

*Gain High Voltage of Microbial Fuel Cell with DC/DC Boost Converter**김중래<sup>†</sup>, 송영은**부산대학교**(j.kim@pusan.ac.kr<sup>†</sup>)*

*To increase of voltage source from microbial fuel cells (MFCs), setting up several unit cells in series connection has been researched. However, there has been a critical problem as potential drop when linking unit cells in series. Therefore, MFCs requires well developed connection-strategy to external device such as boost converter or a capacitor. In this study, DC/DC boost converter (LTC3108) was applied to increase the voltage for flat-plate MFC (FPM). FPM connected dual air-cathode MFC in parallel can increase current. The FPM produced power up to 1.546 mW with an output voltage of around 0.6 V on an open circuit voltage (OCV). However, when FPM was connected with LTC3108, the voltage boosted to 3.3 V and 5.0 V with 0.301 mW at approximately 20 % of the peak efficiencies on artificial wastewaters. This system can be easily applied to operate LED lamp, clock and motor with boosted power densities. These results provide strategies of MFCs for field applications using module systems for higher power generation required for simultaneous and sustainable bioenergy recovery and waste water treatment.*