Trends in the exchange current for hydrogen evolution - DTU Orbit (25/12/2018)

**Trends in the exchange current for hydrogen evolution**

A density functional theory database of hydrogen chemisorption energies on close packed surfaces of a number of transition and noble metals is presented. The bond energies are used to understand the trends in the exchange current for hydrogen evolution. A volcano curve is obtained when measured exchange currents are plotted as a function of the calculated hydrogen adsorption energies and a simple kinetic model is developed to understand the origin of the volcano. The volcano curve is also consistent with Pt being the most efficient electrocatalyst for hydrogen evolution. (c) 2005 The Electrochemical Society. [DOI: 10.1149/1.1856988] All rights reserved.

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