

TFG at the Chemical Transducers Group (GTQ) in IMB-CNM(CSIC)

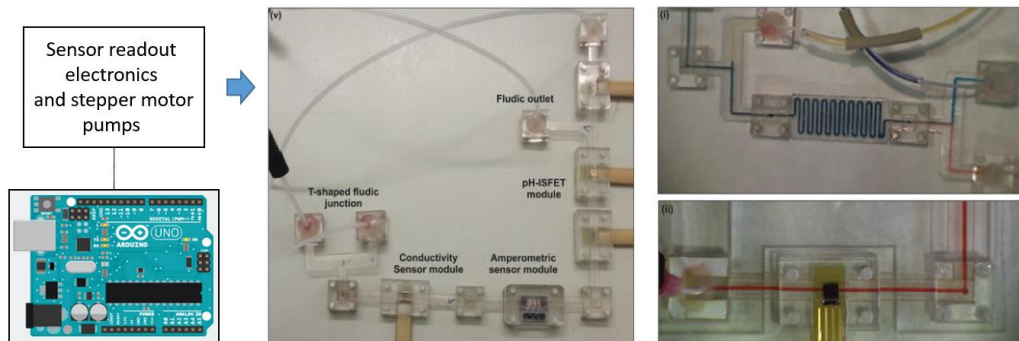
Modular microfluidic system for the automated measurement of priority pollutants in surface waters

Description

Water quality is a major concern worldwide. Global warming, increased demand and pollution are stressing the water supply systems worldwide. Monitoring chemical contamination in water is strictly required nowadays in order to make a responsible use of water resources and thus guarantee the access to water to the society.

The aim of this project is the development of an automated microfluidic system that integrates different electrochemical systems together with stepper motor-based syringe pumps and Arduino-compatible controllers for the autonomous analysis and monitoring of waters. Rapid prototyping techniques like 3D printing and laser cutting will be used for the design of the microfluidic modules.

The GTQ group has experience in this type of systems and will provide access to the previous know-how and module designs to the participating student. Therefore, the task for the student will be the improvement of previous designs, the assembly of a particular system configuration, and its characterization in the lab. Finally, evaluation of the system in a real water monitoring site will be carried out.



Background and skills

- Electronic Engineering, Physics and Chemistry graduates or similar
- Basics of rapid prototyping tools and Arduino-based systems
- Capability of working as a team.
- Good spoken and written English.

Contact

a.baldi@csic.es and cesar.fernandez@csic.es