



The faculty of Biotechnology and Food Engineering
Seminar

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**Advances in Clean Generation of Electrical
Power Using Nanoporous Carbon/Redox-
Enzyme Biohybrids**

Abstract

Mesoporous carbon nanoparticles (mpCNPs) hold several promising characteristics, including tunable pore sizes, enhanced electronic conductivity, and high surface area, which are all highly attractive for bioelectronic applications such as biosensors and biofuel cells. We demonstrate that by the surface engineering of redox enzymes-coated mpCNPs in different configurations on glassy carbon collectors, we can advance some of the core problems hindering the implementation of biofuel cells as alternative power sources. Among these we introduce our efforts in designing enzymatic batteries which concurrently consume several fuels, provide deeper oxidation of substrates, operate under both external aerobic and anaerobic conditions, and show elevated discharge performance and direct electron transfer through self-wiring in confined volume nanopores.

Wednesday, 26.12.18, 14:00 – 15:00, Room 300

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