

1. Record Nr.	UNINA9910735780203321
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Titolo	Thermo-Mechanically Coupled Cyclic Deformation and Fatigue Failure of NiTi Shape Memory Alloys [[electronic resource]] : Experiments, Simulations and Theories // by Guozheng Kang, Chao Yu, Qianhua Kan
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2023
ISBN	981-9927-52-8
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (312 pages)
Collana	Springer Series in Materials Science, , 2196-2812 ; ; 335
Altri autori (Persone)	YuChao KanQianhua
Disciplina	620.16
Soggetti	Metals Materials—Fatigue Materials science—Data processing Condensed matter Thermodynamics Atomic structure Molecular structure Metals and Alloys Materials Fatigue Computational Materials Science Structure of Condensed Matter Atomic and Molecular Structure and Properties
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Fundamentals of shape memory alloys (SMAs) -- Experimental Observations on Thermo-mechanically Coupled Cyclic Deformation and Fatigue Failure of NiTi SMAs -- Molecular Dynamics Simulations on Cyclic Deformation of NiTi SMAs -- Phase Field Simulations on Cyclic Deformation of NiTi SMAs -- Phenomenological Constitutive Models of NiTi SMAs -- Crystal Plasticity-based Constitutive Models of NiTi SMAs -- Fatigue Life-prediction Models of NiTi SMAs.
Sommario/riassunto	Written by leading experts in the field, this book highlights an authoritative and comprehensive introduction to thermo-mechanically

coupled cyclic deformation and fatigue failure of shape memory alloys. The book deals with: (1) experimental observations on the cyclic deformation and fatigue failure in the macroscopic and microscopic scales; (2) molecular dynamics and phase-field simulations for the thermo-mechanical behaviors and underlying mechanisms during cyclic deformation; (3) macroscopic phenomenological and crystal plasticity-based cyclic constitutive models; and (4) fatigue failure models. This book is an important reference for students, practicing engineers and researchers who study shape memory alloys in the areas of mechanical, civil and aerospace engineering as well as materials science.
