Development of Affordable, User-friendly Biosensors for Water Quality Monitoring in Rural Areas

[HORIZON-CL6-2024-COMMUNITIES-01]

Skills for sustainable, resilient, and socially fair communities

EUROPEAN YEAR OF SKILLS

June

5

3-11 June 2023

#EUGreenWeek

PARTNER EVENT

CENTER FOR PHYSICAL SCIENCES AND TECHNOLOGY

Baradoke group

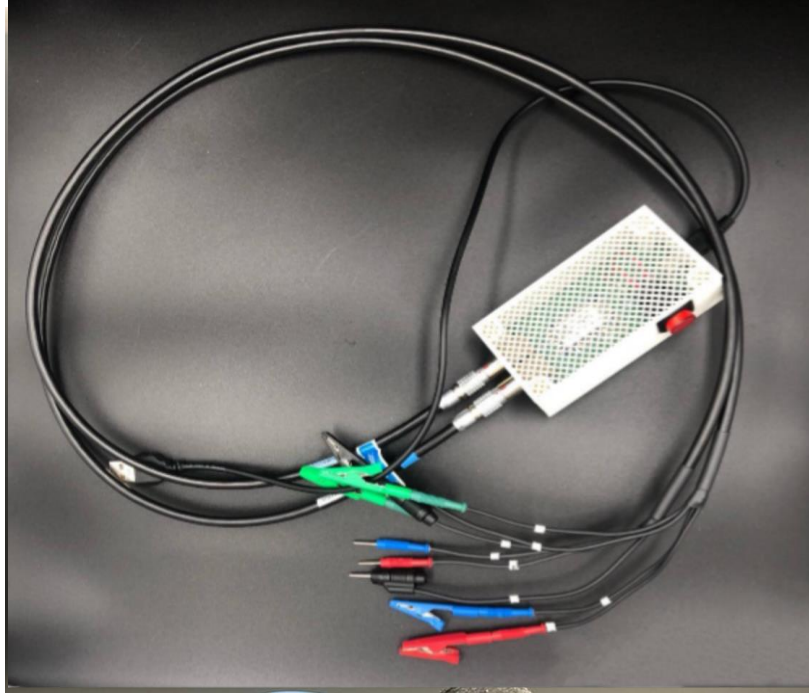
Expertise

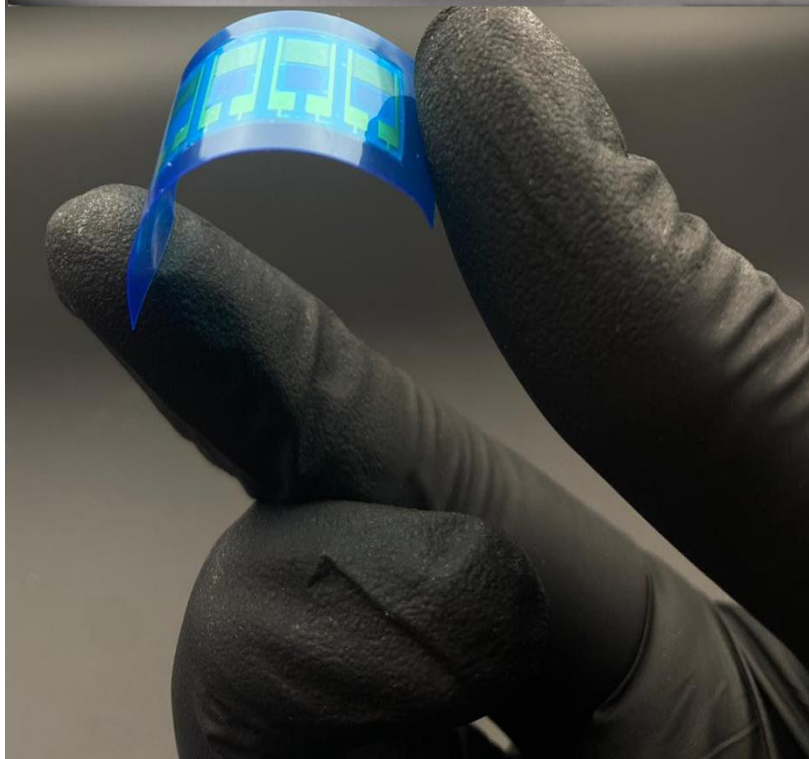
(N) **Need**
Affordable, user-friendly biosensors for real-time environmental monitoring in rural areas.

