Contents lists available at ScienceDirect



# Journal of Alloys and Compounds

journal homepage: www.elsevier.com/locate/jallcom

# Subject Index of Volume 488

#### Absorption spectroscopy intensity parametrizations for electric-dipole transitions between Stark components in Er<sup>3+</sup>:Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub> 632 Actinide alloys and compounds Bilayer structure moisture and surface area measurements of plutonium-bearing oxides 565 Biodegradability Actinide alloys and materials possible two-band superconductivity in PuRhGa<sub>5</sub> and CeRhIn<sub>5</sub> 554 Actinides **Bismuth** ferrite advances in f element reductive reactivity as a paradigm for expanding lanthanide and actinide science and technology 493 254 Active brazing interfacial morphologies between NiO-YSZ fuel electrode/316 stainless steel as the interconnect material and B-Ni3 brazing alloy in a solid oxide fuel cell system L1 Ag-Zr alloy Borate alloys non-equilibrium alloy formation in the Ag-Zr system by ion beam mixing 223 Alkyne insertion reactions of scandium pyridyl complexes supported by a ferrocene Borohydride diamide ligand 518 Al-Si-Cu allovs joining 6061 aluminum alloy with Al-Si-Cu filler metals 174 Brazing Alumina formation of featured nano-structure in thermal stable La-doped alumina Butadiene composite catalyst 546 Aluminium allovs recrystallization of twin-roll cast Al-Fe-Si foil stock processed without homogenization 112 Calorimetry Aluminum alloys joining 6061 aluminum alloy with Al-Si-Cu filler metals 174 Carbides Ammonium dynamics structure and thermal behaviour of Sr-doped (NH<sub>4</sub>)<sub>2</sub>TeBr<sub>6</sub> material L10 Amorphous materials Carbon nanotubes the structure of As<sub>3</sub>Se<sub>5</sub>Te<sub>2</sub> infrared optical glass 39 study of structure and optical properties of Fe<sub>2</sub>O<sub>3</sub>·CaO·Bi<sub>2</sub>O<sub>3</sub> glasses 454 Amorphous phase Casting non-equilibrium alloy formation in the Ag-Zr system by ion beam mixing 223 Anisotropy anisotropic HDDR Nd-Fe-B magnetic powders prepared directly from strip casting alloy flakes 310 Catalysis Antiferromagnetism phase transition induced by pressure in TbCrO<sub>4</sub> oxide: Relationship structure-properties 524 Catalyst Atomic force microscopy room temperature electrosynthesis of ZnSe thin films 157 Atomic scale structure Cathode the structure of As<sub>3</sub>Se<sub>5</sub>Te<sub>2</sub> infrared optical glass 39 $BaCe_{0.5}Zr_{0.3}Y_{0.16}Zn_{0.04}O_{3-\delta}$ stable BaCe\_{0.5}Zr\_{0.3}Y\_{0.16}Zn\_{0.04}O\_{3-\delta} electrolyte-based proton-conducting solid oxide fuel cells with layered SmBa<sub>0.5</sub>Sr<sub>0.5</sub>Co<sub>2</sub>O<sub>5+8</sub> cathode 208

Elsevier B.V. doi:10.1016/S0925-8388(09)02372-X

#### Band gap

influence of sulfur, selenium and tellurium doping on optical, electrical and structural properties of thin films of lead salts 334

role of hydrogen in CdTe-Mn thin film bilayer structure 356

corrosion behaviors of Mg and its alloys with different Al contents in a modified simulated body fluid 392

magnetic and electrical properties of  $Bi_{0.8}Ca_{0.2}Fe_{1-x}Mn_xO_3$  ( $0 \le x \le 0.5$ )

#### B-Ni3 brazing filler alloy

interfacial morphologies between NiO-YSZ fuel electrode/316 stainless steel as the interconnect material and B-Ni3 brazing alloy in a solid oxide fuel cell system L1

electro-optical properties of  $Bi_x La_y Sc_z (BO_3)_4 (x + y + z = 4)$  nanocrystallites having huntite structure incorporated into polymer matrices 291

study of LaCoO<sub>3</sub> as a cathode catalyst for a membraneless direct borohydride fuel cell 204

joining 6061 aluminum alloy with Al-Si-Cu filler metals 174

insertion reactions of scandium pyridyl complexes supported by a ferrocene diamide ligand 518

nanocomposite thermite powders prepared by cryomilling 386

electron-backscattered diffraction and transmission electron microscopy study of post-creep Ti<sub>3</sub>SiC<sub>2</sub> 181

investigations on the effects of CoO<sub>v</sub> to MoO<sub>v</sub> ratio and CoO<sub>v</sub>-MoO<sub>v</sub> loading on methane decomposition into carbon nanotubes 294

effect of active heterogeneous nucleation particles on the grain refining efficiency in an Mg-10 wt.% Y cast alloy 260

