

## Microbial resources mining for primary microbial electrochemical technologies

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Primary microbial electrochemical technologies (METs) interface microorganisms and electrodes and are based on the functional connection of the microbial metabolism and an electric current flow through microbial extracellular electron transfer. They can be applied for the treatment of waste streams of different chemical composition as well as complexity.

Highly diverse electroactive microbial communities establish from complex waste sources and can successfully treat it while more defined substrates result in highly specialized microbial communities of low diversity. The organization of electroactive microbial communities in flexible food webs is only little investigated and the specific interactions and structure-function relationships including functional redundancy are hardly understood.

A better understanding of the ecological niche of electroactive microorganisms will help to improve their functional performance and widen the application of METs to different waste resources.