

Electrodepositing Technique for Improving the Performance of Crystalline and Amorphous Carbonaceous Anodes for MFCs

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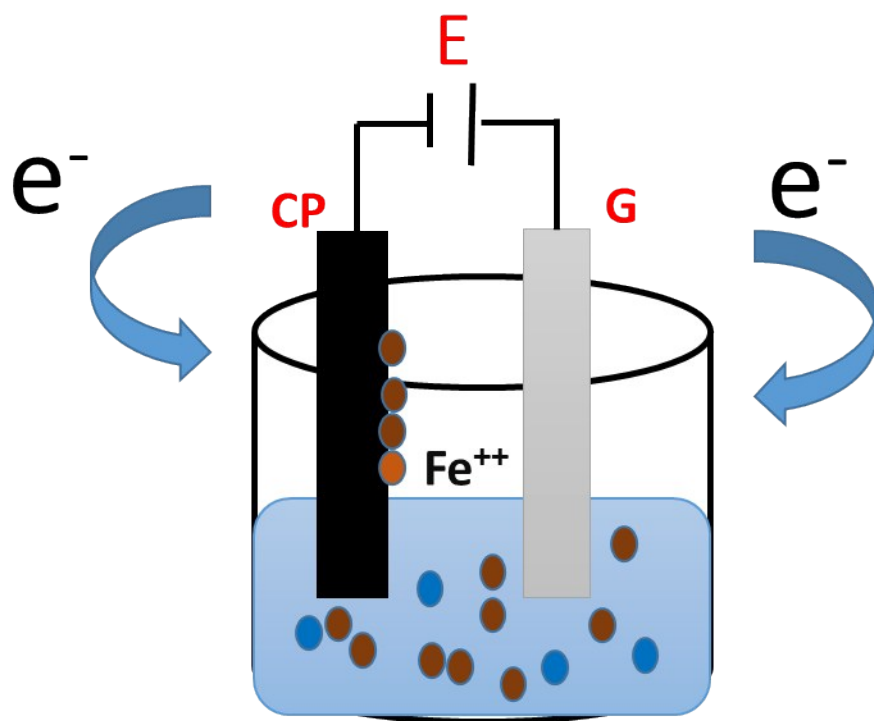


Fig.S1: Electrolytic cell for the deposition of iron particles on the CP cathode (CP as an examples of the different electrodes).

Table S1: Chemical Characterizations of food wastewater.

pH	Initial COD	Na ⁺	Ca ⁺²	Total P	SO ₄ ⁻²	K ⁺	TDS	Conductivity
6.5	960 mg/l	355.278 mg/l	33.8 mg/l	17.13 mg/l	28 mg/l	350.4 mg/l	1760 mg/l	3580 μS/cm

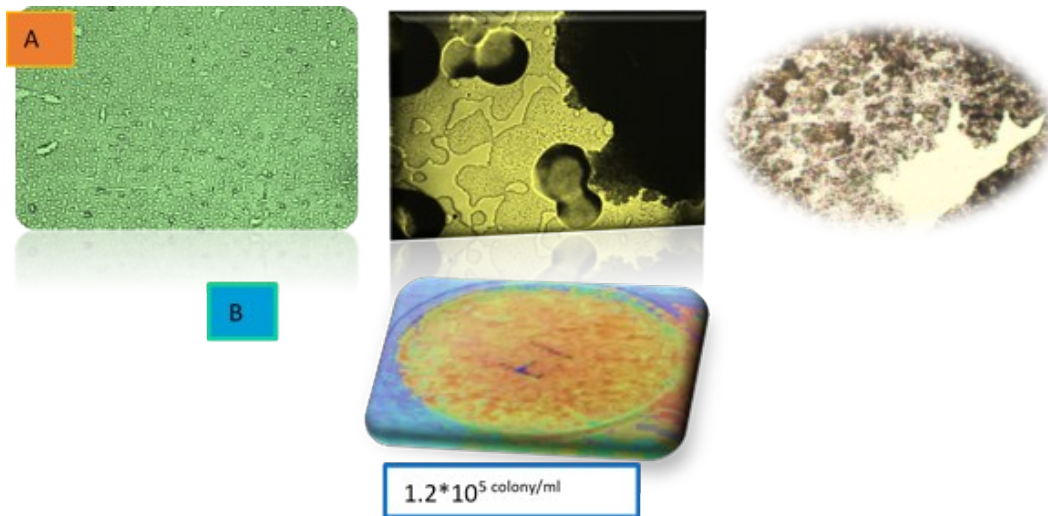


Fig.S2: (A) Microscopic image of the microorganisms in the utilized food wastewater.

