



Biomedical Engineering Seminar Series

1st Semester, Academic Year 2018

Date: November 13, 2018

Time: 10.00 AM – 11.00 AM

Room 6373, 3rd level, Building 3,

Faculty of Engineering, Mahidol University



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Optimization and Application of Redox Polymers for Biosensors and Biofuel Cells

An important goal for development of enzyme electrodes is to ensure efficient electron transfer between the enzyme and the electrode. Specially adapted redox polymers are used for the modification of enzyme electrodes. Redox polymer not only serves as an electron relay, but also provides an immobilization matrix capable of producing stable enzyme/polymer films. In this work, redox polymers modified with Osmium-complexes or with redox-active dye molecules are used. Both redox mediators have a low formal potential (E). The advantage of low E is that the co-oxidation of interference molecules can be minimized. Furthermore, a low E bioanode in combination with a high formal potential biocathode enables the construction of biofuel cells with a high open circuit voltage.



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