**Graphical Abstract**

There is a significant interest in electrochemical behaviour of microbial cells from a biocathode microbial fuel cell (MFC) functioning with wastewater was evaluated by cyclic voltammetry. Dr.S.Venkata Ramana and his co workers at Instituto Superior Tecnico (IST) and Universidade Nova de Lisboa, Portugal studied In-situ electrochemical behaviour of biocathode microbial fuel cell (MFC). Different controls using sterile media and membranes covering the electrodes were performed and compared with the regular biocathode results. In the biocathode chamber, the presence of bacteria was associated with the enhanced active redox processes and with the higher electrochemical reduction of oxygen activity. The present study is a contribution to the understanding of the viability and advantages of the biocathodes use in MFC.

