

## ADVANCED TREATMENT TECHNOLOGIES FOR RECYCLING INDUSTRIAL WASTEWATER

**RIWATECH - Research Grant no. 62 / 2005 of the Research for Excellency Programme (CEEX)**

The original approach of the RIWATECH project is the fact that it combines the aspects of all the major research & development, technology transfer, training and dissemination, so as to reduce pollutant loads and wastewater discharges, to implement the industrial wastewater recycling and to improve water management practices concerning the supply, usage, treatment and recycling of wastewater in the pulp and paper industry

The RIWATECH Project is a direct response to the need for the Romanian industry to comply with the more demanding legislative requirements in the field of water and wastewater management, imposed by Romania's recent EU adhesion, together with the industry's need to improve its economic performances, given the increasing competition on the EU market. One of the means to achieve these two issues is to consider the recycling of industrial wastewater flows back into the technological process as process water, in order to improve both the environmental and economic performances of intensive water consuming activities, like the pulp and paper industry.

Having this sustainable development approach in mind, a multidisciplinary research consortium formed by the "Gh. Asachi" Technical University of Iasi as project coordinator together with other 4 partners with high expertise, and experience in the field of wastewater treatment technologies (Politehnica University of Bucharest, Petru Poni Institute for Macromolecular Chemistry of Iasi, Politehnica University of Timisoara and Transilvania University of Brasov) have proposed and won the funding of the RIWATECH Project within the Research for Excellency Programme (CEEX) of the Romanian Ministry of Education and Research.

The Riwatech project has the following objectives:

1. The development and implementation of advanced treatment technologies for recycling industrial wastewater from the pulp and paper industry so as to reduce the pollutant loads and wastewater discharges and to achieve water conservation;
2. The improvement of management practices concerning water conservation, water usage, wastewater treatment and recycling of the effluent from the pulp and paper industry considering the implementation of the Integrated Pollution Prevention and Control (IPPC) and the Water Framework Directive (WFD);

3. The development and implementation of continuous education programs and trainings in the field of Sustainable Water Management (considering the stages from water supply, water conservation towards wastewater recycling);

4. The transferability of technological, monitoring, management and educational practices within the specific industry (pulp and paper branch);

5. Dissemination of the most important results of the RIWATECH at the level of: national and international scientific community, of the industrial enterprises (pulp and paper and other industries), of the representatives of the environmental protection authorities (local/national) and of the civil society.

To achieve the above objectives, the RIWATECH project uses an original approach for the implementation of its activities that combines the aspects of research and development, technology transfer and training and dissemination. The activities of the project include: research, development and demonstration of advanced wastewater treatment technologies to complete conventional treatment for the recycling of industrial effluents; the development of an integrated monitoring and control system for water supply, usage, conservation and treatment; development of pollution prevention and cleaner production practices for industrial water and wastewater management; technological transfer and dissemination of results.

Until now, the consortium has studied five applicable advanced wastewater treatment processes in order to achieve wastewater recycling in the pulp and paper industry, has developed the integrated monitoring system that gives data on the technological production process and on the wastewater treatment process and has produced a pollution prevention and cleaner production measures manual for the pulp and paper industry. Currently, the consortium focuses on the technological transfer methodology by assessing the technical and economical performances of the five advanced treatment processes that have been previously studied in order to select the optimal one. The future activities of the project are focused on developing 4 training modules to improve water resources management in industry, as well as to disseminate the results of the research activities.

For more information on the RIWATECH Project, please visit: <http://riwatech.cs.tuiasi.ro>



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