

Development of electrodes for the electrochemical oxidation process of non-degradable organic compounds

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Many non-degradable organic compounds have been synthesized in the natural environment by the development of the chemical industry. In a common biological treatment processes, such compounds could be toxic to activated sludge and could even cause bioaccumulation. Fenton oxidation, ozonation, photocatalytic and UV radiation, etc. could be used as pretreatment processes. Among them, electrochemical oxidation is good at the pretreatment of the aforementioned organic compounds as an advanced oxidation process (AOP). In this study, dimensionally stable anodes (DSAs) for electrochemical oxidation reactions was introduced to convert highly anti-oxidative organic matters into biodegradable ones. The electrode was optimized and characterized physically and electrochemically for lower overpotential or higher current density of the oxidative reactions.

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