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| Autore                  | Perez Nestor   |
| Titolo                  | Electrochemistry and Corrosion Science // by Nestor Perez  |
| Pubbl/distr/stampa      | Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016  |
| ISBN                    | 3-319-24847-2  |
| Edizione                | [2nd ed. 2016.]  |
| Descrizione fisica      | 1 online resource (XVII, 455 p. 180 illus., 174 illus. in color.)  |
| Disciplina              | 541.37   |
| Soggetti                | Electrochemistry<br>Tribology<br>Corrosion and anti-corrosives<br>Coatings<br>Metals<br>Engineering—Materials<br>Tribology, Corrosion and Coatings<br>Metallic Materials<br>Materials Engineering  |
| Lingua di pubblicazione | Inglese  |
| Formato                 | Materiale a stampa   |
| Livello bibliografico   | Monografia   |
| Nota di contenuto       | Electrochemical Corrosion -- Electrochemistry -- Thermodynamics of an Electrochemical Cell -- Nano Electrochemistry -- Kinetics of Activation Polarization -- Mass Transport by Diffusion and Migration -- Corrosivity and Passivity -- Design Against Corrosion -- Electrodeposition -- High-Temperature Oxidation.-.   |
| Sommario/riassunto      | The second edition of this textbook includes refined text in each chapter, new sections on corrosion of steel-reinforced concrete and on cathodic protection of steel reinforced bars embedded in concrete, and some new solved examples. The book introduces mathematical and engineering approximation schemes for describing the thermodynamics and kinetics of electrochemical systems, which are the essence of corrosion science, in addition to electrochemical corrosion, forms of corrosion and mechanisms of corrosion. This approach should capture the reader's attention on the complexity of corrosion. Thus, the principles of electrochemistry and electrochemical cells are |

subsequently characterized in simple electrolytes from a thermodynamics point of view. Explains corrosion fundamentals, corrosion prevention and identification, and implementation of corrosion management solutions; Presents computational and engineering approaches for solving electrochemical and corrosion problems; Includes theoretical concepts and details of formula derivation for understanding corrosion behavior and metal recovery; Explains the principles and theoretical background succinctly using pictures, figures, graphs, and schematic models, followed by derivation of equations to quantify relevant parameters.

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