Enzymatic Biofuel Cells with Thin Type Electrodes

김동섭, 김형렬, 김은정, 김경래, 유하영[1], 이진영[1], 김승욱†
고려대학교; [1]상명대학교
(kimsw@korea.ac.kr†)

The enzymatic fuel cell (EFC) is considered as an attractive candidate for power generation and implantable medical devices. EFC typically yields lower power and more difficult to fabricate than conventional fuel cell using inorganic catalysts. The intended application of enzymatic fuel cell as one of small scale power devices is tightly associated with challenging issues, related to the miniaturization of such system. In this study, the electrochemical bio fuel cell was developed with a thin film type system. The developed EFC with film type was designed containing the enzyme immobilization process on to aluminum carbon (AlC) and gold (Au) electrodes. The main point of this research is to investigate the effect of different designs of the film type electrodes, on the power production, the open circuit output potential and power density. Also, the film type of developed EFC was evaluated using redox reaction analysis by various cyclic voltammetry data in potentiostat.