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Nota di contenuto	Shape Memory Alloys: Properties, Technologies, Opportunities; Preface; Table of Contents; I. Theory and Modeling of Martensitic Transformation and Functional Properties; Possible Wave Processes Controlling the Growth of Martensite Crystals at B2-B19, B2-B19' and B2-R Transformations; Modeling of Deformation and Functional Properties of Shape Memory Alloys Based on a Microstructural Approach; Novel Achievements in the Research Field of Multifunctional Shape Memory Ni-Mn-In and Ni-Mn-In-Z Heusler Alloys; Modeling of Thermomechanical Behavior of Shape Memory Alloys II. Martensitic Transformations and Shape Memory EffectsPhysics of Thermoelastic Martensitic Transformation in High-Strength Single Crystals; Thermoelastic Martensitic Transitions and Shape Memory Effects: Classification, Crystal and Structural Mechanisms of Transformations, Properties, Production and Application of Promising Alloys; Some Physical Principles of High Temperature Shape Memory Alloys Design; Structural and Magnetic Properties of Ni-Mn-Al Heusler Alloys: A Review; III. Controlling the Functional Properties of Shape Memory Alloys Mechanisms of Microstructure Evolution in TiNi-Based Alloys under Warm Deformation and its Effect on Martensite TransformationsThermomechanical Treatment of TiNi Intermetallic-

Based Shape Memory Alloys; Thermomechanical Treatment of Ti-Nb Solid Solution Based SMA; Influence of Ultrasonic Vibrations on Shape Memory Effect; Martensitic Transformation and Shape Memory Effect in TiNi-Based Alloys during Neutron Irradiation; Thermo-Mechanical and Functional Properties of NiTi Shape Memory Alloy at High Strain Rate Loading
Features of Deformation Behavior, Structure and Properties of TiNi Alloys Processed by Severe Rolling with Pulse CurrentIV. Shape Memory Alloys with Complex Structure; TiNi Shape Memory Foams, Produced by Self-Propagating High-Temperature Synthesis; Development of Two-Way Shape Memory Material on the Basis of Amorphous-Crystalline TiNiCu Melt-Spun Ribbons for Micromechanical Applications; Crystal-Chemical Aspects of the Stability of the Ordered Phase B2 in Volume Alloying of TiNi; High-Strength Precipitation-Hardening Austenitic Steels with Shape Memory Effect
V. Application of Shape Memory AlloysApplication of Thermomechanically Treated Ti-Ni SMA; Keywords Index; Authors Index

Sommario/riassunto

The collective monograph consists of five parts: Theory and modeling of martensitic transformation and functional properties; Martensitic transformations and shape memory effects; Controlling the functional properties of shape memory alloys; Shape memory alloys with complex structure; Application of shape memory alloys) covering of all aspects of shape memory alloys from theory and modelling to applications. It presents the scientific results obtained by leading scientific teams studying shape memory alloys in the former Soviet Republics together with their colleagues from other countries duri