## ADDITION OF CO-SUBSTRATE AS A STRATEGY TO IMPROVE THE PERFORMANCE OF MICROBIAL FUEL CELLS TREATED WITH MICROALGAE CHLORELLA VULGARIS BIOMASS

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## Abstract

In the present study, the effect of adding glucose as an auxiliary substrate on the performance of two-compartment microbial fuel cells (MFCs) during the conversion of dry biomass of Chlorella vulgaris (CA) to bioelectricity. addition of glucose as an auxiliary substrate at the MFC anode effectively increased the maximum power density by 22.08% and 21.71% compared to the dried algal biomass-treated MFC (MFC-CA) and the glucose-treated MFC (MFC-G), respectively. The maximum power densities in MFC-CA and MFC-G were19.17 mW/m<sup>2</sup> and 19.11 mW/m<sup>2</sup>, respectively. There was no significant difference in maximum power density between MFC-CA and MFC-G. Therefore, our study showed that the presence of an auxiliary substrate can have a significant effect on MFC performance. The present study also demonstrated that Chlorella vulgaris dry biomass can be used as a green substrate for bioelectricity generation in MFC anodes.

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