

1. Record Nr.	UNINA9910583394203321
Autore	Croat John J.
Titolo	Rapidly solidified neodymium-iron-boron permanent magnets // John J. Croat
Pubbl/distr/stampa	Duxford : , : Woodhead Publishing, , [2018] ©2018
ISBN	0-08-102226-3 0-08-102225-5
Descrizione fisica	1 online resource (384 pages) : illustrations (some color)
Collana	Woodhead Publishing series in electronic and optical materials
Disciplina	538.22
Soggetti	Neodymium - Electrometallurgy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Machine generated contents note: ; 1. The development of rare earth permanent magnets -- ; 1.1. The rare earths -- ; 1.2. The development of rare earth-cobalt permanent magnets -- ; 1.3. Permanent magnet research in the post R -- Co era -- References -- Selected Readings -- Further Reading -- ; 2. The Nd ₂ Fe ₁₄ B intermetallic compound -- ; 2.1. The rare earth-iron binary compounds -- ; 2.2. Permanent magnet research at the GM research laboratories -- ; 2.3. Properties of rapidly solidified Nd -- Fe and Pr -- Fe Alloys -- ; 2.4. Structure of the Nd ₂ Fe ₁₄ B intermetallic compound -- ; 2.5. Properties of the R ₂ Fe ₁₄ B intermetallic compounds -- References -- Selected Readings -- ; 3. The properties of melt-spun NdFeB alloys -- ; 3.0. Introduction -- ; 3.1. The melt-spinning process -- ; 3.2. Properties of melt-spun NdFeB alloys -- ; 3.3. The magnetization process in isotropic melt-spun NdFeB -- ; 3.4. Nanocomposite or spring-exchange NdFeB magnets -- References -- Selected Readings -- Further Reading -- ; 4. Production of rapidly solidified NdFeB magnetic powder -- ; 4.0. Introduction -- ; 4.1. Production melt-spinning development -- ; 4.2. Operation of a production melt spinner -- ; 4.3. Processing melt-spun NdFeB powder -- ; 4.4. Commercial grades of NdFeB magnetic powder -- ; 4.5. Gas-atomized NdFeB magnetic powder -- References -- Selected Readings -- Further Reading -- ; 5. Production and properties of bonded Nd magnets -- ; 5.0. Introduction -- ; 5.1. Compression-molded Nd

magnets -- ; 5.2. Coating compression-molded Nd magnets -- ; 5.3. Quality control procedures for bonded Nd magnets -- ; 5.4. Properties of compression-molded Nd magnets -- ; 5.5. Injection-molded Nd magnets -- ; 5.6. Calendered and extruded Nd magnets -- References -- Selected Readings -- ; 6. Hot-deformed NdFeB permanent magnets -- ; 6.0. Introduction -- ; 6.1. Magnetic properties of hot-deformed NdFeB magnets -- ; 6.2. The hot-deformation process -- ; 6.3. The microstructure of hot-deformed NdFeB magnets -- ; 6.4. The thermomechanical alignment process -- ; 6.5. The magnetization process in hot-deformed NdFeB magnets -- ; 6.6. The coercivity mechanism in hot-deformed NdFeB magnets -- ; 6.7. Achieving magnetic uniformity in hot-deformed magnets -- ; 6.8. Radially aligned hot-deformed magnets -- ; 6.9. Anisotropic-bonded Nd magnets -- References -- Selected Readings -- Further Reading -- ; 7. The production and properties of sintered Nd permanent magnets -- ; 7.0. Introduction -- ; 7.1. Sintered Nd production process -- ; 7.2. Magnetic properties of commercial sintered Nd magnets -- ; 7.3. The microstructure of sintered Nd magnets -- ; 7.4. The magnetization process in sintered Nd magnets -- References -- Selected Readings -- ; 8. Major applications for rapidly solidified NdFeB permanent magnets -- ; 8.0. Introduction -- ; 8.1. The development of the NdFeB magnetic powder market -- ; 8.2. Some basic permanent magnet design considerations -- ; 8.3. Some advantages of using isotropic-bonded Nd magnets -- ; 8.4. Major applications for bonded Nd magnets -- References -- Selected Readings -- Further Reading.
