

1. Record Nr.	UNINA9910954486603321
Titolo	Yttrium : compounds, production and applications / / Bradley D. Volkerts, editor
Pubbl/distr/stampa	Hauppauge, N.Y., : Nova Science Publishers, c2011
ISBN	1-61761-145-X
Edizione	[1st ed.]
Descrizione fisica	1 online resource (292 p.)
Collana	Materials science and technologies
Altri autori (Persone)	VolkertsBradley D
Disciplina	546/.403
Soggetti	Yttrium
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 -- YTTRIUM: COMPOUNDS, PRODUCTION AND APPLICATIONS -- YTTRIUM: COMPOUNDS, PRODUCTION AND APPLICATIONS -- CONTENTS -- PREFACE -- Chapter 1 ND:YAG LASER TREATMENT FOR DIFFERENT VASCULAR LESIONS -- ABSTRACT -- 1. INTRODUCTION -- 2. HISTORY OF ND:YAG LASER FOR THE TREATMENT OF VASCULAR LESIONS -- 3. PRINCIPLES OF VASCULAR LASER -- 4. SELECTING PARAMETERS -- 4.1. Wavelength -- 4.2. Pulse Duration -- 4.3. Spot Size -- 4.4. Fluence -- 4.5. Algorithm -- 5. DEFINITION OF VASCULAR PATHOLOGY -- 6. CLINICAL APPLICATIONS -- 6.1. Patient Selection -- 6.2. Preoperative Patient Evaluation, Care and Checklist -- 6.3. Contraindications -- 6.4. Patient Information and Consent -- 6.5. Role of Cooling -- 6.6. Post-Operative Care -- 6.7. Side Effects -- 6.8. Histopathological Effects of Nd:YAG Laser Treatment -- 7. REVIEW OF ARTICLES ON USE OF ND:YAG LASER FOR VASCULAR LESIONS -- 7.1. Vascular Tumors -- 7.1.1. Hemangiomas -- 7.1.2. Pyogenic Granulomas -- 7.2. Vascular Malformations -- 7.2.1. Congenital Vascular Malformations -- 7.2.1.1. Port Wine Stain -- 7.2.1.2. Other Congenital Vascular Malformations -- 7.2.2. Vascular Ectasias -- 7.2.2.1. Facial Telangiectases -- 7.2.2.2. Leg Telangiectases -- 7.2.2.3. Venous Lake -- 7.2.2.4. Spider Angioma -- 7.2.2.5. Cherry Angiomas -- 7.2.2.6. Hereditary Hemorrhagic Telangiectasia -- 7.2.2.7. Generalized Essential Telangiectasia -- 7.2.2.8. Poikiloderma of Civatte -- 7.2.3. Angiokeratoma -- 8. ENDOVENOUS ND:YAG LASER THERAPY -- 9. MANUFACTURERS OF ND:YAG LASER -- 10. CONCLUSION --

