova@trakia-uni.bg .

Sara Hamidi, Ph.D. She is Researcher, Expert in Business - Marketing Orientation, with relative PhD research experience, Ph.D. Thesis on Business Management, Subject: 'Model presentation of brand crisis caused by the food safety scandal with a mixed research approach', MS in Executive master of Business Administration (EMBA), in Islamic Azad University, Science and Research Branch, Iran. She has teaching experience in courses about 'Marketing and Market Management (with Islamic approach)', 'Theories of organization and advanced management', sara_hamidi91@yahoo.com

Binyam Tariku Seboka. He is Researcher and Lecturer at School of Public Health, Dilla University, Dilla, Ethiopia. He is researcher, expert with relative knowledge, post graduate studies and publications. He has professional experience in designed and executed original research about “Awareness, willingness, and readiness towards Tele-monitoring technology to support diabetic patient management and their associated factors among physicians and nurses at the University of Gondar and Tibebe Ghion specialized teaching hospitals in the Amhara region, Northwest Ethiopia”. Currently, he is working as a researcher and lecturer at School of Public Health, Dilla University, Dilla, Ethiopia. His research interests are broad, but manly on digital public health, evidence based medicine, global health, one health, electronic health record, telemedicine, health informatics, spatial analysis (geographic information system), data mining, applications in health care data, especially in developing countries biniyamt@du.edu.et ; bini555tar@gmail.com .

Mohammad Sanjeed Hasan. He is researcher, expert with relative knowledge, post graduate studies, publications, professional experience in the field of Applied Mathematics, Mechanical Engineering. He has been Lecturer in Department of Mathematics and Statistics, Bangladesh University of Business and Technology, Dhaka, Bangladesh. His research interests among others are in Fluid Dynamics and Heat Transfer; Computational Fluid Dynamics (CFD); Curved Channel Flow and Heat Transfer; Numerical & Experimental Analysis; Bubble Dynamics; Droplets sanjeedlhasan@gmail.com .

Kaywan Othman Ahmed. He is Assistant Lecturer in Civil Engineering Department for different teaching courses, modules like Fluid Mechanics, Hydraulic structure, Auto CAD, Water Supply and Sewerage system, Construction Designs, Environmental Health, Sustainable Designs, Civil Engineering Department, Tishk International University, Iraq. He is coordinator of Civil Engineering Department as well as Head of Exam Committee. He is Researcher and Lecturer in Civil Engineering, Environmental Engineering expert with relative knowledge, post graduate studies and publications, kaywanosman7@gmail.com , kaywan.osman@tiu.edu.iq .

Mohammad Almohammad Albakkar. He is Reseacher, Department of Civil Engineering, University of Technology, Isfahan, Iran. He is researcher having working experience as expert in Safe Designs, Structural Engineering, Construction Designs, Construction Health, Sustainable Designs, Civil Engineering, expert with relative knowledge, post graduate studies and publications. m.almohammadalbakkar@cv.iut.ac.ir

Marlon S. Alejos. He is researcher, expert with relative knowledge several projects about aqua cultures, having PhD, Masters, post graduate studies, and publications in fisheries. He has professional experience in fisheries, Institute of Aquaculture, College of Fisheries and Ocean Sciences, University of the Philippines Visayas, Miagao, Iloilo, Philippines, msa0585@yahoo.com ; marlonalejos33@gmail.com .

Bensaad Mohamed Sabri. He is researcher, expert with relative knowledge, post graduate studies, publications, professional experience in Biology, Animal Physiology, Mustapha Ben Boulaid University, Batna, Algeria. He has postgraduate studies in Cellular Biology and Animal Physiology, first class. Mustapha Ben Boulaid University, Batna, Algeria, m.bensaad@univ-batna2.dz .

Ebrahim El-Desoky El-Sayed. He is researcher, expert with relative knowledge, post graduate studies, publications, professional experience in Electrical Communications Engineering from the Department of Electronics and Communications Engineering (ECE), Faculty of Engineering, Mansoura University, Al-Mansoura, Egypt engebrahim16@gmail.com .

Asouam Saadia. She is researcher, expert with relative knowledge, post graduate studies,

publications, professional experience in Geosciences and Geo-environment, Specialty of Geomatics and Environmental Geosciences, She is working in Waste management in the Souss Massa region, the impact of landfills on the environment. Application of GIS in the choice of the favorable site for the installation of a new controlled landfill. from the University of IBN ZOHR, Morocco. She is passionate about the environment, sustainable development, waste management, and geomatics tools, and geographic information systems, rigorous and autonomous. Her multidisciplinary training provided her solid foundations in geology, environment, and in-depth knowledge in landfill management as well as computer skills, statistics, and project management tools. Her experience comprises scientific research; consultancy, voluntarily and social work in his area of research of environment and sustainable development. She has published some research papers in different journals related to her field of study. She is interested in her field of study related to environmental impact studies, environmental protection, biodiversity and ecology, waste management, mapping, and GIS saadia.asouam@gmail.com .

Dr. Nouicer Ilyes. He is expert in renewable energies, Centre de Développement des énergies renouvelables, Algies, Algeria. He is researcher, expert with relative knowledge, post graduate studies, publications, and professional experience in renewable energy resources ilyes.nouicer@gmail.com .

Abdel Karim Sarhan. He has been Teaching Associate, Professor in Faculty of Economics and Administrative Sciences, Head of Public Relations and Press Department, An-Najah National University, Palestine. His research interests are in: Media and Child, Media and Gender, Diplomatic media, Public relations, managing electronic reputation through social media in light of the Corona pandemic, digital content - sustainability kareem.sarhan@najah.edu ; dr.kareemsahran@yahoo.com .