

Contents

Chapter 1 X-Ray Photoelectron Spectroscopy in Corrosion Research 1
Hans-Henning Strehblow and Philippe Marcus

Chapter 2 Auger Electron Spectroscopy 39
James E. Castle

Chapter 3 Studies of Metal Corrosion and Oxidation Phenomenon Using
Secondary Ion Mass Spectrometry 65
N. Stewart McIntyre and Michael J. Graham

Chapter 4 MeV Ion Beam Analytical Methods 103
Didier Schmaus and Ian Vickridge

Chapter 5 Scanning Tunneling Microscopy and Atomic Force Microscopy 133
Vincent Maurice and Philippe Marcus

Chapter 6 Synchrotron Methods for Corrosion Research 169
Dirk Lutzenkirchen-Hecht and Hans-Henning Strehblow

Chapter 7 Infrared Spectroscopy 237
Christofer Leygraf and Magnus Johnson

Chapter 8 Glow Discharge Optical Emission Spectroscopy 269
Arne Bengtson

Chapter 9 Recent Developments in the Application of Radiotracer
Methods in Corrosion Studies 283
G. Horányi and E. Kalman

Chapter 10 Nanoindentation and Nanoscratching Techniques for
Evaluation of Mechanical Properties of Surface Films 335
Masahiro Seo

Chapter 11 Introduction to Electrochemical Instrumentation 361
Carl-Albrecht Schiller

Chapter 12 DC Electrochemical Methods 435
Ewald Heitz

Chapter 13 Electrochemical Impedance Spectroscopy.....	463
<i>Florian Mansfeld</i>	
Chapter 14 Electrochemical Noise Technique	507
<i>Francois Huet</i>	
Chapter 15 Scanning Electrode Techniques for Investigating Near-Surface Solution Current Densities	571
<i>R.Scott Lillard</i>	
Chapter 16 Application of Scanning Kelvin Probe in Corrosion Science	605
<i>M. Rohwerder, M. Stratmann, P. Leblanc, and G.S. Frankel</i>	
Chapter 17 The Microcell Technique	649
<i>Thomas Suter and H. Bohni</i>	
Chapter 18 Photoelectrochemical Techniques in Corrosion Studies	697
<i>Francesco Di Quarto, Monica Santamaria, and C. Sunseri</i>	
Chapter 19 Electrochemical Quartz Crystal Microbalance	733
<i>C.-O. A. Olsson and D. Landolt</i>	
Index.....	753