(A) **Approach**
Develop biosensors using Dr. Ausra Baradoke's expertise in biosensors and bioelectronics work on bio-inspired nanomaterials.

(B) **Benefits**
Empower rural communities with real-time data for effective resource management, promoting a circular economy and enhancing social inclusion.

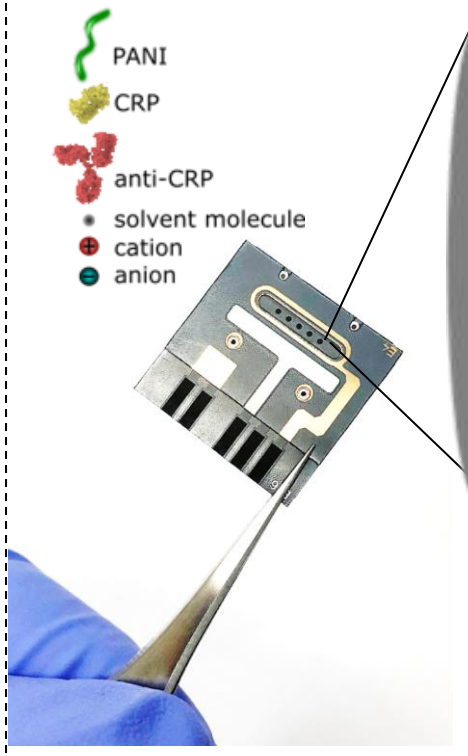
(C) **Competition**
Current tools are often costly, complicated, and slow. Our proposed technology is affordable, user-friendly, and provides real-time data.





