

1. Record Nr.	UNINA9910828334203321
Autore	Zhukov Arcady <1963->
Titolo	Magnetic properties and applications of ferromagnetic microwires with amorphous and nanocrystalline structure // Arcady Zhukov and Valentina Zhukova
Pubbl/distr/stampa	New York, : Nova Science Publishers, c2009
ISBN	1-61209-887-8
Edizione	[1st ed.]
Descrizione fisica	1 online resource (181 p.)
Collana	Nanotechnology science and technology series
Altri autori (Persone)	ZhukovaValentina <1962->
Disciplina	620.1/1297
Soggetti	Amorphous substances - Magnetic properties Ferromagnetic materials Nanocrystals
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 index.
Nota di contenuto	Intro -- MAGNETIC PROPERTIES AND APPLICATIONS OF FERROMAGNETIC MICROWIRES WITH AMORPHOUS AND NANOCRYSTALLINE STRUCTURE -- MAGNETIC PROPERTIES AND APPLICATIONS OF FERROMAGNETIC MICROWIRES WITH AMORPHOUS AND NANOCRYSTALLINE STRUCTURE -- CONTENTS -- PREFACE -- ACKNOWLEDGMENTS -- INTRODUCTION -- FABRICATION METHOD -- 2.1. CHEMICAL AND METALLURGICAL PROCESSES RELATED WITH INTERACTION OF THE INGOT ALLOY AND THE GLASS -- 2.2. ELECTROMAGNETIC AND ELECTRO-HYDRODYNAMIC PHENOMENA IN THE SYSTEM OF INDUCTOR- INGOT -- 2.3. THERMAL CONDITIONS OF FORMATION OF CAST MICROWIRE -- 2.4. PARAMETERS OF THE CASTING PROCESS AND THEIR LIMITS -- 2.4.1. Casting Rate -- 2.4.2. Diameter of a Microwire -- 2.4.3. Composition of the Metal Core -- 2.5. MICROSTRUCTURE OF CAST MICROWIRES -- 2.5.1. Cooling Rate of the Metal Core -- 2.5.2. Metastable Phases in Cast Microwire -- MECHANICAL PROPERTIES -- AMORPHOUS MICROWIRES AND THEIR MAGNETIC PROPERTIES -- INTRODUCTION OF SOFT MAGNETIC MATERIALS -- Magnetic Properties -- Permeability -- Coercivity -- Saturation Magnetization -- Barkhausen Effect -- 4.1. EFFECT OF COMPOSITION. PROPERTIES RELEVANT FOR APPLICATIONS -- 4.2. MAGNETIC BISTABILITY. SWITCHING FIELD FLUCTUATIONS. FAST DOMAIN WALL PROPAGATION -- 4.2.1. Switching

Filed Fluctuations -- 4.2.2. The Temperature Dependence of the
Switching Field -- 4.2.3. Domain Walls Propagation -- 4.3. GIANT
MAGNETO-IMPEDANCE EFFECT AND ENHANCED MAGNETIC SOFTNESS.
TAILORING OF MAGNETIC PROPERTIES AND GMI -- 4.3.1.
Magnetostriction -- 4.3.2. GMI Effect in Different Families of Wires --
4.3.3. Tailoring of Hysteretic Properties and GMI Effect in Thin
Glass-coated Microwires Using Heat Treatment. Induce Magnetic
Anisotropy. Stress Sensitive Microwires -- 4.3.4. Tailoring of the GMI
Effect -- 4.3.5. Development of Extremely Thin Microwires with GMI
Effect. Off-diagonal GMI.
4.3.6. Development of Temperature Sensitive Microwires with GMI
Effect -- 4.4. OTHER WAYS OF TAILORING OF MAGNETIC PROPERTIES --
4.4.1. Interaction between Microwires -- 4.4.2. Multi-layered
Microwires -- 4.4.3. Microwires with Mixed Structure -- 4.5. EFFECT OF
PARTIAL CRYSTALLIZATION AND NANOCRYSTALLIZATION -- 4.5.1.
Nanocrystalline Fe-Cu-Nb-Si-B Glass-coated Microwires -- 4.5.1.1
Magnetically Soft Nanocrystalline Microwires -- 4.5.1.2. Semihard
Magnetic Nanocrystalline Microwires -- 4.5.2. Nanocrystalline Structure
in FeHfBSi Glass-coated Microwire -- NON -MAGNETICALLY SOFT
MICROWIRES -- 5.1. MICROWIRES WITH GRANULAR STRUCTURE.
MAGNETO-RESISTANCE EFFECT -- 5.2. MAGNETO-CALORIC EFFECT IN
GLASS-COATED MICROWIRES -- FREQUENCY DEPENDENCE OF
COERCIVITY. EFFECT OF MAGNETIC STRUCTURE -- APPLICATIONS --
REFERENCES -- INDEX.
