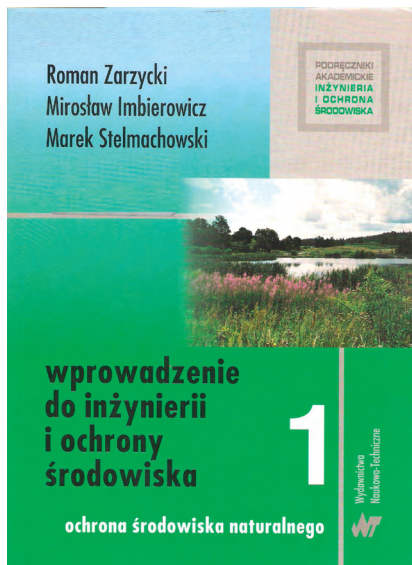


# Annales Universitatis Paedagogicae Cracoviensis

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***Introduction to engineering and environmental protection.  
Protecting the environment, section. 1, Roman Zarzycki,  
Mirosław Imbierowicz, Marek Stelmachowski (eds.),  
Wydawnictwa Naukowo-Techniczne, Warsaw 2007, 423 p.***



The reviewed book covers generally all major issues related to the engineering and environmental protection. Its authors are recognized experts in this field. With the skilful, more technical descriptions of the processes occurring in the natural environment, the position can optimally solve engineering problems. This is what distinguishes it from other books available on the publishing market, in which the authors focus mainly on the chemistry and physics of the environment.

In terms of content the publication is extremely rich. In the introduction the authors present objectives and tasks of environmental engineering, and discuss the theme of the book. Then they describe the solar system, the formation of the Earth and its evolution,

the atmosphere, hydrosphere, lithosphere and so on. They also discuss the role and importance of soil, food problems of the world, forests and natural resources and fuels. The third chapter presents the biogeochemical cycles: carbon, sulphur, nitrogen, and phosphorus. Then it describes the causes and effects of pollution. They focus here by sulphur dioxide, nitrogen oxides, dust, carbon dioxide, methane, nitrous oxide, halogen derivatives, other greenhouse gases and phenomena such as the greenhouse effect, ozone depletion, acid rain and smog. In the fifth chapter the sources of pollution and degradation of water effects are discussed. The authors focus here on the municipal and industrial wastewater, water consumption and wastewater production by the refinery, petrochemical, pulp and paper, steel and metallurgy, mining, and energy industries. The authors also describe the area-source pollution

from agriculture, landfills, industrial sites and urban areas, transportation routes and acid rain. Then they discuss the quality of surface water, the purity of rivers and lakes and water pollution of the Baltic Sea. In the sixth chapter the contamination of soils with heavy metals and acid rain and waste is described. Later in the book the authors discuss the flue gas cleaning processes. Singled out here are absorption, adsorption, combustion and catalytic processes. They also look into flue gas desulphurization in the industry and the removal of NO<sub>x</sub>, other pollutant gases, dusts, mists and aerosols from waste gases. They also characterize the gravitational dust collectors, cyclones, electrostatic filters, wet and drops separators and demisters. In the eighth chapter the mechanical, physical and chemical processes of water treatment and biological treatment methods are described. The authors also discuss the selection of physicochemical processes for water treatment and wastewater treatment. In the ninth chapter the possibility to reduce the amount of municipal waste and their thermal processing, composting and landfilling are described. It also describes sewage sludge, waste plastic and rubber, car tires, hazardous and medical waste. In the last, tenth chapter the elements of environmental management are discussed. Here are among others the concept of sustainable development, legal aspects of environmental protection, basic principles and standards for environmental management, the concept of clean production, the best available technology (BAT), and environmental monitoring. The authors also describe the elements of safety and risk management industry, the basic principles of environmental impact assessment and economic issues related to the valuation of environmental use.

In my opinion the book "Introduction to engineering and environmental protection. Protecting the environment" can be a very good complement to knowledge for students of all fields of conservation and environmental engineering. It may also be helpful for local governments, which usually face the problem of waste emissions into the environment.

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