

Supplementary information

A facile synthesis of molybdenum carbide nanoparticles-modified carbonized cotton textile as anode material for high-performance microbial fuel cell

Lizhen Zeng,^{a,c} Shaofei Zhao,^b Lixia Zhang^d and Miao He^{*a}

^a *School of Physics and Optoelectronic Engineering, Guangdong University of Technology, Guangzhou 510006, China. E-mail: herofategdut@126.com*

^b *School of Chemical Engineering and Light Industry, Guangdong University of Technology, Guangzhou 510006, China*

^c *Analysis and testing center, South China Normal University, Guangzhou 510006, China*

^d *CAS Key Laboratory of Environmental and Applied Microbiology, Environmental Microbiology Key Laboratory of Sichuan Province, Chengdu Institute of Biology, Chinese Academy of Sciences, Chengdu 610041, China*

Figures:

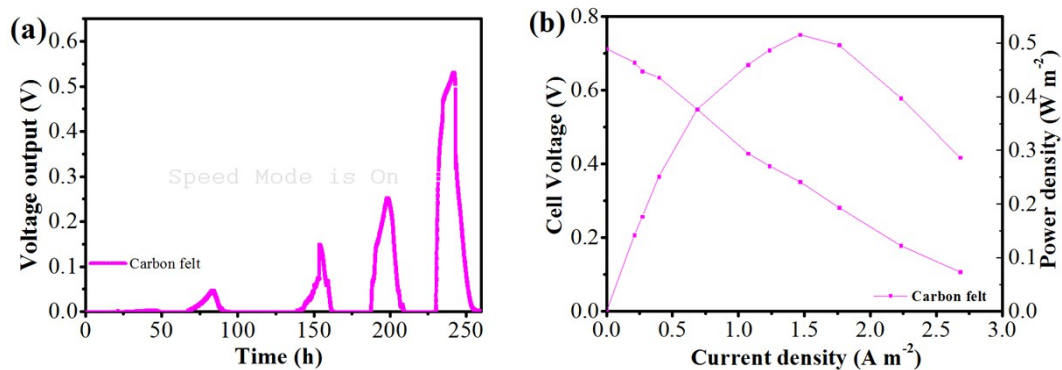


Fig. S1 Voltage output versus time during start-up of the MFCs with carbon anode with 1000 Ω resistance loading (a); Polarization curve and power output of carbon anode in the MFCs (b).

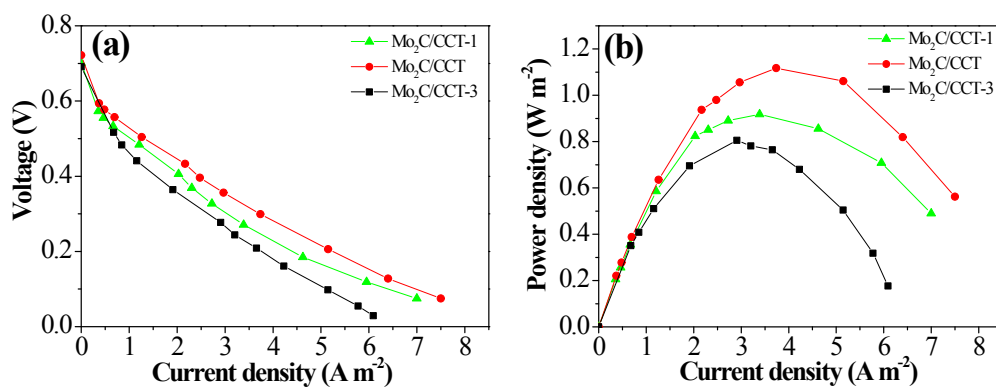


Fig. S2 Polarization curves (a) and Power outputs (b) of different amount Mo₂C/CCT anodes in the MFCs.

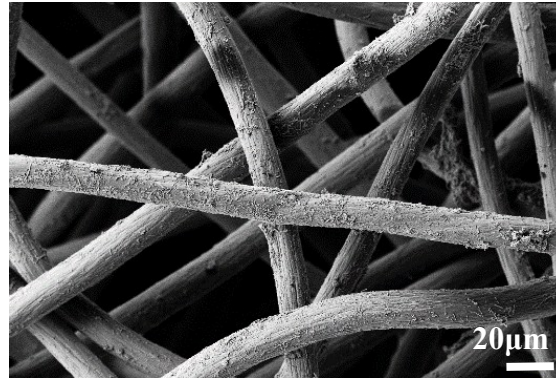


Fig. S3 SEM images of the electroactive biofilm grown on the CF anode after 2-months of operation.

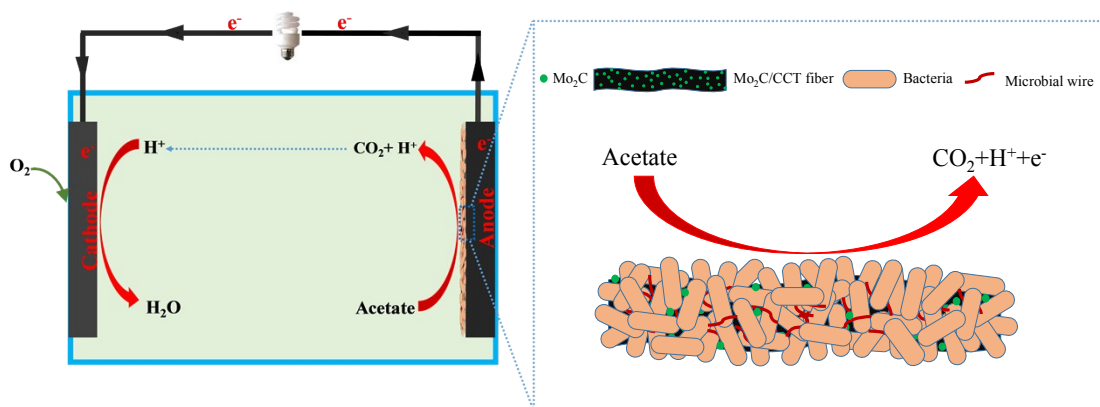


Fig. S4 Illustration of electron transfer process from Mo₂C/CCT biofilm in the Mo₂C/CCT of an MFC.

Table:

Tab.S1 Summary of performance of MFCs with different anode materials in the literatures

anode	Inoculum	P_{\max} (mW m ⁻²)	Reference
CSE	Mixed culture	759 ± 38	[4]
thornless CSE	Mixed culture	425 ± 21	[4]
brush	Mixed culture	830 ± 42	[4]
NC@CCT	Mixed culture	931 ± 61	[8]
LSC	Mixed culture	701 ± 44	[24]
NCP/LSC	Mixed culture	1090 ± 72	[24]
graphite plate	Mixed culture	383 ± 21	[24]
reticulated vitreous carbon	Mixed culture	650 ± 33	[24]
graphene-coated sponge	Mixed culture	612 ± 39	[24]
GL/GP-15	Mixed culture	670 ± 34	[32]