

**Eduart Gutiérrez**Soft Matter Nanotechnology Lab
at CIC biomaGUNE

Host. Sergio Moya

Electroconductive Copolymer Films (PPy-PPyCOOH) as Biocompatible Platforms for Electrochemical Applications



Tuesday, 7th May
12.00 p.m.

CIC biomaGUNE - Seminar Room

Electroactive polymers hold tremendous potential in various fields, including electronics, environmental remediation, sensors, and bioplayers. Among these polymers, polypyrrole (PPy) stands out due to its unique properties: high conductivity, ease of synthesis, excellent stability, biocompatibility, and good mechanical strength. These properties make PPy particularly attractive for biomedical applications, such as tissue regeneration scaffolds and biosensing platforms. Notably, PPy's electrical conductivity allows its use as an electrode modifier or signal transducer in biosensors. Additionally, PPy can function as a semipermeable protective layer, enabling analyte access to receptors while simultaneously blocking harmful reagents.

This seminar will explore the successful synthesis of a conductive copolymer composed of unmodified pyrrole and pyrrole-3-carboxylic acid units. We will present spectroscopic and electrochemical techniques employed for synthesizing and characterizing these electrochemically synthesized copolymer films on a flat gold surface. Furthermore, as a proof-of-concept, we will discuss the transfer of these conductive copolymeric films to CMOS devices for applications in neural recording and ion delivery.