#### grain growth in Ni-Mn-Ga alloys 420

investigations on the effects of CoO<sub>v</sub> to MoO<sub>v</sub> ratio and CoO<sub>v</sub>-MoO<sub>v</sub> loading on methane decomposition into carbon nanotubes 294

#### formation of featured nano-structure in thermal stable La-doped alumina composite catalyst 546

#### a cubic BaCo<sub>0.8</sub>Nb<sub>0.1</sub>Fe<sub>0.1</sub>O<sub>3-8</sub> ceramic cathode for solid oxide fuel cell L35 study of LaCoO3 as a cathode catalyst for a membraneless direct borohydride fuel cell 204

stable BaCe\_{0.5}Zr\_{0.3}Y\_{0.16}Zn\_{0.04}O\_{3-\delta} electrolyte-based proton-conducting solid oxide fuel cells with layered SmBa<sub>0.5</sub>Sr<sub>0.5</sub>Co<sub>2</sub>O<sub>5+8</sub> cathode 208

Cathode catalyst

 ${\rm Pt}_{\rm x}{\rm Ni}$  alloy nanoparticles as cathode catalyst for PEM fuel cells with enhanced catalytic activity 195

Cathode material

preparation and electrochemical studies of  $\text{Li}_3\text{V}_2(\text{PO}_4)_3/\text{Cu}$  composite cathode material for lithium ion batteries L26

Cation distribution

cation distribution of titanium substituted cobalt ferrites L6

Ceramic

effect of sintering temperature on the piezoelectric and ferroelectric characteristics of CuO doped 0.95(Na<sub>0.5</sub>K<sub>0.5</sub>)NbO<sub>3</sub>-0.05LiTaO<sub>3</sub> ceramics 169 Ceramic coatings

effects of cathode pulse at low frequency on the structure and composition of plasma electrolytic oxidation ceramic coatings 273

Ceramics

- giant dielectric permittivity in Li and Pr co-doped NiO ceramics 31 electrical investigation of the compound:  $\text{LiFe}_{2/5}\text{Ni}_{3/10}\text{Co}_{3/10}\text{VO}_4$  306 the prediction of lattice constants in orthorhombic perovskites 374 new high- $\epsilon$  and high-Q microwave dielectric ceramics:  $(1 x)\text{Ca}_{0.61}\text{Nd}_{0.26}\text{TiO}_3$  –
- $\frac{1}{x} Nd(Zn_{0.5}Ti_{0.5})O_3 + 09$
- effect of MgO on structure and nonlinear dielectric properties of Ba<sub>0.6</sub>Sr<sub>0.4</sub>TiO<sub>3</sub>/MgO composite ceramics prepared from superfine powders 448
- hardening characteristics and compositional dependence of piezoelectric properties in  $Cu^{2+}$  modified 0.52NaNbO<sub>3</sub>-(0.48 *x*)KNbO<sub>3</sub>-*x*LiNbO<sub>3</sub> ceramics 465
- experimental study of phase transformation and specific heat of ternary zirconia-based oxides using differential scanning calorimetry 469

Ceria

EXAFS study of nanocrystalline CeO<sub>2</sub> samples prepared by sol-gel and ballmilling routes 1

