

Effective anaerobic digestion by removing organic acids using a microbial fuel cell

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Anaerobic digestion is a biological process that treat wastewater and produces gases principally composed of methane and carbon dioxide. The process consists of the decomposition (hydrolysis) of plant or animal matter, the conversion of decomposed matter to organic acids, the acids are converted to methane gas. Because of slow growth rate of methanogens, methane producing microorganism, the final step is the rate limiting step in the whole process. In this study, effective anaerobic digestion was proposed by removing organic acids which are produced in anaerobic digestion of wastewater using a microbial fuel cell. A microbial fuel cell (MFC) is a device that converts organic substrates to electricity using microorganisms as the biocatalyst. As the microbes break down the organic material in the wastewater, they transfer electrons to anode electrode, which can be harvest from the external load.