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from Equilibrium [Activation Over-potential (n)]; 3.6 Tafel Equation; 3.7 Mixed Potential Theory and its Application; 3.8 Evans Diagrams; 3.9 Prediction of Corrosion Tendency on the Basis of Mixed Potential Theory; 3.10 Application of Mixed Potential Theory; 3.11 Concentration Polarization; 3.12 Effect of Various Factors on Concentration Polarization
3.13 Resistance Polarization (Ohmic Polarization)3.14 Measurement of Corrosion; 3.15 Determination of Corrosion Rates by Electrochemical Measurements; 3.16 Polarization Resistance (Linear Polarization); 3.17 Theoretical Background (Electrochemical Measurements); 3.18 Modern Developments; 3.19 Kinetics of Passivity; 3.20 Definition of Important Electrochemical Parameters for Active-Passive Metals; 3.21 Measured vs Actual Polarization Behavior of Active-Passive Metals; 3.22 Control of Passivity; 3.23 Effect of Environment; 3.24 Conversion Factors; 3.25 Illustrative Problems; Questions
Suggested ReadingKeywords; Chapter 4 - Types of Corrosion: Materials and Environments; 4.1 Introduction; 4.2 Uniform Corrosion; 4.3 Galvanic Corrosion; 4.4 Dezincification; 4.5 Crevice Corrosion; 4.6 Pitting Corrosion; 4.7 Intergranular Corrosion; 4.8 Stress Corrosion Cracking and Hydrogen Damage; 4.9 Corrosion Fatigue; 4.10 Fretting Corrosion; 4.11 Erosion-Corrosion and Cavitation Damage; Questions; References; Keywords; Chapter 5 - Cathodic Protection; 5.1 Introduction; 5.2 Basis of Cathodic Protection; 5.3 Working of Cathodic Protection System
5.4 Factors Leading to Corrosion of Underground Metallic Structures

Sommario/riassunto

Corrosion is a huge issue for materials, mechanical, civil and petrochemical engineers. With comprehensive coverage of the principles of corrosion engineering, this book is a one-stop text and reference for students and practicing corrosion engineers. Highly illustrated, with worked examples and definitions, it covers basic corrosion principles, and more advanced information for postgraduate students and professionals. Basic principles of electrochemistry and chemical thermodynamics are incorporated to make the book accessible for students and engineers who do not have prior knowledge of this