

Table of Contents

Preface

Electrohydrodynamical Impedance in Corrosion C. Deslouis and B. Tribollet	1
The Mechanism of Erosion-Corrosion in Slurry Pipelines J. Postlethwaite, M.H. Dobbin and K. Bergevin	13
Cathodic Reduction and Evolution of Hydrogen on B⁺ Implanted Armco Iron P.L. Bonora, G. Cerisola, L. Fedrizzi and S.L. Russo	23
Influence de la Diffusion de L'Oxygene sur L'Initiation et L'Evolution des Phenomenes de Corrosion sur des Aciers en Milieu Chlorure Neutre M. Cid, A. Peñuela and M.C. Petit	33
Use of a Rotating Disc Electrode to Study the Influence of Sulfate Anions on the Anodic Dissolution of Iron T.M.C. Nogueira and O.R. Mattos	43
Erosion Corrosion Measurements on Segmented but Coupled Electrodes R.C. Woollam, J.S. Gill and J.L. Dawson	53
Steady and Transient Hydrodynamical Effects on a Passive Iron Layer in Acidic Media C. Deslouis, M. Keddam, C. Pallotta and B. Tribollet	69
Factors Determining the Dissolution Rate in Pitting Corrosion of Stainless Steels T.J. Hakkarainen	81
Kinetics of Pit Generation for Stainless Steels B. Baroux	91
Statistical Study of Pitting Corrosion of Zircaloy-4 in Aqueous and Methanolic Solutions of HCl Y. Roques, G. Mankowski, G. Chatainier and F. Dabosi	105
Noise Analysis of Pure Aluminium under Different Pitting Conditions J. Uruchurtu and J.L. Dawson	113
Application of Electrochemical Techniques to the Study of Pitting Corrosion of Copper Tube in Fresh Water T. Fujii, T. Kodama and H. Baba	125
Influence de la Preparation de la Surface des Aciers Inoxydables sur le Potentiel de Repos et sur le Comportement du Film Passif, en Milieu Chlorure Chaud M. Puiggali, M. Cid, H. Fatmaoui and M.C. Petit	133
Spectral Analysis of Noise Potential during Pitting C. Bataillon	141
Some Characteristics of the Initiation Phase of Pitting Corrosion of Stainless Steel D.E. Williams, M. Fleischmann, J. Stewart and T. Brooks	151
Application of Impedance Technique to Localized Corrosion Studies M. Keddam and R. Oltra	167
Analysis of the Corrosion-Fatigue Damage Based on the Cyclic Evolution of the Current Transients T. Magnin, L. Coudreuse and J.M. Lardon	177
Electrochemical Prevention and Control of Localized Corrosion and SCC of AISI 304 Stainless Steels in NaCl Solutions F. Mancia and A. Tamba	189
Electrochemical Noise Generation during Stress Corrosion Cracking R.A. Cottis and C.A. Loto	201
Influence des Parametres Electrochimiques sur la Fatigue Corrosion dans le Domaine des Fortes Deformations J.L. Brazy, A. Bignonnet and C. Vallet	215
Study of Stress Corrosion Cracking and Corrosion Fatigue with Mechanical Impedance Measurements A. Roelandt and J. Vereecken	225
Etude Dynamique des Couches Passives Formees sur les Aciers Inoxydables en Milieu Chlorure. Correlation avec le Comportement en CSC. Influence des Elements D'Alliage D. Desjardins, M. Puiggali, H. Rhanim and M.C. Petit	233

