

Bachelor/Master Thesis**Characterization of bioelectrochemical energy systems
(biofuel / bioelectrosynthesis cells)**

Flexible starting date

Located at the Chair for Energy Process Engineering, a focus group for *Bioelectrocatalysis* is currently being established as part of the new assistant professorship for Distributed Energy Process Engineering. Biological catalysts (enzymes, microorganisms, etc.) offer various areas of application such as medical technology, waste treatment and environmental technology, and they have numerous advantages over conventional catalytic systems. The “building blocks” of biological origin of the bioelectrochemical systems are often less sensitive to contamination and act more specific in heterogeneous substrate media. Their origin from renewable sources, the mostly biocompatible, non-toxic properties, as well as the possible operation under moderate conditions (pH, temperature, pressure) make electroactive biocatalysts particularly interesting for applied fundamental research on alternative energy systems.

The project portfolio and available theses are constantly adapting, please inquire by email if you are interested.

Requirements:

- a high degree of initiative, motivation, ability to quickly work independently and in a self-determined manner, good organization skills
- enjoying experimentation on a small scale **or** enjoying detailed theoretical work
- familiarity with work in the chemistry laboratory is advantageous (pipetting, clean work, dexterity), **or** experience with publication databases, simulations, modeling, project planning or programming
- working language: English or German

Literature:

Herkendell, K. Status Update on Bioelectrochemical Systems: Prospects for Carbon Electrode Design and Scale-Up. *Catalysts* **2021**, *11*, 278.

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