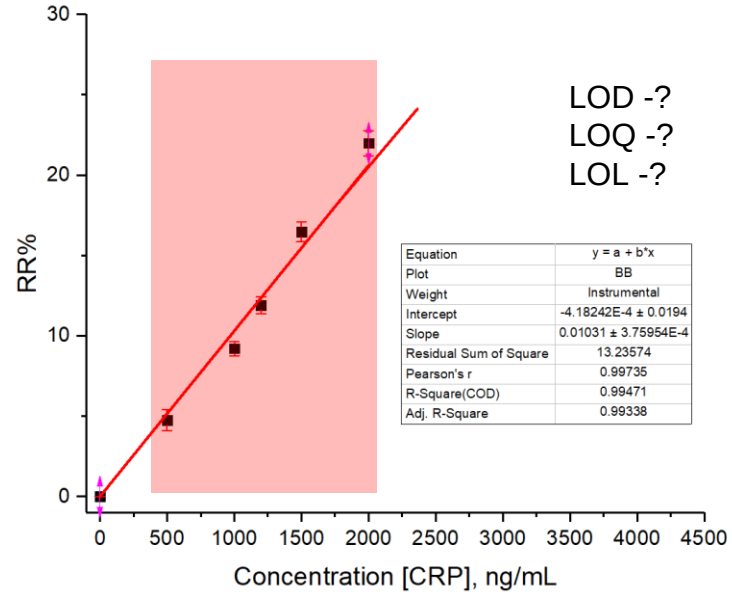
Topic and project idea

Selection of ingredients for sensing



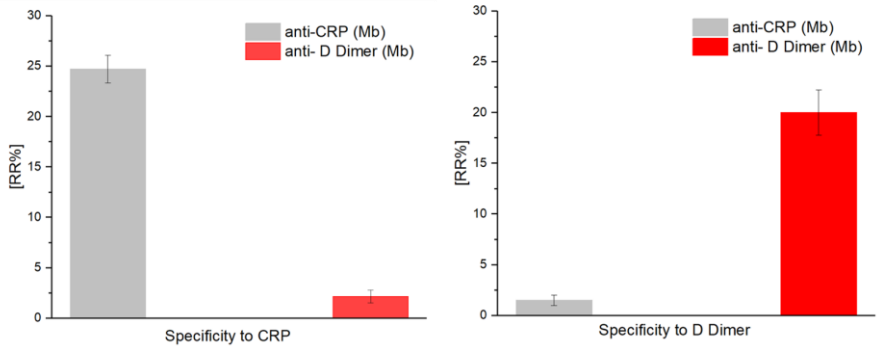
Transducer Receptor

Calibration in physiological range



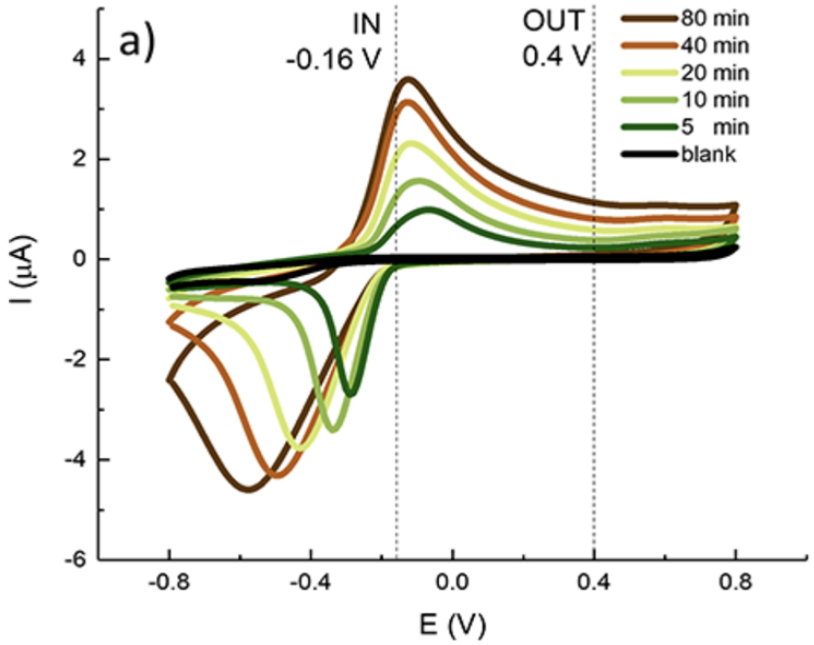
LOD -?
LOQ -?
LOL -?