REFERENCES -- Chapter 2 YTTRIUM IN PIGMENTS AND PHOSPHORS --
 ABSTRACT -- INTRODUCTION -- STRUCTURE OF YTTRIUM OXIDES,
 HYDROXIDES AND OTHER Y-CONTAINING OXIDES WITH INTEREST AS
 PIGMENTS OR PHOSPHORS -- Properties of Y-Containing Oxides --
 Y₂O₃ -- YVO₄ -- Y-Containing Pyrochlores -- YAlO₃ Perovskite --
 Y₂BaCuO₅ -- Y₂SiO₅ (YSO).
 CONCLUSION -- Acknowledgments -- REFERENCES -- Chapter 3
 MICROWAVE PROPERTIES AND APPLICATIONS OF YTTRIUM IRON
 GARNET (YIG) FILMS: CURRENT STATE OF ART AND PERSPECTIVES --
 ABSTRACT -- INTRODUCTION -- 1. YIG AS REMARKABLE MATERIAL IN
 THE FAMILY OF MICROWAVE FERRITES -- 1.1. YIG - 20 Sublattice
 Ferrimagnet -- 1.2. LPE and PLD YIG Films -- a. LPE YIG Films -- b. PLD
 YIG Films -- 1.3. Advanced Theoretical Ferromagnetic Models of YIG
 Films -- a. Anisotropy of (111) LPE Films -- b. The Magnetic
 Permeability Tensor of (111) Film -- 1.4. Dipole-Exchange Spin
 Excitations in YIG Films -- 1.5. Experimental Microwave Methods for
 YIG Magnetic Parameters Testing -- a. Destructive Techniques -- b.
 Nondestructive Techniques -- 2. RECENT DEVELOPMENTS IN
 METAMATERIALS BASED ON YIG FILMS -- 2.1. 1D and 2D Magnonic
 Crystals -- 2.2. Composite YIG-Piezoelectric and YIG-Ferroelectric
 Structures -- 2.3. Negative Refractive Index Metamaterials -- 3.
 MICROWAVE APPLICATIONS OF YIG FILMS -- 3.1. Nonreciprocal Devices
 -- 3.2. MSW Filters and Filter Banks -- 3.3. Nonlinear Passive Devices
 -- a. Frequency Selective Limiter Operation -- b. Signal-to-Noise
 Enhancer Operation -- 3.4. Pulse Signal Processing in YIG Film by the
 Parametric Pumping -- 3.5. Complex Microwave Signal Generation --
 CONCLUSION -- Acknowledgments -- REFERENCES -- Chapter 4
 BISMUTH-SUBSTITUTED YTTRIUM IRON GARNET NANOPARTICLES:
 PREPARATION AND APPLICATIONS -- ABSTRACT -- 1. INTRODUCTION
 -- 2. BASIC SYNTHESIS -- 2.1. Co-Precipitation -- 2.1.1. Direct co-
 precipitation -- 2.1.2. Homogeneous Coprecipitation -- 2.1.3.
 Improved Co-precipitation -- 2.1.3.1. Microwave-Assisted Synthesis --
 2.1.3.2. Coprecipitation Using Surfactants -- 2.2. Micro-Emulsion
 Method -- 2.3. Sol-Gel Processing -- 2.4. Solid State Synthesis -- 3.
 APPLICATIONS -- 3.1. Magneto-Optical Isolator -- 3.2. Magneto-
 Optical Sensor.
 3.3. Tuned Filter -- 3.4. Magneto-Optical Recorder -- 3.5. Magneto-
 Optic Modulator -- 3.6. Magneto-Optic Switcher -- 4. SUMMARY --
 Acknowledgments -- REFERENCES -- Chapter 5 YTTRIUM
 APPLICATION FOR SPALLATION NEUTRON ENERGY SPECTRUM
 RECONSTRUCTION -- ABSTRACT -- 1. INTRODUCTION - WHERE AND
 WHY THE NEUTRON SPECTRUM KNOWLEDGE IS SO IMPORTANT -- 2.
 EXPERIMENT DESCRIPTION -- 3. YTTRIUM-89 AS AN ACTIVATION
 DETECTOR -- 4. RESULTS OF MEASUREMENTS -- 5. SPALLATION
 NEUTRON SPECTRUM UNFOLDING -- 6. THE METHOD DISCUSSION -- 7.
 CONCLUSIONS -- REFERENCES -- Chapter 6 YTTRIUM APPLICATIONS
 FOR HEAT-RESISTING ALLOYS -- ABSTRACT -- INTRODUCTION --
 RESULTS -- 1. Chromia-Forming Alloys -- 1.1. Yttrium-Added Ni-20Cr
 and Ni-20Cr-1Si Alloys [1, 2] -- 1.1.1. Mass Gain -- 1.1.2. Surface
 Features of Oxide Scale -- 1.1.3. X-Ray Diffraction -- 1.1.4. SEM --
 1.2. Ytria-Coated Ni-20Cr-1Si Alloy [3] -- 1.2.1. Mass Change --
 1.2.2. X-Ray Diffraction -- 1.2.3. SEM -- 2. Alumina-Forming Alloys --
 2.1. Yttrium-Implanted Fe-20Cr-4Al Alloys in Oxygen [4] -- 2.2.
 Yttrium-Added Fe-20Cr-4Al Alloys in Oxygen At 1473K [5] -- 2.2.1.
 Mass Gain -- 2.2.2. Surface Appearance and X-Ray Diffraction -- 2.2.3.
 SEM -- 2.3. Yttrium-Added Fe-20Cr-4Al-Pt Alloys in Oxygen At 1473K
 [6] -- 2.3.1. Mass Gain and XRD -- 2.3.2. SEM -- 2.3.3. TEM -- 2.4.
 Yttrium-Added Fe-20Cr-4Al Alloys in Oxygen At 1473, 1573 and

