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## **ELECTROCHEMICAL DEGRADATION OF PHARMACEUTICAL EFFLUENTS ON CARBON-BASED ELECTRODES**

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### **Abstract**

This study aimed to characterize the electrochemical behaviors of three types of carbon-based electrodes, *i.e.*, boron-doped diamond (BDD), glassy carbon (GC), and multiwall carbon-nanotubes-epoxy composite (CNT) electrodes in the presence of ibuprofen (IBP), which was chosen as a model of the pharmaceutical pollutant from water. Cyclic voltammetric results informed that CNT electrode allowed to reach the best oxidation current signal for IBP electrooxidation, which can be more enhanced by the presence of chloride in the supporting electrolyte. Under chronoamperometry (CA) and multiple-pulsed amperometry (MPA) applying conditions, CNT electrode exhibited the best performance in terms of the degradation and the mineralization efficiency. However, higher charge consumption was recorded in comparison with BDD electrode, which denoted a limited practical application for CNT electrode.

*Key words:* carbon-based electrode, electrochemical degradation, pharmaceutical effluent

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