

Electrodes for Electrochemical Treatment of Sewage



Water Treatment

Description

This invention is related to a method for manufacturing dimensionally stable anodes of $\text{Ti/TiO}_2/\text{RuO}_2/\text{SnO}_2\text{-Sb}_2\text{O}_5\text{-RuO}_2$ for the electrochemical treatment of sewage.

Application

The use of electrochemical processes for wastewater treatment is becoming increasingly important because of its versatility, miniaturization and automation capabilities. This invention consists in the development of dimensionally stable electrodes (anodes) of $\text{Ti/TiO}_2/\text{RuO}_2/\text{SnO}_2\text{-Sb}_2\text{O}_5\text{-RuO}_2$ for the electrochemical treatment of sewage. The use of anodes allows to completely degrading contaminants by total oxidation or to transforming them into simpler products. Incorporating ruthenium as coating of the electrodes solves several problems presented by electrode coatings of mixed tin and antimony, providing them with a longer lifetime, more stability in continuous use or pH changes and more chemical resistance, avoiding the inactivation of the

electrode. In the same way ruthenium allows to use electrodes for generating active chlorine from chloride ions dissolved in the medium, and for generating oxygen in an acid medium in the presence of Na_2SO_4 through electrochemical oxygen evolution mechanism (generation of O_2). Electrodes can also be used for the generation of oxygen in an acid medium in the presence of Na_2SO_4 through electrochemical oxygen evolution mechanism (generation of O_2).

Stage of Development

Experimental prototype

IP Status

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Inventor:

Dr. Alfonso Durán Moreno
(Facultad de Química)

Market potential

In Mexico there is an increasing investment in wastewater treatment by both public and private sectors. Currently only 50% of sewage goes into treatment. However the goal is to reach 100% by 2030.

Transferring conditions

- ✓ Technological development agreement (optional)
- ✓ Licensing (includes front payment and royalties)



Contacto UNAM:

UNAM Contact:

César León
cesar.leon@unam.mx
+52 (55) 56 58 56 50
Ext. 208

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