

# Accepted Manuscript

Photocatalytically-assisted electrooxidation of herbicide fenuron using a new bifunctional electrode  $\text{PbO}_2/\text{SnO}_2\text{-Sb}_2\text{O}_3/\text{Ti}/\text{Ti}/\text{TiO}_2$

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1     **Photocatalytically-assisted electrooxidation of herbicide fenuron using a**  
2     **new bifunctional electrode PbO<sub>2</sub>/SnO<sub>2</sub>-Sb<sub>2</sub>O<sub>3</sub>/Ti//Ti/TiO<sub>2</sub>**

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13  
14     **Abstract**

15     The degradation of the herbicide fenuron was investigated using a new porous bifunctional  
16     electrode where the electrooxidation takes place on one side and the photocatalysis on the  
17     other side. The characterization of the synthesized bifunctional electrode (PbO<sub>2</sub>/SnO<sub>2</sub>-  
18     Sb<sub>2</sub>O<sub>3</sub>/Ti//Ti/TiO<sub>2</sub>) was performed by scanning electron microscopy, energy dispersive X-ray  
19     spectrometry and X-ray diffraction analysis and showed that the anodic side (Ti/SnO<sub>2</sub>-  
20     Sb<sub>2</sub>O<sub>3</sub>/PbO<sub>2</sub>) is covered with a tetragonal β-PbO<sub>2</sub> film and that the photocatalytic side  
21     (Ti/TiO<sub>2</sub>) consists of an anatase phase of TiO<sub>2</sub>. The single application of electrooxidation  
22     achieved 87.8% fenuron degradation and 84.1% chemical oxygen demand (COD) removal

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