1. Record Nr. UNISALENTO991003232939707536

Autore	Voyiadjis, G. Z.
Titolo	Advances in damage mechanics [e-book] : metals and metal matrix composites with an introduction to fabric tensors / George Z. Voyiadjis and Peter I. Kattan
Pubbl/distr/stampa	Amsterdam ; Boston ; London : Elsevier, 2006
ISBN	9780080446882 0080446884
Edizione	[2nd ed.]
Descrizione fisica	xvi, 724 p. : ill. ; 25 cm.
Altri autori (Persone)	Kattan, Peter Issa, 1961-
Disciplina	620.163
Soggetti	Continuum damage mechanics Metals - Fracture Electronic books.
Lingua di pubblicazione	Inglese
Formato	Risorsa elettronica
Livello bibliografico	Monografia
Note generali	Previous ed.: 1999
Nota di bibliografia	Includes bibliographical references (p. 687-708) and index
Nota di contenuto	Chapter 1. Introduction -- -- Part I: Isotropic Damage Mechanics - Scalar Formulation -- Chapter 2. Uniaxial Tension in Metals -- -- Chapter 3. Uniaxial Tension in Elastic Metal Matric Composites -- -- Chapter 4. Uniaxial Tension in Elasto-Plastic Metal Matric Composites: Vector Formulation of the Overall Approach -- -- Part II: Anisotropic Damage Mechanics - Tensor Formulation -- Chapter 5. Damage and Elasticity in Metals -- -- Chapter 6. Damage and Plasticity in Metals -- -- Chapter 7. Metal Matrix Composites - Overall Approach -- -- Chapter 8. Metal Matrix Composites - Local Approach -- -- Chapter 9. Equivalence of the Overall and Local Approaches -- -- Chapter 10. Metal Matrix Composites - Local and Interfacial Damage -- -- Chapter 11. Symmetrization of the Effective Stress Tensor -- -- Chapter 12. Experimental Damage Investigation -- -- Chapter 13. High Cyclic Fatigue Damage for Uni-Directional Metal Matrix Composites -- -- Chapter 14. Anisotropic Cyclic Damage-Plasticity Models for Metal Matrix Composites -- -- Part III: Advanced Topics in Damage Mechanics -- Chapter 15. Damage in Metal Matrix Composites Using the Generalized Model Cells -- -- Chapter 16. The Kinematics of Damage for Finite-Strain Elasto-Plastic Solids -- -- Chapter 17. A Coupled Anisotropic Damage Model for the Inelastic Response of

Composite Materials -- -- Part IV: Damage Mechanics and Fabric Tensors -- Chapter 18. Damage Mechanics and Fabric Tensors -- -- Chapter 19. Continuum Approach to Damage Mechanics of Composite Materials with Fabric Tensors -- -- Chapter 20. Micromechanical Approach to Damage Mechanics of Composite Materials with Fabric Tensors -- -- Chapter 21. Experimental Study and Fabric Tensor Quantification of Micro-Crack Distributions in Composite Materials

Sommario/riassunto

The book presents the principles of Damage Mechanics along with the latest research findings. Both isotropic and anisotropic damage mechanisms are presented. Various damage models are presented coupled with elastic and elasto-plastic behavior. The book includes two chapters that are solely dedicated to experimental investigations conducted by the authors. In its last chapter, the book presents experimental data for damage in composite materials that appear in the literature for the first time. Systematic treatment of damage mechanics in composite materials Includes special and advanced topics Includes basic principles of damage mechanics Includes new experimental data that appears in print for the first time Covers both metals and metal matrix composite materials Includes new chapters on fabric tensors Second edition includes four new chapters