

عنوان مقاله:

The relationship between microstructure and electrochemical behaviour of mixed RuO₂ - TiO₂ coatings on titanium substrate for Cl₂ production

محل انتشار:

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خلاصه مقاله:

RuO₂ - TiO₂ coatings because of very good corrosion resistance and electrochemical properties have been widely used in chlor - alkali industries. In the present work, RuO₂ - TiO₂ coatings were produced by thermal decomposition from aqueous solutions of ruthenium and titanium chlorides in appropriate combination. The electrochemical behaviours of coatings were assessed by electrochemical techniques such as cyclic voltammetry and polarisation measurements. SEM micrographs of the electrodes show a cracked - mud morphology over the electrodes. Microscopic observation of the electrodes surfaces indicated deepening of cracks and pit formation on the surfaces by electrolysis. The compactness and uniformity of the coating improved as the RuO₂ content increased. The increase in RuO₂ content also decreased the overpotential. It is concluded that it is more beneficial to coat the used anodes for chlor. alkali industry for a cost saving purpose, while electrochemical behaviour doesn't change.

کلمات کلیدی:

Dimensionally Stable Anodes (DSA) , RuO₂ - TiO₂ coating, Chlorine Overpotential

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