



---

## **SUSTAINABLE ALTERNATIVES FOR PETROCHEMICAL WASTEWATER MANAGEMENT**

**Carmen Teodosiu<sup>1\*</sup>, Lidy E. Fratila-Apachitei<sup>2</sup>**

<sup>1</sup>*Technical University of Iasi, Faculty of Industrial Chemistry, Bd. D. Mangeron 71A,  
6600 Iasi, Romania*

<sup>2</sup>*Delft University of Technology, Faculty of Applied Sciences, Rotterdamseweg 137,  
2628 AL Delft, The Netherlands*

---

### **Abstract**

The adoption of sustainable alternatives for industrial development is in close connection with technology and managerial improvements, planning and policies adopted nationally and internationally and envisage decrease of wastes and emissions, conservation of natural resources and preservation of the ecological equilibrium. Based on the concept and use of sustainable indicators, this paper discusses several sustainable alternatives for the petrochemical wastewater management, considering also the particular aspects of wastewater generation and their environmental impact. Alternatives such as: *monitoring and pollution control, pollution prevention and waste minimization, wastewater treatment/wastewater recycling or reuse, integrated management systems, design for environment, adoption of sustainable production indicators and sustainability reporting* are discussed, focusing on particular applications for the petrochemical industry. Thus, a general framework for petrochemical wastewater management is provided, and further adoption of one or more alternatives can be established, based also on the actual economic and social conditions, existent environmental policies and environmental legislation enforcement.

*Keywords:* Sustainable development and indicators, integrated water management, wastewater management, petrochemical industry

---

---

\* Author to whom all correspondence should be addressed. Fax: +40-32-237594; e-mail: [inmediu@ch.tuiasi.ro](mailto:inmediu@ch.tuiasi.ro)