Integrated system for diminuting environemntal impact and human health risks within water use cycle

Goal of the project:
The main goal of the project is to develop and implement the integrated system of innovative technologies and management tools for reducing the impacts and the risks associated to the environment and human health due to the water quality issues, throughout the entire cycle of its use: sampling form natural sources, tratment, distribution, use, collection and treatment of wastewater and final discharge and reuse.

Short description of the project:
The specific objectives were defined at the level of whole water usage cycle:
1. Development of specific tools for the identification, quantification and control of environmental impact and risk within the entire water resources use cycle, applied at the level of industrial water operators;
2. Development of cooperation and technological transfer between universities and water operators from Timis and Iasi counties for control of environmental impact and associated risk on the human health within the entire water use cycle;
3. Development of research and institutional capacities of project partners to facilitate the further cooperation at the national and the international level;

Project implemented by:
• SC Aquatim SA Timisoara
• SC Apavital SA Iasi

Research centre for Environmental Science and Engineering

Main activities:
1. Integrated evaluation of the water use cycle;
2. Studies on impact and risk minimization through innovative water treatment process (removal of nitrate, nitrite and natural organic matter);
3. Studies on impact and risk minimization through innovative wastewater treatment processes (removal of priority organic pollutants);
4. Pilot-scale studies on impact and risk minimization in water treatment;
5. Pilot-scale studies on impact and risk minimization in wastewater treatment for reuse.
Development of an integrated monitoring system for water-related impacts and risks survey;
6. Development and testing of integrated management instruments for impact and risk prediction and minimization over the water use cycle;
7. Integration and optimization of the electrode materials and electrochemical techniques in water treatment and process control.

Results:
1. Two innovative assessment instruments: the - integrated environmental-human related impact and risk assessment and the environmental impacts assessment based on the grey water footprint concept;
2. Technical documentation on the optimal technology for water treatment pilot system;
3. Pilot scale system for the advanced water treatment;
4. Life cycle assessment methodology for assessing water systems

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Research team:
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"Water is the driving force of all nature."
Leonardo da Vinci