



**“Gheorghe Asachi” Technical University of Iasi, Romania**



---

## **CONSIDERATIONS FOR THE BASIS OF AN INNOVATIVE ECO-FRIENDLY WASTEWATER BIOREMEDIATION TECHNOLOGY**

**Tatiana Pantsyrnaya<sup>1\*</sup>, Elena Krasnoslobodtseva<sup>2</sup>,  
Anastasia Reutova<sup>3</sup>, Olga Shchelkanova<sup>2</sup>**

<sup>1</sup>*“New Engineering Technologies” Center, Moscow State University of Mechanical Engineering, Bolshaya Semenovskaya str., 38, Moscow, 107023, Russian Federation*

<sup>2</sup>*Faculty of Ecology, Moscow State University of Mechanical Engineering, Bolshaya Semenovskaya str., 38, Moscow, 107023, Russian Federation*

<sup>3</sup>*Faculty of Geography, Lomonosov Moscow State University, GSP-1, Leninskie Gory, Moscow, 119991, Russian Federation*

---

### **Abstract**

Biodegradation is a “green”, powerful and cost-effective way to remediate polluted environment. Still traditional biodegradation technologies of hazardous hydrophobic pollutants are generally limited by low bioavailability of such contaminants. That is why there is a need to develop innovative approaches to enhance the efficiency of biodegradation. The aim of the present work was to develop the basis of an innovative eco-friendly wastewater treatment technology for remediation of effluents and water contaminated with hydrophobic organic contaminants (HOCs). A technology for enhanced HOCs biodegradation was developed basing on the clouding phenomenon of nonionic surfactants.

*Key words:* bioremediation, cloud point system, eco-friendly technology, wastewater treatment

*Received: March, 2014; Revised final: August, 2014; Accepted: September, 2014*

---