B) Agar test photo image

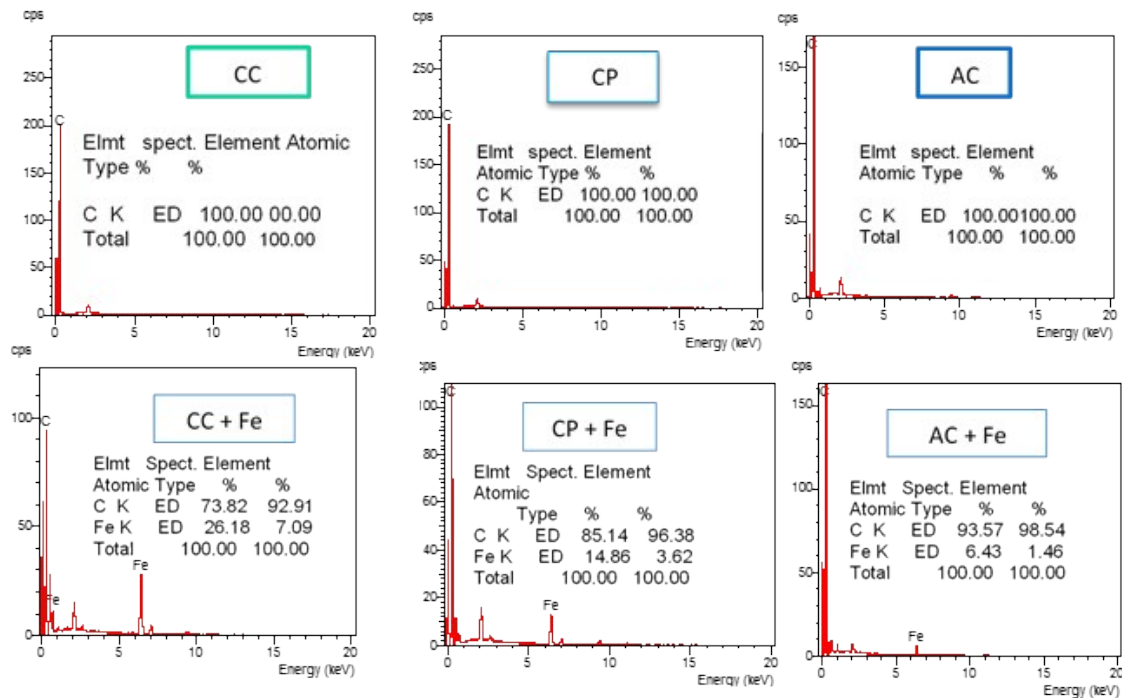


Fig. S3: EDX analysis for different anode materials (different crystallinity) before and after treatment.

Table S2: The electrochemical measurements for different anode modification materials.

Anode		Anode Potential (V)		OCV (V)		Time (h)
		From	To	From	To	
Carbon cloth	Untreated	0.222	-0.205	0.478	0.806	100.5
	Treated	0.213	-0.218	0.489	0.827	79
Carbon paper	Untreated	0.217	-0.112	0.481	0.748	75
	Treated	0.203	-0.209	0.498	0.806	69
Activated carbon	Untreated	0.379	-0.268	0.381	0.825	133
	Treated	0.308	-0.286	0.344	0.835	92.5

Table S3: Summarizes the results of electrochemical measurements for the MFCs worked by the treated and untreated anodes.

Anode		Current density		Power density	
		mAm ⁻²	Increase (%)	mWm ⁻²	Increase (%)
Carbon cloth	Untreated	252	231.3	80.4	47.5
	Treated	835		118.6	
Carbon paper	Untreated	186.8	194.6	51.6	65.8
	Treated	548		85.6	
Activated carbon	Untreated	1690	42	335	18.5
	Treated	2400		397	

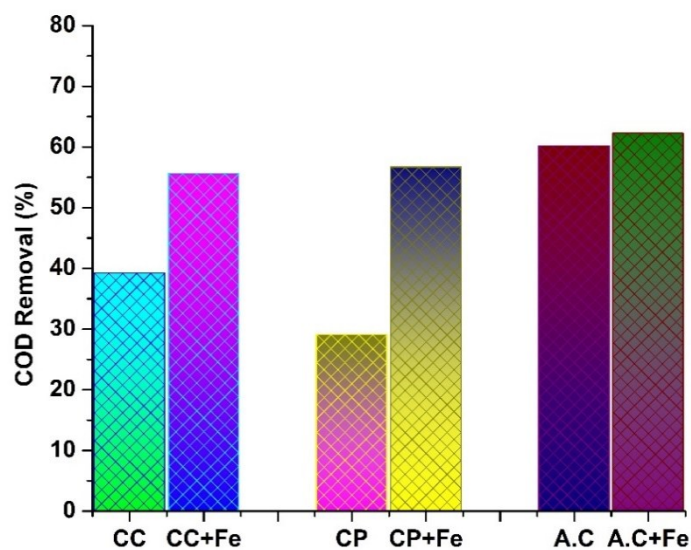


Fig.S4: COD removal of wastewater treated in MFC cell using different anode materials treated and untreated with electrodeposition technique.