

1. Record Nr.	UNINA9910463498203321
Titolo	Advanced mechanical properties and deformation mechanisms of bulk nanostructured materials : special topic volume with invited peer reviewed papers only // edited by Yonghao Zhao
Pubbl/distr/stampa	Durnten-Zurich ; ; Enfield, New Hampshire : , : Trans Tech Pub., , [2011] ©2011
ISBN	3-03813-465-1 1-61344-687-X
Descrizione fisica	1 online resource (264 p.)
Collana	Materials science forum, , 0255-5476 ; ; volume 683
Altri autori (Persone)	ZhaoYonghao
Disciplina	620.1/15
Soggetti	Nanostructured materials Deformations (Mechanics) Bulk solids Electronic books.
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 indexes.
Nota di contenuto	Advanced Mechanical Properties and Deformation Mechanisms of Bulk Nanostructured Materials; Preface; Table of Contents; I. Advanced Mechanical Properties of Nanostructured Materials; On the Conflicts in the Experimental Results Concerning the Mechanical Properties of Ultra-Fine Grained and Nanostructured Materials: Effects of Processing Routes and Experimental Conditions; On the Cyclic Deformation Response and Microstructural Mechanisms of ECAPed and ARBed Copper - an Overview The Effect of Grain Boundary State on Deformation Process Development in Nanostructured Metals Produced by the Methods of Severe Plastic DeformationImprovement of Fracture Toughness (K1c) of 7075 Al Alloy by Cryorolling Process; The Influence of Stacking Fault Energy on the Cold-Rolling Cu and Cu-Al Alloy: Structure and Mechanics Properties; Influence of Annealing on the Microstructure and Mechanical Properties of Electrodeposited Nanocrystalline Nickel; Mechanical Behaviors of Electrodeposited Bulk Nanocrystalline Metals

and Alloys

Microstructure and Microhardness of a Nanostructured Nickel-Iron Based Alloy; Mechanical and Functional Properties of Titanium Alloys Processed by Severe Plastic Deformation; Mechanical Properties and Fracture Behaviour of Nanostructured and Ultrafine Structured TiAl Alloys Synthesised by Mechanical Milling of Powders and Hot Isostatic Pressing; II. Deformation Mechanics of Bulk Nanostructured Materials; Structure Evolution and Deformation Resistance in Production and Application of Ultrafine-Grained Materials - the Concept of Steady-State Grains

Stages of Plastic Deformation in Metallic Nanocrystals; Tensile Deformation Behaviors of Ultra-Fine Subgrained Aluminum; Deformation Mechanisms in Nanocrystalline Nickel at Low Temperatures; Kinetic Modeling of the Deformation Behavior of High-Strength Nanostructured Al-Mg Alloys; Vortices and Mixing in Metals during Severe Plastic Deformation; Process Design Concepts for the Production of Ultrafine Grained Steels through Multi-Pass Warm Rolling; Bridging Science and Technology; Grain Refinement in Commercial Purity Titanium Sheets by Constrained Groove Pressing; Achievable Strength of Nanostructured Composites with Co-Deformable Components; Thermal Stability of Fine Grains as a Function of Process Parameters in FSW Butt Joints; Keywords Index; Authors Index

Sommario/riassunto

Bulk nanostructured (NS) materials have emerged as a new class of materials having unusual structures and properties. As a result, they have attracted considerable attention in recent years. Bulk NS materials are single or multi-phase polycrystals with a nanoscale grain size and can usually be classified into nanocrystalline (<100nm) and ultrafine grain (<1000nm) materials. This book contains important papers on the mechanical properties and deformation mechanisms of bulk NS materials. The advanced properties include strength, ductility, strain-hardening, fatigue, dynamic, creep and toughness,
