EDITORIAL COMMENT

Dear readers,

The Editorial Board is pleased to present the first English language issue for 2024 of your favorite journal Ecological Engineering and Environmental Protection. Within the rubrics *Man and Biosphere, Microorganisms and Environment, Space Technology and Environmental Monitoring, Renewable and Alternative Energy Sources and Biofuels, and Ecological and Sustainable Agriculture* are published in total nine peer reviewed articles - seven experimental scientific articles and two reviews, with the hope and confidence that they will all attract your attention.

In the first rubrics *Man and Biosphere* you will find useful information on a point dedicated to the most terrible natural disasters - the earthquake. Of course, the rules for correct behavior are not panacea for harmless experiencing of natural disasters including earthquakes. During its whole progress humanity have acquired confidence in and tranquility from its firm basis under human feet and its loss even for a short while greatly disturbs the population and drives people to panic. Herewith, in concise manner is presented a physical simulator platform (protected by patent) for education of the population to acquire behavioral skills and manners in the event of earthquakes. In general, the simulator allows the operator to control the strength of the motion thus allowing the educational process led by the instructors, but any other advantages could be found in the article. The second article is a review which shed light on the processing and utilization of energy crops, as well as the reduction of waste products to near zero, thereby avoiding environmental pollution. Mostly the advantages, but also some disadvantages of the considered energy crops are highlighted. They have been easily accessible, undemanding and highly productive species, from which different vegetative parts a variety of environmentally friendly products are obtained - methane, ethanol, etc.

The results from a comprehensive microbiological study are presented and discussed in an article from the rubrics *Microorganisms and Environment*. Object of studies are three rivers crossing the capital of Bulgaria – Sofia. An assessment of their microbiological contamination and categorization was made in accordance with Regulation №12 from 18.06.2002. The fact of the presence of multiresistant strains of faecal streptococci in the river water is particularly worrying.

Wetland areas in Bulgaria play a key role in biodiversity and the sustainable functioning of ecosystems and the use of satellite data can provide information about changes in vegetation, water resources, land use, and other factors that may impact the state of wetlands. Interesting data on this topic can be found in an article placed in the rubric *Space Technology and Environmental Monitoring*. Data from the Sentinel 2 satellite demonstrated an augmentation of the water balance within the wetland during the year 2023. Such a finding may stem from multifaceted influences, including advancements in water resource governance strategies, responses to climatic variability and initiatives aimed at ecological rehabilitation. The second study is related with the monitoring of cosmic rays which are responsible for part of the natural exposure of the population, especially for the inhabitants of mountain areas. A number of questions concerning the nature, generation and interaction of cosmic rays with the environment are still poorly understood. That is why a portable muon telescope for monitoring of cosmic rays has been described. It is developed on the basis of Geiger-Müller counters shielded with lead adsorbers. The apparatus is suitable for long term observations of the cosmic ray flux and due to its simple and robust construction can also be used also for educational purposes.

In the rubrics *Renewable and Alternative Energy Sources and Biofuels*, a new idea for energy transfer is proposed in [Leila Bakhtiari, Dimitre Karamanev, Comparing the costs of long-distance compressed air energy transmission versus electrical energy transmission], which is debatable as to its real applicability. The reader will have the opportunity to familiarize himself with this comprehensive analysis and we will expect his remarks and evaluation on the question raised. The experience of a multidisciplinary team working more than three decades on anaerobic co-digestion of different organic wastes is presented too. Different substrates - activated sludge, cattle manure, swine manure, milk whey, wasted fruits and vegetables etc., different ratios of mixtures of these organic wastes, in binary and triple mixtures, have been investigated in view to maximize the obtained energy (methane) production. The time for reaching of the process steady state in laboratory anaerobic digesters have been determined to be ten days' period. Results obtained have shown that some binary mixtures are more perspective in regards to optimization of the biogas production.

It is well known that new hybrids and promising lines of maize, which are distinguished by a number of their characteristics and physiological requirements, are constantly used in the practice. In the rubrics *Ecological and Sustainable Agriculture* is presented a large scale study on the content and export of macronutrients (N, P, K and Si,) with dry biomass of maize (Zea maizeL.), under the influence of increasing fertilizer rates of nitrogen, phosphorus, potassium and silicon in a pot experiment with Alluvial-meadow soil. It is demonstrated that the export of N, P, K, and Si with maize dry biomass corresponded to a significant extent the contents of the macroelements in it. With increasing fertilization rates, not only the content, but also the export of nitrogen, phosphorus, and silicon increased. In a second for this issue review article (same rubrics) the most significant stages in the development of the studies on optimal fertilization and their applications are presented in chronological order. Literary sources describing the methods and algorithms clarify the agrochemical service system for agriculture. Special attention is paid to the amounts of the following nutrients: nitrogen, phosphorus, potassium, silicon, and trace elements boron, molybdenum, and zinc, required for the target yield of each specific field. Their usage leads to saving costs and reducing the environmental impact.

Last but not least, on behalf of the Organizing Committee of the VIII International Scientific Conference "Ecological Engineering and Environmental Protection with Youth Scientific Session" (EEEP'2024) I would like to invite all colleagues and friends to attend this famous scientific event! Welcome in Velingrad (October 3-6, 2024) and enjoy reading the new issue.

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