1. Record Nr. UNINA9910813345803321 Autore Bose Sudhangshu **Titolo** High temperature coatings / / Sudhangshu Bose Pubbl/distr/stampa Amsterdam;; Boston,: Elsevier, c2007 **ISBN** 1-280-75210-6 9786610752102 0-08-046955-8 Edizione [1st ed.] Descrizione fisica 1 online resource (313 p.) Disciplina 671.7/3 Soggetti Refractory coating Heat resistant materials Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di contenuto Front Cover; High Temperature Coatings; Copyright Page; Table of Contents: ABOUT THE AUTHOR: PREFACE: Chapter 1 INTRODUCTION: 1.1 HIGH-TEMPERATURE ENVIRONMENT; REFERENCES; Chapter 2 FUNDAMENTAL CONCEPTS; 2.1 THERMODYNAMIC CONCEPTS; 2.2 CONCEPT OF KINETICS; 2.3 CRYSTAL STRUCTURE; 2.4 EQUILIBRIUM PHASES; REFERENCES; Chapter 3 SUBSTRATE ALLOYS; 3.1 TEMPERATURE CAPABILITY OF METALS AND ALLOYS; 3.2 STRENGTHENING MECHANISMS; 3.3 TITANIUM ALLOYS; 3.4 STEELS; 3.5 NICKEL-IRON ALLOYS: 3.6 NICKEL AND COBALT BASE SUPERALLOYS: 3.7 NEED FOR COATINGS; REFERENCES; Chapter 4 OXIDATION; 4.1 OXIDATION **PROCESS** 4.2 OXIDATION TESTING AND EVALUATION4.3 OXIDATION OF ALLOYS: 4.4 ROLES OF SPECIFIC ALLOYING CONSTITUENTS: 4.5 OXIDATION IN THE PRESENCE OF WATER VAPOR; 4.6 OXIDATION OF POLYCRYSTALLINE VERSUS SINGLE-CRYSTAL ALLOYS; REFERENCES; Chapter 5 HIGH-

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High Temperature Coatings demonstrates how to counteract the thermal effects of the rapid corrosion and degradation of exposed materials and equipment that can occur under high operating temperatures. This is the first true practical guide on the use of thermally-protective coatings for high-temperature applications, including the latest developments in materials used for protective coatings. It covers the make-up and behavior of such materials under thermal stress and the methods used for applying them to specific types of substrates, as well as invaluable advice on inspection and repair of e