



Abstract From Reagentless Biosensors to Biofuel Cells and Self-Powered Bioelectrochemical Devices ⁺

Wolfgang Schuhmann

Analytical Chemistry—Center for Electrochemical Sciences (CES), Ruhr-Universität Bochum, Universitätsstr. 150, 44780 Bochum, Germany; wolfgang.schuhmann@rub.de

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Coupling of biocatalytic redox reactions with electrode surfaces is, on the one hand, the basis for the design of targeted biosensors, the electrochemical readout of DNA assays and, on the other hand, the basis for harvesting energy using biomolecules as recognition elements and catalysts. Due to the fact that the redox centers are often deeply buried within the protein structure of suitable enzymes, wiring of the enzyme integrated redox sites to the electrode surface is of utmost importance.

This presentation focuses on recent developments in:

- 1. Wiring of enzymes using designed redox polymers
- 2. Design of biofuel cells with increased open-circuit voltage
- 3. Self-powered biosensors and instrument-free substrate determination
- 4. Improving the power output of biofuel cells based on biosupercapacitors

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