Specificity

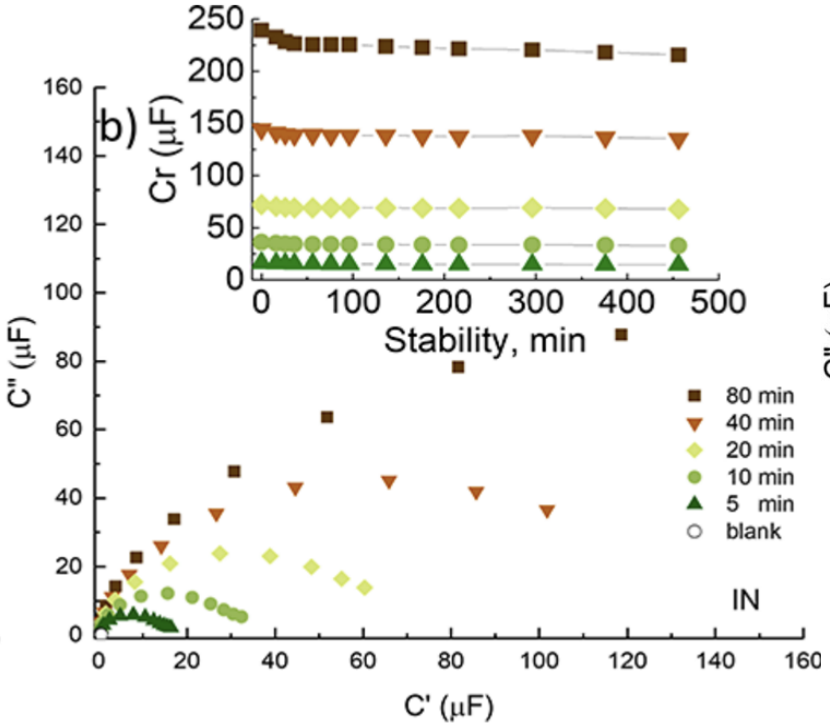


Baradoke et al. 2020

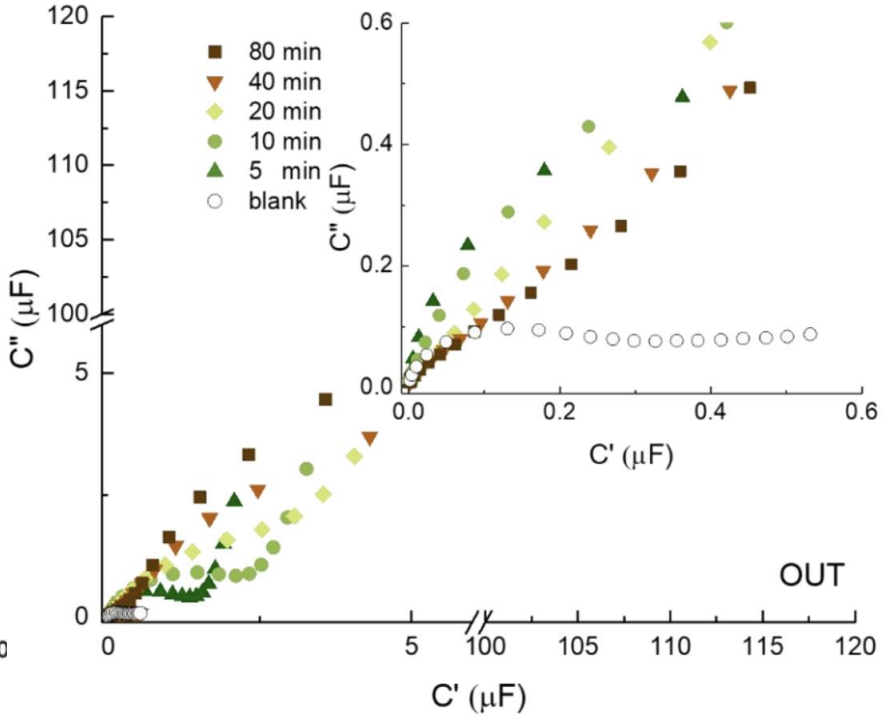
Electrochemical characterisation of PANI-PA coatings after different polymerisation times (5-80 min) in 0.1 M PB, pH 7.4.



CVs at a scanning rate of 100 mV s^{-1}.