Chemical synthesis

- electrical investigation of the compound: LiFe<sub>2/5</sub>Ni<sub>3/10</sub>Co<sub>3/10</sub>VO<sub>4</sub> 306
- magnetic greigite (Fe<sub>3</sub>S<sub>4</sub>) nanomaterials: Shape-controlled solvothermal synthesis and their calcination conversion into hematite ( $\alpha$ -Fe<sub>2</sub>O<sub>3</sub>) nanomaterials 339
- synthesis of different morphologies of bismuth sulfide nanostructures via hydrothermal process in the presence of thioglycolic acid 442

structural chemistry and magnetic properties of  $RE_2[Sn_xGe_{1-x}]_5$  (RE = Nd, Sm) and  $RE[Sn_xGe_{1-x}]_2$  (RE = Gd, Tb): Four new rare-earth metal intermetallic compounds with germanium zig-zag chains and tin square-nets 511

stability of cyclopentadienyl aryloxide complexes of calcium and barium 528 Langmuir–Blodgett films incorporating an ionic europium complex 595 structural and optical properties of  $GdAlO_3$ : $RE^{3+}$  (RE = Eu or Tb) prepared

by the Pechini method for application as X-ray phosphors 619 Chromium carbide

phase transformation of high temperature on Fe–Al–Mn–Cr–C alloy 52

- research of phase transformation on Fe-8.7Al-28.3Mn-1C-5.5Cr alloy 246 Coating
- coating of Al substrate by metallic Ni through mechanical alloying 430 Cobalt ferrite

cation distribution of titanium substituted cobalt ferrites L6 Combustion synthesis

mechanically activated self-propagating high-temperature synthesis of  $La_{0.9}Sr_{0.1}Ga_{0.8}Mg_{0.2}O_{3-\delta}$  as an electrolyte for SOFC 238

Complex electrical impedance

electrical investigation of the compound:  $\rm LiFe_{2/5}Ni_{3/10}Co_{3/10}VO_4~306$  Composite materials

- preparation and electrochemical studies of Li<sub>3</sub>V<sub>2</sub>(PO<sub>4</sub>)<sub>3</sub>/Cu composite cathode material for lithium ion batteries L26
- the structure and mechanical properties of  $\rm Fe_3Al-30$  vol.%  $\rm Al_2O_3$  nanocomposite 134

mechanochemical synthesis of (Fe,Ti)<sub>3</sub>Al-Al<sub>2</sub>O<sub>3</sub> nanocomposite 144

effect of MgO on structure and nonlinear dielectric properties of Ba<sub>0.6</sub>Sr<sub>0.4</sub>TiO<sub>3</sub>/MgO composite ceramics prepared from superfine powders 448

Composites

- synthesis and hydrogen storage properties of mechanically ball-milled SiC/MgH<sub>2</sub> nanocomposites 265
- **Composition fluctuations** the research of Ti-rich zone on the interface between TiC, and aluminum melt and the formation of Ti<sub>3</sub>Al in rapid solidified Al-Ti-C master alloys 84 **Computer-Aided Cooling Curve Analysis** study of the influence of copper and magnesium additions on the microstructure formation of Zn-Al hypoeutectic alloys 89 Coordination structure emission properties of Sm(III) complexes having remarkably deep-red emission band 612 CoO<sub>v</sub>-MoO<sub>v</sub>/Al<sub>2</sub>O<sub>3</sub> investigations on the effects of CoO<sub>v</sub> to MoO<sub>v</sub> ratio and CoO<sub>v</sub>-MoO<sub>v</sub> loading on methane decomposition into carbon nanotubes 294 Corrosion corrosion behaviors of Mg and its alloys with different Al contents in a modified simulated body fluid 392 Corrosion resistance corrosion resistance of titanium-containing dental orthodontic wires in fluoride-containing artificial saliva 482 Coupling studies of Mg film and substrate coupling effects on hydrogenation properties 360 Creep electron-backscattered diffraction and transmission electron microscopy study of post-creep Ti<sub>3</sub>SiC<sub>2</sub> 181 Crystal growth determination of interfacial energies in the Al-Ag and Sn-Ag alloys by using Bridgman type solidification apparatus 138 Crystal structure identification of a new hexagonal phase in the Al-Cu-Re system 108 reinvestigation of the isothermal section of the Ce-Co-Ge ternary system, at 700 °C 123 formation of composite nanomaterial MnPS<sub>2</sub> layered structure intercalated with pyridine 284 a general process to synthesize self-assembled shell-like (Ca<sub>0.61</sub>, Nd<sub>0.26</sub>)TiO<sub>3</sub> clusters 300 magnetic greigite (Fe<sub>3</sub>S<sub>4</sub>) nanomaterials: Shape-controlled solvothermal synthesis and their calcination conversion into hematite  $(\alpha - Fe_2O_3)$ nanomaterials 339 the prediction of lattice constants in orthorhombic perovskites 374 structural chemistry and magnetic properties of  $RE_2[Sn_xGe_{1-x}]_5$  (*RE* = Nd, Sm) and  $RE[Sn_xGe_{1-x}]_2$  (RE = Gd, Tb): Four new rare-earth metal intermetallic compounds with germanium zig-zag chains and tin square-nets 511 stability of cyclopentadienyl aryloxide complexes of calcium and barium 528 polymorphism in binary rare-earth metal germanides. Synthesis, structure and properties of the new hexagonal forms of Tb<sub>3</sub>Ge<sub>5</sub> and Dy<sub>3</sub>Ge<sub>5</sub> 533 Crystal structure and symmetry microstructure and optical properties of polycrystalline ZnO films sputtered under different oxygen flow rates 232 Crystal-field, Ab initio, Lanthanide, Rare-earth crystal-field parameters from ab initio calculations 591 Crystal-field splitting correlation between structure variation and luminescence red shift in YAG:Ce 638 Crystals and ligand fields lanthanide charge transfer energies and related luminescence, charge carrier trapping, and redox phenomena 568 Cubic perovsikte a cubic  $BaCo_{0.8}Nb_{0.1}Fe_{0.1}O_{3-\delta}$  ceramic cathode for solid oxide fuel cell  $\ L35$ Cubic phase room temperature electrosynthesis of ZnSe thin films 157 CuO effect of sintering temperature on the piezoelectric and ferroelectric characteristics of CuO doped 0.95(Na<sub>0.5</sub>K<sub>0.5</sub>)NbO<sub>3</sub>-0.05LiTaO<sub>3</sub> ceramics

