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| Autore | Cavaliere Pasquale |
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| Edizione | [1st ed. 2021.] |
| Descrizione fisica | 1 online resource (XIV, 425 p. 613 illus., 241 illus. in color.) |
| Disciplina | 620.115 |
| Soggetti | Mechanics, Applied<br>Solids<br>Statics<br>Microtechnology<br>Microelectromechanical systems<br>Nanotechnology<br>Materials - Analysis<br>Solid Mechanics<br>Mechanical Statics and Structures<br>Microsystems and MEMS<br>Characterization and Analytical Technique |
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| Note generali | Includes index. |
| Nota di contenuto | Chapter 1. Nanostructuring of metals, alloys and composites -- Chapter 2. Cyclic Deformation of Metals Alloys and Composites -- Chapter 3. Crack Initiation and Growth in Metals Alloys and Composites -- Chapter 4. Fatigue and Crack Behavior of Nanostructured Metals Alloys and Composites -- Chapter 5. Fatigue and Crack Behavior of Bulk Nanostructured Metals Alloys and Composites -- Chapter 6. Creep in nanostructured materials -- Chapter 7. Superplasticity in nanostructured materials -- Chapter 8. Mechanical properties of Thin Films and Coatings -- Chapter 9. Contact Fatigue and Crack Behavior of Nanostructured Metals Alloys and Composites -- Chapter 10. Effect of Environment on Microstructure and mechanical properties of Nanostructured Metals Alloys and Composites. |

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| Sommario/riassunto | This book describes the main approaches for production and synthesis of nanostructured metals and alloys, taking into account the fatigue behavior of materials in additive manufactured components. Depending on the material type, form, and application, a deep discussion of fatigue properties and crack behavior is also provided. Pure nanostructured metals, complex alloys and composites are further considered. Prof. Cavaliere's examination is supported by the most up-to-date understanding from the scientific literature along with a thorough presentation of theory. Bringing together the widest range of perspective on its topic, the book is ideal for materials researchers, professional engineers in industry, and students interested in nanostructured materials, fracture/fatigue mechanics, and additive manufacturing. Describes in detail the relevance of nanostructures in additive manufacturing technologies; Includes sufficient breadth and depth on theoretical modelling of fatigue and crack behavior for use in the classroom; Identifies many open questions regarding different theories through experimental finding; Contextualizes the latest scientific results for readers in industry. |