

Supplementary information

Enhanced methane producing microbial electrolysis cells for wastewater treatment using poly(neutral red) and chitosan modified electrodes

Hathaichanok Seelajaroen,^{*a} Sabine Spiess,^{*b,c} Marianne Haberbauer,^{b,c} Melissa Maki Hassel,^c Abdalaziz Aljabour,^a Sophie Thallner,^{b,c} Georg M. Guebitz,^{c,d} and Niyazi Serdar Sariciftci^a

^a Linz Institute for Organic Solar Cells (LIOS), Institute of Physical Chemistry, Johannes Kepler University Linz, Altenberger Strasse 69, 4040 Linz, Austria
E-mail: hathaichanok.seelajaroen@jku.at

^b K1-MET GmbH, Stahlstrasse 14, 4020 Linz, Austria
E-Mail: sabine.spiess@k1-met.com

^c acib GmbH (Austrian Centre of Industrial Biotechnology), Krenngasse 37/2, 8010 Graz, Austria

^d Department of Agrobiotechnology, Institute of Environmental Biotechnology, University of Natural Resources and Life Sciences Vienna, Konrad-Lorenz-Strasse 20, 3430 Tulln an der Donau, Austria

Cost studies of carbon felt modifications using poly(neutral red) and chitosan were performed by considering only the prices of chemicals used in the processes. The prices are store price therefore; the taxes and shipping fees are excluded from the calculations. The suppliers located in Germany were chosen and the prices for bulk amounts were preferred. It should be noted that the prices may varied with date and suppliers.

Table S1. Cost study of poly(neutral red) modification.

Chemical	CAS number	Supplier price €/g	€/m ²	Supplier	Link
Neutral red	553-24-2	2.604	32	Livchem Logistics GmbH	https://marketplace.chembid.com/en/neutral-red-high-purity-biological-stain-100g.html
KNO ₃	7757-79-1	0.0366	46	Neofroxx GmbH	https://marketplace.chembid.com/en/kaliumnitrat-zur-analyse-500-g.html
K ₂ HPO ₄	7758-11-4	0.03152	3	Neofroxx GmbH	https://marketplace.chembid.com/en/di-kaliumhydrogenphosphat-wasserfrei-zur-analyse-5-kg.html
KH ₂ PO ₄	7778-77-0	0.045	22	Neofroxx GmbH	https://marketplace.chembid.com/en/kaliumdihydrogenphosphat-zur-analyse-500-g.html
total			103		

Dated: 19th May 2020 from the given links

Table S2. Cost study of chitosan modification.

Chemical	CAS number	Supplier price €/g	€/m ²	Supplier	Link
Conc HNO ₃	7697-37-2	19.84/L	855	Neofroxx GmbH	https://marketplace.chembid.com/en/salpetersaeure-65-zur-analyse-2-5-l.html
Ethanol	64-17-5	17.12/L	236	Sigma-Aldrich	https://www.sigmaaldrich.com/catalog/product/mm/100983?lang=de&region=AT
EDC	1892-57-5	9.24/mL	3525	Sigma-Aldrich	https://www.sigmaaldrich.com/catalog/product/aldrich/39391?lang=de&region=AT
NHS	6066-82-6	1.2	299	Livchem Logistics GmbH	https://marketplace.chembid.com/en/n-hydroxysuccinimide-98-100g.html
Chitosan	9012-76-4	5.29	456	Livchem Logistics GmbH	https://marketplace.chembid.com/en/chitosan-average-m-w-100000-300000-500g.html
Acetic acid	64-19-7	42.8/L	36	Sigma-Aldrich	https://www.sigmaaldrich.com/catalog/product/sigald/a6283?lang=de&region=AT
total			5407		

Dated: 19th May 2020 from the given links