**Investigation of a two-dimensional model on microbial fuel cell with different biofilm porosities and external resistances**

Wen-Fang Cai1, Jia-Feng Geng2, Kai-Bo Pu1, Qian Ma1, Deng-Wei Jing2, Yun-Hai Wang1, 3\*，Qing-Yun Chen2, 3, Hong Liu4

*1Department of Environmental Science and Engineering, and 2**State Key Laboratory of Multiphase Flow in Power Engineering,* *Xi'an Jiaotong University, Xi'an 710049 China,*

*3 Guangdong Xi'an Jiaotong University Academy, Foshan 528000 China,*

*4**Department of Biological and Ecological Engineering, Oregon State University, Corvallis OR 97331 USA*.

\*Corresponding author: [wang.yunhai@mail.xjtu.edu.cn](mailto:wang.yunhai@mail.xjtu.edu.cn)

**Supplementary information:**

**F:\cai文献\阳极模拟\revised\figures\3D模型验证.tif**

Fig. S1 Acetate concentration distribution of 3D model at 2 d: a) slice at xy section and b) isosurface of acetate concentration

F:\cai文献\阳极模拟\孔隙率\图表新\c_Xe contour\不同孔隙率下不同时间Xe变化.tif

Fig. S2 Simulation results for average exoelectrogens concentration at decay phase with different biofilm porosities.



Fig. S3 Extracellular mediator concentration along the anode vertical direction with varying biofilm porosities at 18 d.

F:\cai文献\阳极模拟\revised\figures\外电阻对阳极活化过电势的影响\anode over-potential.tif

Fig. S4 Anode over-potential with different external resistance at 10 d.