World Academy of Science, Engineering and Technology
International Journal of Biotechnology and Bioengineering
Vol:9, No:06, 2015

Synchrotron X-Ray Based Investigation of Fe Environment in Porous Anode of Shewanella oneidensis Microbial Fuel Cell

Authors : Sunil Dehipawala, Gayathrie Amarasuriya, N. Gadura, G. Tremberger Jr, D.Lieberman, Harry Gafney, Todd Holden, T. Cheung

Abstract : The iron environment in Fe-doped Vycor Anode was investigated with EXAFS using Brookhaven Synchrotron Light Source. The iron-reducing Shewanella oneidensis culture was grown in a microbial fuel cell under anaerobic respiration. The Fe bond length was found to decrease and correlate with the amount of biofilm growth on the Fe-doped Vycor Anode. The data suggests that Fe-doped Vycor Anode would be a good substrate to study the Shewanella oneidensis nanowire structure using EXAFS.

Keywords : EXAFS, fourier transform, Shewanella oneidensis, microbial fuel cell
Conference Title : ICBN 2015 : International Conference on Biotechnology and Nanotechnology
Conference Location : New York, United States
Conference Dates : June 04-05, 2015

Open Science Index, Biotechnology and Bioengineering Vol:9, No:06, 2015 publications.waset.org/abstracts/30103/pdf