

## Fabrication of Polypyrrole-Coated Carbon Nanofiber Composite Electrode for Microbial Fuel Cell

김승영, 노성희<sup>†</sup>

조선대학교

(rohsh@chosun.ac.kr<sup>†</sup>)

Microbial fuel cells (MFCs) have emerged as a sustainable technology that can act as both wastewater treatment and energy yielding process. The anodic material, which contains a matrix for the attachment of the microorganisms, is usually a limiting factor in power production in an MFC. However, the hydrophobic surface property of graphite electrode compromises its ability for the bacterial attachment and electron transfer via shuttling of bacterial excreted mediators. Modification of the surface morphology and property might enhance the attachment and the viability of the bacteria, facilitating the extracellular electron transfer mechanism, therefore enhancing the MFC performance. In this study, we constructed MFCs of polypyrrole (PPy) coated carbon nanotube (CNT) composite as an electrode material and *Shewanella oneidensis* as the biocatalyst to increase power density.