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Autore	Seo Masahiro
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Nota di contenuto	Surface Thermodynamics of Solid Electrode -- Methods for Investigating Electro-Chemo-Mechanical Properties of Solid Electrode Surfaces -- Potential- or Adsorbate-Induced Changes in Surface Stress of Solid Electrode, and Surface Stress vs Surface Charge Density or Potential vs Surface Elastic Strain -- Changes in Surface Stress Associated with Underpotential Deposition and Surface Alloying -- Controversy of Thermodynamics Associated with Surface Stress and Surface Tension of Solid Electrode -- Stresses of Anodic Oxide Films Grown on Metal Electrode -- Nano-Mechanical Properties of Solid Surfaces Obtained by Nano-Indentation.
Sommario/riassunto	This book deals with the electro-chemo-mechanical properties characteristic of and unique to solid electrode surfaces, covering interfacial electrochemistry and surface science. Electrochemical reactions such as electro-sorption, electro-deposition or film growth on a solid electrode induce changes in surface stress or film stress that lead to transformation of the surface phase or alteration of the surface film. The properties of solid electrode surfaces associated with the correlation between electrochemical and mechanical phenomena are named "electro-chemo-mechanical properties". The book first derives the surface thermodynamics of solid electrodes as fundamentals for understanding the electro-chemo-mechanical properties. It also explains the powerful techniques for investigating the electro-chemo-

mechanical properties, and reviews the arguments for derivation of surface thermodynamics of solid electrodes. Further, based on current experimental findings and theories, it discusses the importance of the contribution of surface stress to the transformation of surface phases, such as surface reconstruction and underpotential deposition in addition to the stress evolution during film growth and film reduction. Moreover, the book describes the nano-mechanical properties of solid surfaces measured by nano-indentation in relation to the electro-chemo-mechanical properties. This book makes a significant contribution to the further development of numerous fields, including electrocatalysis, materials science and corrosion science.
