

# ImplantSens

European Training Network for development of implantable biosensors

## Early stage researcher position at University of Limerick Bernal Institute

### ESR6: Mesoporous electrodes

The fellow will prepare a library of mesoporous gold electrodes with different properties (film thickness, pore size and pore shape) using magnetron sputtering and electrochemical deposition methods. The properties of the electrodes will be tailored to enable controlled immobilization of enzymes for direct electron transfer between enzymes and electrodes. He/she will characterize the performance of enzymatic sensors in sample matrices under varying conditions and integrate the sensors into an implantable system.

#### Planned Secondments:

- Ruhr-University Bochum - Design of redox polymers and development of enzyme switching protocols
- CSIC - Institute of Catalysis Madrid - Covalent immobilization of redox enzymes to electrodes.
- Aptusens Malmoe - Biomedical evaluation of biosensors operating ex vivo under homeostatic conditions.

Employment: The Fellow will be employed on a full-time specific purpose contract for a period of three years.

#### **About the Employer**

The University of Limerick (UL) has over 14,000 students and 1,400 staff. The Bernal Institute at the University was established in 2016 with a capital investment of >€100 M and is comprised of 20,000 m<sup>2</sup> of contiguous, modern purpose-built offices and laboratories. The Institute houses a multidisciplinary team of over 350 scientists (chemistry, materials science, physics and biochemistry) and engineers (mechanical, aeronautical, biomedical, manufacturing and electronic) who undertake research in the design, synthesis, processing, characterization, modification, modeling and application of materials.

This position will be in the group of Prof. Edmond Magner and Dr. Uszula Salaj-Kosla (currently 4 PhD students and 2 visiting researchers). The group has all of the equipment necessary for the preparation, characterisation and utilisation of a wide range of support materials for the immobilisation of enzymes. In addition to the collaborative network in IMPLANTSSENS, the group has extensive international collaborative linkages and typically host an average of 2-3 international researchers each year. The fellow will enrol in the structured PhD programme of the University and, as appropriate, take advanced technical modules together with a series of modules on transferable skills.

The University of Limerick hold a Bronze Athena Swan award, one of the first such awards in Ireland. The University has a strong focus on promoting the careers of women and female candidates are encouraged to apply.

