

论文

Kelvin探针测量技术在电化学研究中的应用进展

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摘要:

Kelvin探针测量技术被引入到腐蚀研究领域后,成为研究薄液膜和有机涂层下金属腐蚀的有力电化学工具和手段. Kelvin探针技术与原子力显微镜技术相结合产生出扫描Kelvin探针力显微镜,使Kelvin技术在材料研究和腐蚀领域得到了更好的应用. 本文简述了Kelvin探针技术的测量原理和装置,重点综述了近十年来该技术在电化学研究中的应用进展.

关键词: Kelvin探针测量技术 电化学研究

PROGRESS OF APPLICATION OF KELVIN PROBE TECHNIQUE IN STUDIES ON ELECTROCHEMISTRY

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Abstract:

Since its first application in corrosion science the Scanning Kelvin Probe (SKP) technique had been shown to be a useful tool for studying corrosion of metals under thin or ultra thin electrolyte films. Also, it was a powerful means to analysis the buried interface of organic coating/metal. By introduction of a Kelvin probe mode to atomic force microscopy (AFM), the so called Scanning Kelvin Probe Force Microscopy (SKPFM) was realized, thereby the application of Kelvin probe technique to material research and corrosion problems had significantly promoted. In this paper, the measurement theory and the test devices of the Kelvin probe were briefly introduced. The emphasis was given to the progress of application of Kelvin probe technique to electrochemical research in the past decade.

Keywords: Kelvin probe technique electrochemical research

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