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DEGRADATION OF ORGANIC WASTEWATER BY A DOUBLE-WORKING ELECTRODE ELECTROCHEMICAL METHOD

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Abstract

Electro-chemical method for organic wastewater treatment is based on the organic matters degradation by electrode in electrochemical cell under electro-catalysis. This degradation process is implemented by the direct oxidation of organic matters on the surface of electrode, indirect oxidation of organic matters by the strong oxidizing agent produced by electrode, the application of fuel cell and so on.

In this work, a novel double-working electrode electrochemical cell for organic matter treatment was introduced and tested. In this cell, Ti-based anode is employed for the production of strong oxidant and carbon based cathode is used for synergistic effect. The result showed that compared to the traditional single working electrode cell, the double-working electrode cell showed better removal performance and energy-saving potential. Besides, during the whole running time, the pH value of the solution was controlled closed to neutral by the double-working electrode method.

Keywords

Electrochemical; Organic water treatment; Double-working electrode; Ti-based anode