ELRCTROCHEMICAL BEHAVIOR OF ZINCIN AQUEOUS MEDIA

MOUSTAFA FATHY MOUSTAFA ABD EL SATAR

Most investigations of zinc were concerned with the kinetics of its dissolution in aqueous solutions and some for its protection against corrosion by adding some species to the solution in contact with the zinc electrode surface in order to inhibit the corrosion rate [20-58].The technique of anodic and cathodic polarization (Tafel lines) of metals was often used to study the phenomena of metal corrosion and passivation. It yields a useful information on the electrochemical behavior, action of inhibitive and aggressive anions and the effect of the environmental conditions. In this technique an external applied current was used. The experiments can be performed in a relatively short time.The present chapter of this thesis was aimed to obtain the anodic and cathodic polarization curves of zinc electrode in different concentrations of zinc chloride, ammonium chloride solutions and a solution of zinc chloride + ammonium chloride. The inhibitive action of some cationic surfactants on the dissolution of zinc electrode in the same solutions were studied. Also the effect of rising temperature on the dissolution of zinc electrode in 0.1 M ZnCl2, 0.1 M NH4Cl and (0.1 M NH4Cl + 0.1 M ZnCl2) solutions in absence and presence of the cationic surfactants was, also, investigated. Some activation thermodynamic parameters were calculated