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Nota di contenuto	Cover; Title Page; Copyright; Dedication; Contents; Preface; Acknowledgments; Chapter 1 Introduction and Forms of Corrosion; 1.1 General or Uniform or Quasi-Uniform Corrosion; 1.2 Galvanic Corrosion; 1.2.1 Factors involved in Galvanic Corrosion; 1.2.2 Galvanic Series and Corrosion; 1.2.3 The Nature of the Metal/Solution Interface; 1.2.4 Polarization of the Galvanic Cell; 1.2.5 Testing of Galvanic Corrosion; 1.3 Stray Current Corrosion; 1.4 Localized Corrosion; 1.4.1 Pitting Corrosion; 1.4.2 Poultrice Corrosion; 1.4.3 Crevice Corrosion; 1.4.4 Filiform Corrosion; 1.4.5 Breakdown of Passivation 1.4.6 Coatings and Localized Corrosion1.4.7 Electrochemical Studies of Localized Corrosion; 1.4.8 Potentiostatic Methods; 1.4.9 Prevention of Localized Corrosion; 1.4.10 Corrosion Tests; 1.4.11 Changes in Mechanical Properties; 1.4.12 Electrochemical Techniques for the Study of Localized Corrosion; 1.4.13 Electrochemical Impedance and Localized Corrosion; 1.4.14 The SRET; 1.5 Metallurgically Influenced Corrosion; 1.5.1 The Influence of Metallurgical Properties in Aqueous

Media; 1.6 Microbiologically Influenced Corrosion (MIC); 1.6.1 Growth and Metabolism; 1.6.2 Environments
1.6.3 Biological Corrosion in Freshwater Environments
1.6.4 Biological Corrosion in Marine Environments; 1.6.5 Industries Affected; 1.6.6 Role of Some Microbiological Species in Corrosion; 1.6.7 Attack by Organisms Other than SRB; 1.6.8 Production of Biofilms; 1.6.9 Production of Sulfides; 1.6.10 Formation of Organic and Inorganic Acids; 1.6.11 Gases from Organisms; 1.6.12 MIC of Materials; 1.6.13 Wood and Polymers; 1.6.14 Hydrocarbons; 1.6.15 Types of Corrosion of Metals and Alloys; 1.6.16 Microbiological Impacts and Testing; 1.6.17 Recognition of Microbiological Corrosion
1.7 Mechanically Assisted Corrosion
1.7.1 Corrosion and Wear; 1.7.2 Abrasion; 1.7.3 Wear Impact; 1.7.4 Corrosion Effects; 1.7.5 Wear Damage Mechanisms; 1.7.6 Adhesive Wear; 1.7.7 Abrasive Wear; 1.7.8 Fatigue Wear; 1.7.9 Impact Wear; 1.7.10 Chemical or Corrosive Wear; 1.7.11 Oxidative Wear; 1.7.12 Electric-Arc-Induced Wear; 1.7.13 Erosion-Corrosion; 1.7.14 Impingement; 1.7.15 Effect of Turbulence; 1.7.16 Galvanic Effect; 1.7.17 Water Droplet Impingement Erosion; 1.7.18 Cavitation; 1.7.19 Cavitation Erosion; 1.7.20 Impacting Bubbles; 1.7.21 Prevention; 1.7.22 Fretting Corrosion
1.7.23 Mechanism of Fretting Corrosion
1.7.24 Modeling Fretting Corrosion
1.7.25 Fretting CF; 1.7.26 Prevention of Fretting Wear; 1.7.27 Testing; 1.7.28 Measurement of Wear and Corrosion; 1.7.29 Galling Stress; 1.7.30 CF; 1.7.31 Morphology of CF Ruptures; 1.7.32 Important Factors of CF; 1.7.33 Stresses; 1.7.34 Stress Ratio; 1.7.35 Material Factors; 1.7.36 Mechanism of CF; 1.7.37 Crack Initiation; 1.7.38 Crack Propagation; 1.7.39 Prevention of CF; 1.8 Environmentally Induced Cracking (EIC); 1.8.1 Testing of CF; 1.8.2 Types of Tests; 1.8.3 Sampling in CF Tests; 1.8.4 SCC; 1.8.5 Morphology
1.8.6 Some Key Factors of SCC

Sommario/riassunto

- Provides detailed methods to reduce or eliminate damage caused by corrosion
- Explains the human and environmental costs of corrosion
- Explains causes of and various types of corrosion
- Summarizes the costs of corrosion in different industries, including bridges, mining, petroleum refining, chemical, petrochemical, and pharmaceutical, pulp and paper, agricultural, food processing, electronics, home appliances etc
- Discusses the technical aspects of the various methods available to detect, prevent, and control corrosion