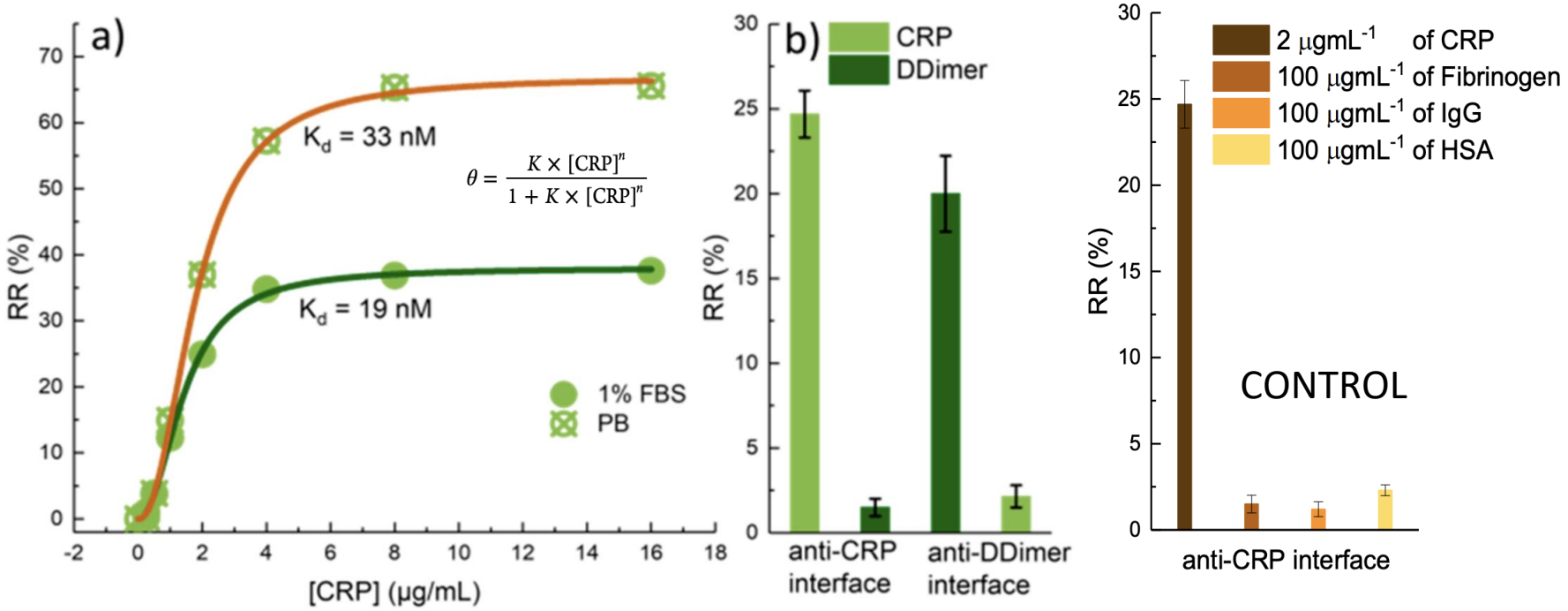


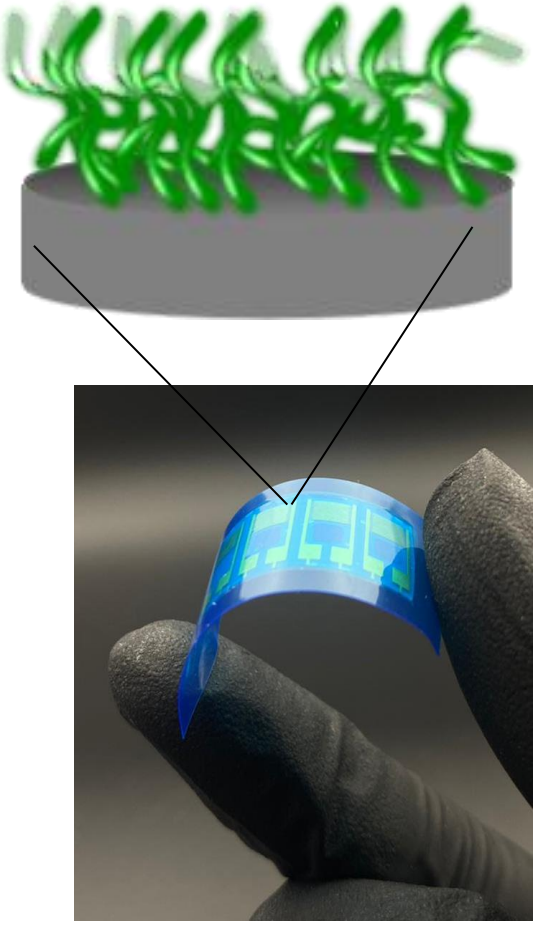
Capacitive Nyquist diagrams at redox IN potential (-0.16 V), where Cr can be determined as the diameter of a semicircular region. The inset shows the temporal stability of Cr; after an initial signal drop, the baseline is stable within ≤2%.



Measurements at redox output potential.

Competitive advantage





Innovative Technology: we utilize advanced biosensors, genetic sequencing, and AI to enable efficient green propellant production.

In-situ Resource Utilization: unlike competitors, we exploit Mars' native resources for propellant production, enhancing cost-effectiveness.

