

Handbook of Damage Mechanics: Nano to Macro Scale for Materials and Structures

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Abstrak

Handbook of Nano to Macro Damage Mechanics provides a comprehensive reference for the topics of damage and healing mechanics. Appropriate for an audience of graduate students and faculty, researchers, and professionals in the fields of Mechanical Engineering, Civil Engineering, Aerospace Engineering, Materials Science, and Engineering Mechanics, the volume covers all types of materials that the engineers may encounter including metals, composites, ceramics, polymers, biomaterials, and nanomaterials. The internationally recognized team of contributors employ a consistent and systematic approach offering readers a user friendly reference ideal for frequent consultation. This second edition adds newly established techniques and materials properties codified in the past ten years to this authoritative reference. The volume retains its comprehensive coverage of damage and healing mechanics with updates to core topics and references and addition of other types of damages not covered in the first edition, including thermo-elastoviscoplastic damage-healing model for bituminous materials, damage in granular materials, damage in biological tissue, damage in rubber materials, damage crashworthiness in cars and airplanes, risk analysis in damage structures, and evaluating damage with digital image correlation. The Handbook details computational modeling of constitutive equations as well as solved examples in engineering applications. A wide range of materials that engineers may encounter are covered, including metals, composites, ceramics, polymers, biomaterials, and nanomaterials. The internationally recognized team of contributors employs a consistent and systematic approach, offering readers a user-friendly reference that is ideal for frequent consultation. The Handbook of Damage Mechanics: Nano to Macro Scale for Materials and Structures, second edition is ideal for graduate students and faculty, researchers, and professionals in the fields of Mechanical Engineering, Civil Engineering, Aerospace Engineering, Materials Science, and Engineering Mechanics.