1673K [2] -- 2.4.1. Mass Gain and Amount of Spalled Oxide -- 2.4.2. Surface Appearance -- 2.4.3. SEM -- 2.5. Yttrium-Added Fe-20Cr-4Al Alloys in Oxygen-Water Vapor at 1473, 1573 and 1673K [2] -- 2.5.1. Mass Gain and Amount of Spalled Oxide -- 2.5.2. Surface Appearance -- 2.5.3. SEM -- DISCUSSION -- 1. Chromia-Forming Alloys -- 1.1. Yttrium-Added Ni-20Cr and Ni-20Cr-1Si Alloys [1, 2, 7-9] -- 2. Alumina-Forming Alloys -- 2.1. Yttrium-Added Fe-20Cr-4Al Alloys in Oxygen At 1473K [5]. 2.2. Yttrium-Added Fe-20Cr-4Al Alloys in Oxygen At 1473, 1573 and 1673K [2] -- 2.3. Yttrium-Added Fe-20Cr-4Al Alloys in Oxygen-Water Vapor At 1473, 1573 and 1673K [2] -- CONCLUSION -- Acknowledgments -- REFERENCES -- Chapter 7 INFLUENCE OF ANNEALING ON YTTRIUM DOPANT DISTRIBUTION IN CERIA-BASED NANOPARTICLES -- ABSTRACT -- 1. INTRODUCTION -- 2. EXPERIMENTAL PROCEDURE -- 2.1. Synthesis -- 2.2. Characterization -- 3. RESULTS AND DISCUSSION -- 3.1. Particle Geometry -- 3.2. Concentration Distribution of Yttrium -- 3.3. Concentration of Cerium (III) -- 4. CONCLUSION -- Acknowledgments -- REFERENCES -- Chapter 8 YTTRIUM PHOSPHANIDES - A SURPRISINGLY SCARCE SUBSTANCE CLASS -- REFERENCES -- Chapter 9 PHYSICS AND ENGINEERING ASPECTS OF ELECTRONIC CONDUCTION IN YTTRIUM DIHYDRIDE -- Abstract -- 1. Introduction -- 1.1. Yttrium dihydride -- 1.2. Yttrium trihydride -- 2. Sample preparation and characterization -- 2.1. Thin Film Fabrication -- 2.2. Chemical Analysis -- 2.3. Structural Analysis -- 3. Optical Properties -- 3.1. Apparatus -- 3.2. Experimental Result -- 3.3. Dielectric Function Analysis -- 3.3.1. Model dielectric function analysis -- 3.3.2. Kramers-Kronig Analysis -- 3.3.3. Predicted transmittance spectra and comparison with experiment -- 4. Electrical transport properties -- 4.1. Methodology and Apparatus -- 4.2. Experimental Results -- 4.3. Conduction Mechanism in Yttrium Dihydride -- 4.3.1. Model -- 4.3.2. Evaluation of Carrier Parameters -- 5. Applications -- 5.1. Optical Devices -- 5.2. Hydrogen Gas Sensor -- 5.3. Cold Cathode Electrode Material -- 5.4. Spintronics Application -- 6. Summary and Outlook -- References -- INDEX -- Blank Page.

Sommario/riassunto

Presents topical research in the study of Yttrium, including Yttrium in pigments and phosphors; Microwave properties and applications of Yttrium iron garnet films; and, the physics and engineering aspects of electronic conduction in Yttrium dihydride.