

1. Record Nr.	UNINA9910824290203321
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Titolo	Materials degradation and its control by surface engineering [[electronic resource] /] / A. W. Batchelor, Loh Nee Lam, Margam Chandrasekaran
Pubbl/distr/stampa	London, : Imperial College Press River Edge, NJ, : Distributed in USA by World Scientific Pub., c2002
ISBN	1-281-86676-8 9786611866761 1-86094-767-0
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (428 p.)
Altri autori (Persone)	Loh Nee Lam ChandrasekaranMargam
Disciplina	620/.44
Soggetti	Surfaces (Technology) Corrosion and anti-corrosives Mechanical wear Fracture mechanics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	CONTENTS ; Preface ; Acknowledgements ; CHAPTER 1 INTRODUCTION ; 1.1 Definition of materials degradation ; 1.2 Definition and significance of surface engineering ; 1.3 Classification of materials degradation by physical mechanism 1.4 Economic and technical significance of materials degradation 1.5 Summary ; PART 1: MECHANISMS OF MATERIALS DEGRADATION ; CHAPTER 2 Mechanical causes of materials degradation ; 2.1 Introduction ; 2.2 Wear ; 2.3 Fatigue fracture and creep ; 2.4 Summary CHAPTER 3 CHEMICAL CAUSES OF MATERIALS DEGRADATION 3.1 Introduction ; 3.2 Corrosion of metals in aqueous media ; 3.3 Oxidative reactions of metals with oxygen sulphur and halogens ; 3.4 Softening and embrittlement of wood and polymers

3.5 Damage to cement and concrete glass and engineering ceramics by water and other corrosive liquids

3.6 Dissolution of metals and ceramics in liquid metals alkalis and salts

; 3.7 Biochemical and biological modes of materials degradation

; 3.8 Corrosion resistant materials ; 3.9

Summary

CHAPTER 4 MATERIALS DEGRADATION INDUCED BY HEAT AND OTHER FORMS OF ENERGY

4.1 Introduction ; 4.2 Thermal degradation of materials

; 4.3 Photochemical degradation of polymers

; 4.4 High energy radiation damage of materials

; 4.5 Summary ; CHAPTER 5 DUPLEX CAUSES OF MATERIALS DEGRADATION

5.1 Introduction

Sommario/riassunto

The second edition of *Materials Degradation and Its Control by Surface Engineering* continues the theme of the first edition, where discussions on corrosion, wear, fatigue and thermal damage are balanced by similarly detailed discussions on their control methods, e. g. painting and metallic coatings. The book is written for the non-specialist, with an emphasis on introducing technical concepts graphically rather than through algebraic equations. In the second edition, the graphic content is enhanced by an additional series of colour and monochrome photographs that illustrate key aspects
