

# Sensing materials for medical diagnostics and environmental monitoring

The main objective of the project is to develop a sensor platform consisting a sensing layer based on molecularly imprinted polymers (MIPs) to address the needs of medical diagnostics and environmental monitoring. MIPs are polymeric materials with tailor-made molecular recognition properties and when being integrated with a label-free sensor platform allow in real-time quantitatively to determine target analytes.

In the frame of the project we are going to propose a portable sensing system (Fig. 1) providing cost effective means to determine clinically relevant biomarkers and environmental pollutants. For this purpose we will combine our already existing solutions for building MIPs with Screen-Printed Electrode technology allowing cost-effective measurements, and compatibility with the miniaturization.

We will target the system to determine:

- (i) a neurotrophic factor protein (e.g. BDNF, CDNF, MANF) as a potential biomarker for the early-stage diagnosis of neurological disorders;
- (ii) an antibiotic (amoxicillin) as an environmental pollutant causing serious public health challenges.

Thus, the solutions proposed within the frame of the project will pave a way for fabrication of new diagnostic tools suitable for point-of-care applications in medicine or express analysis in environmental monitoring.

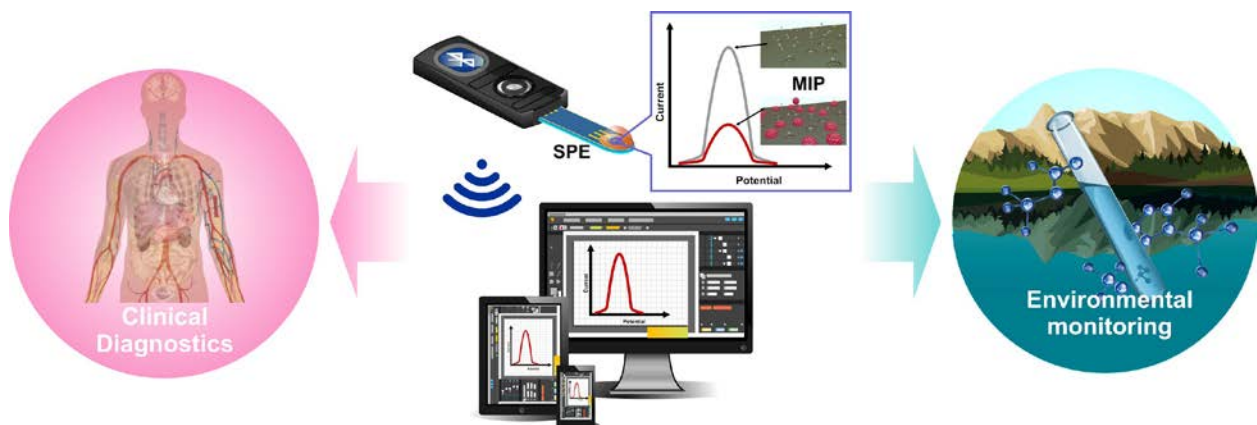


Fig. 1. The sensor platform consisting the MIP film as a sensing layer aiming at point-of-care in medicine or express analysis in environmental monitoring.