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PII: S1385-8947(18)31734-0
DOI: https://doi.org/10.1016/j.cej.2018.09.026
Reference: CEJ 19865

To appear in: *Chemical Engineering Journal*

Received Date: 23 May 2018
Revised Date: 3 September 2018
Accepted Date: 4 September 2018

Please cite this article as: A. Kisieliute, A. Popov, R-M. Apetrei, G. Cârâc, I. Morkvenaite-Vilkonciene, A. Ramanaviciene, A. Ramanavicius, Towards Microbial Biofuel Cells: Improvement of Charge Transfer by Self-Modification of Microoganisms with Conducting Polymer – Polypyrrole, *Chemical Engineering Journal* (2018), doi: https://doi.org/10.1016/j.cej.2018.09.026

Towards Microbial Biofuel Cells: Improvement of Charge Transfer by Self-Modification of Microoganisms with Conducting Polymer – Polypyrrole

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Abstract

In this research, we are reporting the application of microorganisms modified by a conducting polymer – polypyrrole (Ppy) – for the improving of microbial biofuel cells. The synthesis of polypyrrole was assisted by metabolic and other biochemical processes that occurs in microorganisms. Therefore, in this research reported Ppy formation method can be recognized as environmentally friendly. During herein reported synthesis of Ppy, the cell walls and some other structures of *Aspergillus niger and Rhizoctania sp* selected for this research were modified by the formed Ppy, which facilitated the transfer of electrical charge generated by microorganisms towards an electrode. Two electrochemical methods: (i) amperometric measurements at constant