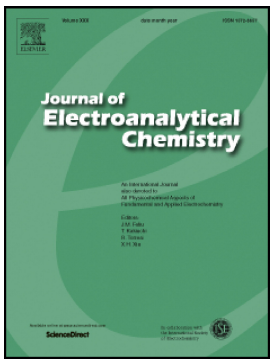

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Thermally-treated algal suspensions as fuel for Microbial Fuel Cells

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Abstract

Three thermally-treated *Chlorella vulgaris* algal suspensions were fed to two-compartment microbial fuel cells (MFCs) for more than three months and performance was monitored in order to determine whether this type of fuel is suitable for MFC and if the thermal treatment of the algae attains any improvement in the efficiency of the system. The algal suspensions were divided into three portions and conditioned thermally at 25, 55 and 95 ºC, before being introduced in each MFCs. Results obtained by the three MFCs demonstrate that algal suspension is a good fuel for the electrochemical devices and that the temperature conditioning of the fuel influences on the performance of the technology in a different way after long times of operation. Thus, within the operation condition setup, the best operation performance was obtained by the cell fed with algae conditioned at the lowest temperature, the polarization curves demonstrated that performance was improved after long operation times when a higher temperature conditioning was performed.