The Application of Hydrogen Permeation Measurements to the Study of Corrosion Fatigue Crack Growth in Steels	
R.A. Cottis, K.R. Gowers, M. Haji-Ghassemi and E.A. Taqi	243
Determination of Corrosion Inhibitors Efficiencies in Two-Phase (Water-Hydrocarbon) Liquid Media with a Polarisation Probe: Some Applications: Scale and Corrosion Inhibitors Compatibility Evaluation	
C. Meric and A. Sánchez	253
An Electrochemical Impedance Approach to the Corrosion Inhibition of a Carbon Steel in Neutral Media	
M. Duprat, A. Shiri, Y. Derbali and N. Pebere	267
Corrosion Inhibitor Behaviour Studies by the Alternating-Current Impedance Technique	
J.F. Van Baar and J. Meijers	281
Electrochemical Studies on the Conductive Pathways during Corrosion of Lacquer Coated Mild Steel	
K.R. Gowers, N.J. Hepburn, G.A.M. Sussex and J.D. Scantlebury	289
Application of Electrochemical Impedance Measurements to the Study of the Corrosion Performance of Coated Steel in 3% NaCl Solution	
T. Picaud, M. Duprat and F. Dabosi	303
Water Uptake of Polymer Coatings: New Investigation of the Early Stages by the Electrochemical Impedance Method	
P. Gimenz, D. Petit and M. Badia	315
Voltage Noise from the Blistering and Corrosion of Coated Mild Steel	
J.P. Lomas, L.M. Callow, G.A.M. Sussex and J.D. Scantlebury	327
Electrochemical Impedance Spectroscopy of Protective Coatings	
F. Mansfeld and M.W. Kendig	337
Apport des Mesures de Resistance de Polarisation et D'Impedance Electrochimique a L'Evaluation de la Resistance a la Corrosion des Aciers Galvanises Chromates	
J. Hazan, E. Buscarlet and C. Coddet	351
Corrosion of Steel in Mortar Studied by Impedance Measurements	
B. Elsener and H. Böhni	363
The Need for the Use of Several Techniques in Corrosion Studies	
M.G.S. Ferreira and A.M.P. Simões	373
An Inversion Method for Calculating Corrosion Rate of a Metal	
G. Rocchini	383
The Corrosion of Magnox Alloy Al80 In Alkaline Media	
R. Greef, P.R. Harvey and S.P. Tyfield	395
Caractere Inhibiteur et Aspects Photoelectrochimiques de la Couche Passive de L'Alliage Amorphe 32Fe-36Ni-12P-6B-14Cr	
Y. Massiani, J. Crousier, J.P. Crousier, G. Picq and P. Vennereau	407
An Assessment of Large Amplitude Harmonic Analysis in Corrosion Studies	
C. Gabrielli, M. Keddam and H. Takenouti	417
Anodic Dissolution of Iron as Studied with Channel Flow Double Electrode	
T. Tsuru, T. Nishimura and S. Haruyama	429
Etude du Role du Molybdene sur la Passivite des Aciers Inoxydables par les Mesures Electriques et par les Impedances Electrochimiques	
A. Irhzo, N. Bui, Y. Segui and F. Dabosi	439
In Situ Raman Spectroscopy for the Study of Iron Passivity	
A. Hugot le Goff and C. Pallotta	451
Electrochemical Noise Measurements on Mild Steel in 0.5 M Sulphuric Acid	
I.A. Al-Zanki, J.S. Gill and J.L. Dawson	463
Mössbauer Spectroscopy Characterization and Electrochemical Study of the Kinetics of Oxidation of Iron in Chlorinated Aqueous Media: Structure and Equilibrium Diagram of Green Rust One	
J.M.R. Genin, D. Rezel, P. Bauer, A. Olowe and A. Beral	477
A New Insight in the Electrochemical Response of a Depassivated Surface	
C. Gabrielli, F. Huet, M. Keddam, R. Oltra and J.C. Colson	491
Multichannel Optical Analysis for the Study of the Growth Kinetics of Films. Application to the Tungsten Oxidation	
P. Falaras and A. Hugot le Goff	501

Hot Corrosion Investigation by Electrochemical Methods P.D.W. Bottomley, J.R. Gill and J.L. Dawson	509
On the Electrochemical Properties of Grain Boundaries of Sensitized AISI 304 Type Stainless Steels I. Aho-Mantila and H. Hänninen	519
The Passive Layer as a Wear Resistant "Coating" H.J. Rijks	531
Etude de la Formation et de la Stabilité de L'Etat Passif par des Methodes Electrochimiques. Application a des Alliages Amorphes Y. Massiani, J. Crousier and J.P. Crousier	539
The Growth and Reduction of Passive Films on Low Alloy Steels in Hot Carbonate-Bicarbonate Solutions J.M. Sykes and A.M. Riley	551
Electrochemical Curves for Detection of Sulphide Inclusions in Alloy 800 A. Mignone, F. Maday and M. Vittori	563
Corrosion of Metal Electrodes in Molten Lithium Sulphate-Potassium Sulphate Eutectic O.E. Abdel-Salam, M.S. Abdel-Hady, G.M. Abo-Elenien and Z.E. Kandeel	575
Anodic Protection of a Ni 201 Reactor Lining with Carbon Steel in a Wet-Air-Oxidation Environment J.G. Erlings, J.F.M. Van Roy and P.A. Ottolander	587
Study on the Intergranular Corrosion of Cold Worked Austenitic Stainless Steels G. Rondelli, B. Mazza, T. Pastore and B. Vicentini	593
Passivation of Mechanically Polished, Chemically Etched and Anodized Zirconium in Various Aqueous Solutions: Open-Circuit Potential Measurements O.E. Abdel-Salam and G.M. Abo-Elenien	605