Short Communication

On the Anomalous Behavior of Zn/Ni UPD at Pt(111) Single Crystalline Electrode in Borate Containing Solution

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Underpotential deposition (UPD) of Zn^{2+} and/or Ni^{2+} ions at Pt(111) electrode was carried out in borate containing solution. The presence of borate in the solution was found to assist the appearance of sharp peak of Zn UPD at $\text{pH} > 4$, with consistency of our previous work. Zn UPD was found to occur at the so called butterfly wave potential range while Ni UPD occurs within the hydrogen adsorption/desorption region. In the case of electrolyte containing both Zn^{2+} and Ni^{2+} ions, the UPD of Zn, occurs at the most positive potential value and leads to suppression of Ni UPD process.

Keywords: Zn UPD, Ni UPD, Borate, Pt(111), Simultaneous UPD

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