Scalability & Versatility: our platform is scalable and versatile, offering adaptable solutions to meet varying mission requirements.

Baradoke Group

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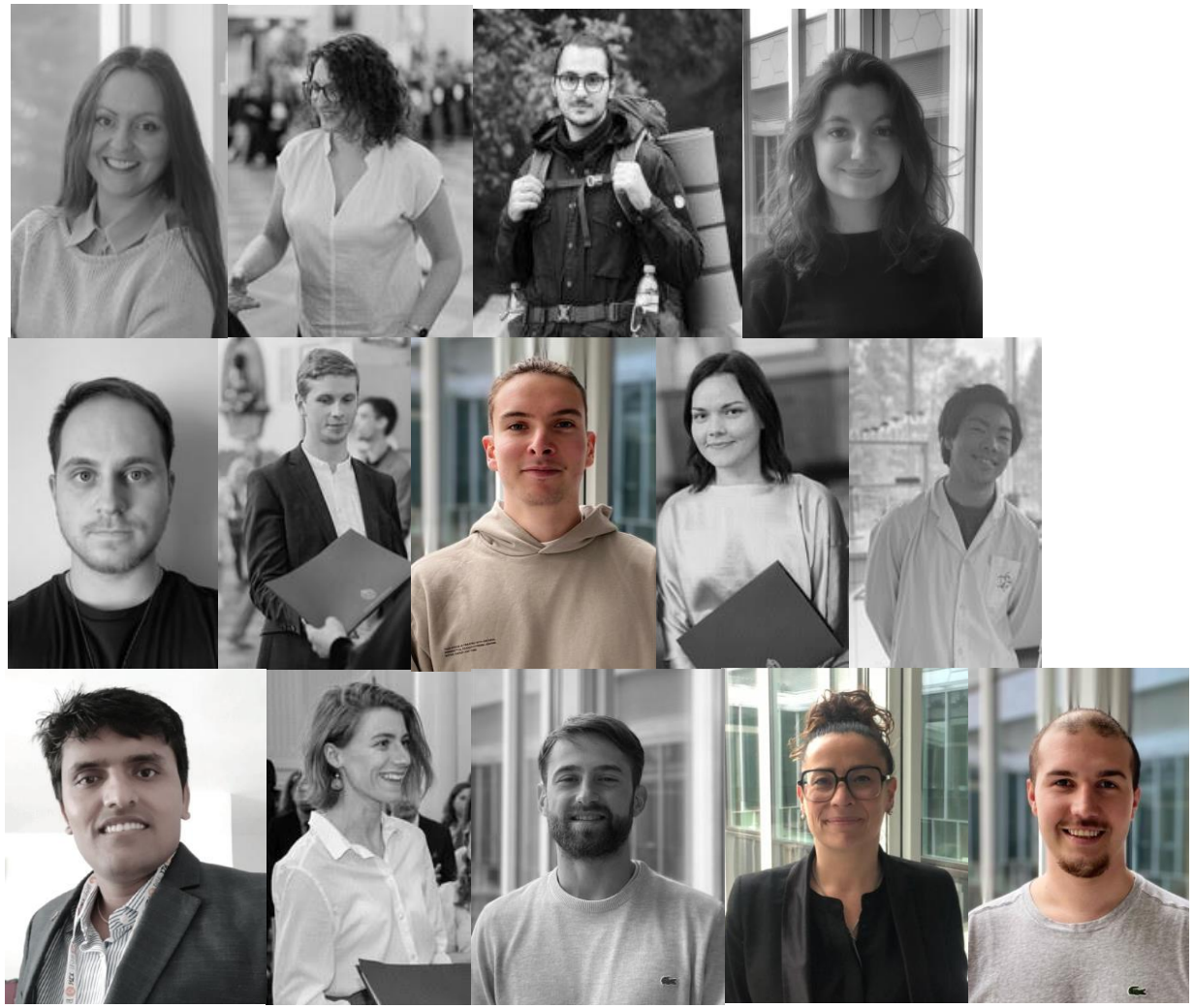

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