

FOREWORD

Special Issue

Conservation Approach to the Environment in the Engineering Sciences

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Human beings are an integral and inseparable part of the nature, completely dependent on it. At the same time, people exert the strongest pressure on the environment compared to all the Earth's organisms. The still growing demands and desire to ensure the most comfortable living conditions, cause that anthropogenic pressure has not only a local or regional dimensions, related to space-limited pollution of water, soil, air or irreversible changes in the relief, but becomes a global problem, because it pertains to the phenomena that affect the entire Earth's ecosystem, such as the greenhouse effect and climatic anomalies.

Overexploitation and inefficient processing of natural resources, uncontrolled release of the new substances produced for the purposes of medicine, agriculture or chemical industry, unsustainable agriculture and forest management, as well as expansive urbanization are the main reasons of disruption to the natural cycles of nature, which lead to serious environmental problems. Preventing these problems or solving them by the actions aimed at restoring the equilibrium in the natural environment with use the engineering means are the goals set by environmental engineering. The range of the activities of this discipline is very wide. It includes counteracting the changes in all elements of the global ecosystem, i.e. the atmosphere, hydrosphere, lithosphere and biosphere. The tasks of environmental engineering relate to ensure the appropriate living conditions for people, primarily the availability of high-quality drinking water, air, or thermal comfort in the rooms in which they stay, but also to protect the outdoor environment against the human activity, which often results in pollution of surface- and groundwater, atmosphere, soil and, consequently, food. Thus, environmental engineering is also tasked with protecting people against indirect effects of their own activities using technical tools for this purpose.

In this special issue, we focused our attention on the environmental engineering activities aimed at reducing air pollution with the greenhouse gases and the methods of counteracting the climate changes, the ways of preventing deterioration of water and soil quality as a result of pollutants migration from wastewater and solid waste, the methods of reducing the consumption of natural resources and minimization of drinking water losses in water systems. Better management of water resources based on the use of stormwater, the environmental aspects of obtaining energy from renewable sources, and minimizing the environmental impact of heat losses from heat-supply systems, received special attention. Despite the conspicuous diversity of paper topics, they are united by one common idea – preservation of the natural environment from the negative effects of human activities, which is one of the key branches of the conservation science.

Editors