INTEGRATED SYSTEM FOR REDUCING ENVIRONMENTAL AND HUMAN-RELATED IMPACTS AND RISKS IN THE WATER USE CYCLE

Goal of the project

The main goal of the project is to develop and implement an integrated system of innovative technologies and management instruments for reducing environmental impacts and associated human health risks caused by water quality aspects in the entire water use cycle: water abstraction, treatment, distribution, use, wastewater collection, wastewater treatment and discharge and reuse.

Short description of the project

The specific objectives were defined at the level of whole water usage cycle:

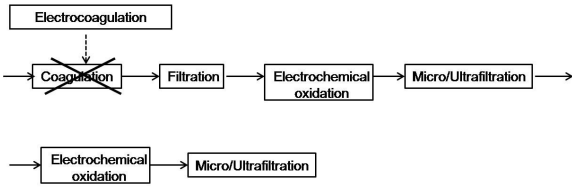
1. Development of specific instruments for the identification, quantification and control of environmental impacts and risks, over the water use cycle, applied to regional water operators;
2. Development of the capacity of collaboration and knowledge transfer between the universities and the regional water operators in Iasi and Timis counties for the control of the environmental impacts and human health risks in the water use cycle;
3. Development of the research and institutional capacities of the universities and water regional operators in Iasi and Timis counties for facilitation of the further cooperation at national and international scale;
4. Development of capacities and competitiveness of Romanian researchers and staff of regional water operator, as well as of the national partnerships contributing to environmental sustainability.

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 and 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 control.



Project implemented by

- SC Aquatim SA Timisoara
- SC Apavital SA Iasi

Implementation period

2012 – 2015

Results

1.Assessment of electrocoagulation, electrooxidation and electroreduction processes in drinking water treatment;
2.Elaboration of an adapted electrocoagulation protocol for advanced treatment of drinking water;
3.Comparative technical-economical assessment of electrochemical process;
4.Integration of electrochemical processes within drinking water treatment flow.

Financed through/by

UEFISCDI

Applicability and transferability of the results

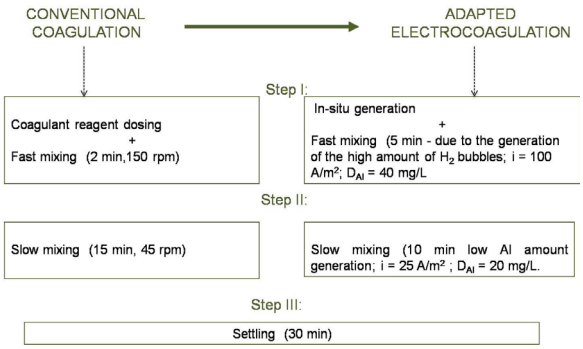
Two regional water operators, i.e. Aquatim and Apavital are involved in this project in order to test and apply innovative technologies for water and wastewater treatment in direct relation with specific water quality problems.

Research centre

Research Centre for Environmental Science and Engineering

Research team

- Florica Manea-partner responsible
- Rodica Pode-senior researcher
- Laura Cocheci-researcher
- Aniela Pop-researcher
- Anamaria Baciu-researcher as.
- Sorina Motoc-researcher as.
- Magdalena Ardelean-researcher as.
- Agnes Jakab-researcher as.



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