

Supporting Information

Electrochemical oxidation of guaiacol to increase its biodegradability or just remove COD in terms of anodes and electrolytes

Dan Shao^{1, 2}, *Wei Chu*^{1*}, *Xiaoliang Li*², *Wei Yan*^{2**}, *Hao Xu*²

¹ Department of Civil and Environmental Engineering, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong

² Department of Environmental Science and Engineering, Xi'an Jiaotong University, Xi'an 710049, China

AUTHOR INFORMATION

Corresponding Authors

*(Wei Chu): wei.chu@polyu.edu.hk

** (Wei Yan): yanwei@mail.xjtu.edu.cn

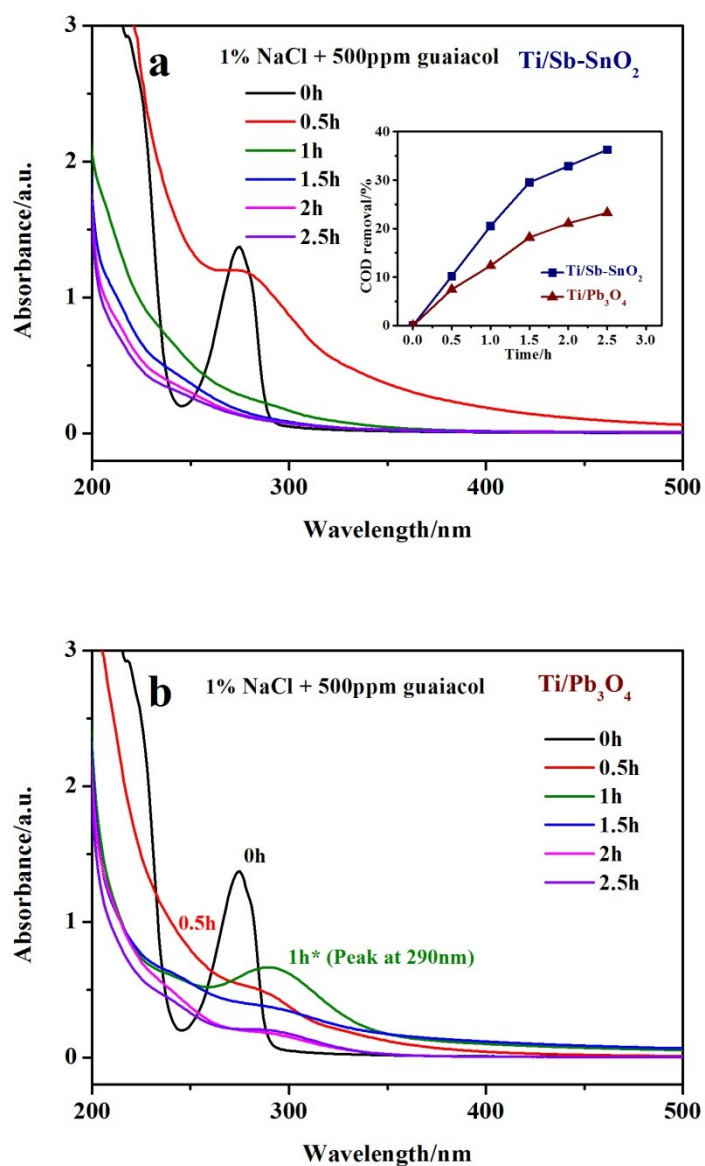


Fig. S1 UV-Vis absorption spectra of the solution at different time periods during treatment by Ti/Sb-SnO_2 (a) and $\text{Ti/Pb}_3\text{O}_4$ (b) (1 wt% NaCl as the supporting electrolyte)

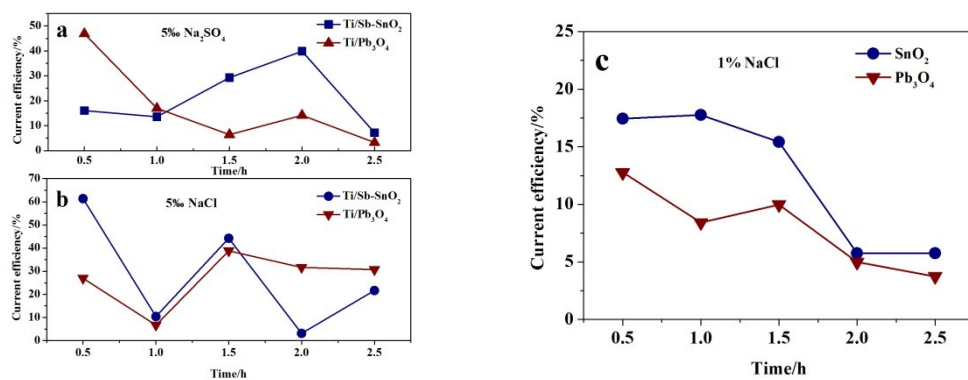


Fig. S2 Current efficiencies of Ti/Sb-SnO₂ and Ti/Pb₃O₄ at different time period
a) in 5wt% Na₂SO₄ b) in 5wt% NaCl c) in 1wt% NaCl

Table S1 Typical identified compounds in samples at different time period by GC-MS method (supporting electrolyte 5 wt% Na₂SO₄)

Compound Name	Ti/Sb-SnO ₂						Ti/Pb ₃ O ₄					
	0h	1h	2h	3h	4h	5h	0h	1h	2h	3h	4h	5h
2-methoxy-Phenol (guaiacol)	+	+	+	+	+	+	+	+	+	+	+	+
1-chloro-2-methoxy-Benzene	+	+	+	+	+	+	+	+	+	+	+	+
2-methoxy-2,5-cyclohexadiene-1,4-dione	—	+	+	+	+	+	—	+	+	+	+	+
1,2-Benzoquinone	—	+	+	+	+	+	—	+	+	+	+	+
1,4-Benzoquinone	—	+	+	+	+	+	—	+	+	+	+	+
Maleic acid	—	+	+	+	+	+	—	—	—	+	—	+
Isovaleric acid	—	—	+	—	+	+	—	—	—	—	—	—
Glyceraldehyde	—	+	—	—	—	+	—	—	—	—	—	—
4-oxo-Pentanoic acid	—	+	+	+	+	+	—	—	—	—	—	—
2-Propenal	—	—	—	—	+	+	—	—	—	—	—	—
3-methyl-2-oxo-cyclopentanecarboxylic acid	—	—	—	—	—	—	—	—	+	—	+	—

Table S2 Typical identified compounds in samples at different time period by GC-MS method (supporting electrolyte 5 wt% NaCl)

[illegible]