Bioelectrochemistry for the Nexus of Energy Production and Environmental Application

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Bioelectrochemistry (BEC) is an interdisciplinary research field and combines biocatalysts and electrochemistry through the catalytic abilities of biomachineries to accomplish the production of energy or chemicals. The BEC process may act as a new approach for sustainable green chemistry and waste minimization. This seminar provides the state-of-the-art introduction of BEC basics and systems, with a focus on biocatalysts, configurations, electron uptake/conversion mechanisms, and the potential applications in energy and environment. Recent studies of BEC applications are discussed including CO_2 electroreduction, chemical synthesis, and H_2 production. The challenges about BEC systems are identified and potential solutions are proposed. Our works aim to encourage further research of BEC toward development of practical BEC systems for energy and environmental applications.

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