

THE INVESTIGATION OF OXYGEN ADSORPTION AND OF ITS
IONIZATION BY THE TRIANGULAR VOLTAGE METHOD

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Abstract*

Anodic and cathodic $i - \phi$ curves on a rotating silver electrode were obtained using periodic and single triangular voltage pulses. The experiments were carried out in alkaline solutions in argon and oxygen atmospheres.

The range of the electrode potentials was determined in which adsorption and desorption of oxygen and hydrogen take place as well as formation and destruction of the silver oxides Ag_2O , AgO , Ag_2O_3 .

When the rate of voltage change is increased a decrease of the oxygen adsorption on anodic polarization as well as a decrease of oxygen desorption on cathodic polarization are observed. In the range 0,05-0,85 v the change in the formation ratio of hydroxyl and hydrogen peroxide ions is connected with a change in the strength of the bond between oxygen and electrode surface. The presence of a large amount of oxygen on the silver surface and the increase of the bond strength result in a decrease of the oxygen reduction rate.

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