



ELECTRONIC MICRO SYSTEMS FOR ENERGY EFFICIENCY OF WASTEWATER TREATMENT PLANTS

A key environmental and economic aspect of **Waste Water Treatment Plants** (WWTP) is their **high energy consumption**, especially of electricity, making it the highest operating cost item of a WWTP. This coupled with the ever increasing price of electricity and the rising environmental awareness has turned the optimization of energy consumption in WWTPs into one of the biggest concerns of WWTP managers.

In view of these needs, the main aim of MEDRA Project is the design, development and implementation of a miniaturized respirometer for online and unattended determination of wastewater respirometry; and the development of a mathematical model to estimate the amount of biodegradable substrate present in the wastewater, allowing the automation of the aeration control system. **Thus the control of the aerobic biological processes will be optimized, minimizing the energy consumption of WWTP.** This system will not only reduce WWTP's operating costs due to minimized energy consumption, but will also allow reducing maintenance costs by prolonging the useful life of the aeration systems.

The consortium, led by **INKOA SISTEMAS**, also involves **AEMA Servicios, Laboratorios Alfaro** and **the National Centre of Microelectronics** belonging to the Spanish Council for Scientific Research (IMB-CNM, CSIC). The consortium also has the support of the **Spanish Water Technology Platform** (PTEA).

The project started in July 2011 and its completion is scheduled for March 2014, with a total duration of 34 months.



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