

**The study of platinum adsorbed oxygen in electrocatalytic oxidation of dioxin-like substance**

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It was studied the oxidative capability of platinum adsorbed oxygen at different potentials in electrocatalytic oxidation of dioxin-like substance in aqueous solutions. 2',7'-Dichlorofluorescein (DCF) was picked out as model substance. The DCF molecular structure is more similar to the structures of typical dioxins, but DCF isn't toxic. DCF is electrochemically inactive at the lower potentials than that of oxygen evolution. Oxidative destruction of DCF under potential of oxygen evolution was studied previously. It was interesting to study electrocatalytic oxidation DCF on platinized platinum electrode-catalyst at the lower potentials than that of oxygen evolution.

It was suggested the version of cyclic voltammetry for obtaining and studying of adsorbed oxygen. The method included the pretreatment for providing repeatability of conditions and electrode surface. The supporting was 1M KOH. It was studied the influence of sweep rate, upper value of cycling potential and DCF solutions concentration. The low value of cycling potential was 0 V (RHE). The upper values of cycling potential were varying from 0.5 V to 1.4 V. The adsorption of DCF on platinized platinum was determined. It was determined the quantities of electricity to oxygen adsorption in the supporting electrolyte and in the DCF solutions. It was obtained the part of oxygen to oxidation adsorbed DCF at different potentials. It was established that the oxygen adsorbed at the potentials 0.8 - 1.1 V (RHE) is more active than at the potentials 1.1 - 1.4 V. The lower activity of adsorbed oxygen at the potentials 1.1 - 1.4 V was caused by strengthening O-Pt bonds. The studies and results direct to opening the optimal and novel methods for effective water cleaning by destruction of toxics.