647

Curie temperature

169

cation distribution of titanium substituted cobalt ferrites L6

Cyclopentadienyl

advances in f element reductive reactivity as a paradigm for expanding lanthanide and actinide science and technology 493

Dc resistivity

cation distribution of titanium substituted cobalt ferrites L6

Dental alloys

- corrosion resistance of titanium-containing dental orthodontic wires in fluoride-containing artificial saliva 482
- Devitrification
- magnetic and transport properties of Fe-rich thin cold-drawn amorphous wires 5 Dielectric properties
  - giant dielectric permittivity in Li and Pr co-doped NiO ceramics 31 investigation of structural, electrical and magnetic properties of BiFeO<sub>3</sub>–Bi(MgTi)O<sub>3</sub>– PbTiO<sub>3</sub> ceramic system 459

#### Dielectric response

- dielectric and piezoelectric studies of perovskite–tungsten bronze structured (1 x)PLZT–xPBBiN nanoceramic composites by high-energy mechanical activation technique 211
- effect of MgO on structure and nonlinear dielectric properties of  $Ba_{0.6}Sr_{0.4}TiO_3/MgO$  composite ceramics prepared from superfine powders 448
- spectroscopic and dielectric properties of crystallized PbO–Sb<sub>2</sub>O<sub>3</sub>–As<sub>2</sub>O<sub>3</sub>:NiO glass system 400

#### Dielectrics

giant dielectric permittivity in Li and Pr co-doped NiO ceramics 31 Differential scanning calorimetry

- quantification of the free volume in Zr<sub>45.0</sub>Cu<sub>39.3</sub>Al<sub>7.0</sub>Ag<sub>8.7</sub> bulk metallic glasses subjected to plastic deformation by calorimetric and dilatometric measurements 65
- recrystallization of twin-roll cast Al-Fe-Si foil stock processed without homogenization 112

#### Dilatometry

quantification of the free volume in Zr<sub>45.0</sub>Cu<sub>39.3</sub>Al<sub>7.0</sub>Ag<sub>8.7</sub> bulk metallic glasses subjected to plastic deformation by calorimetric and dilatometric measurements 65

#### Dimorphism

phase transition induced by pressure in  $\mathrm{TbCrO}_4$  oxide: Relationship structure-properties 524

#### Dinitrogen

advances in f element reductive reactivity as a paradigm for expanding lanthanide and actinide science and technology 493

#### Dislocation

dislocations in the ductile B2 YAg intermetallic compound 44

#### Disordered systems

relationship between the magnetic hyperfine field and the magnetic moment 18

#### Divalent

advances in f element reductive reactivity as a paradigm for expanding lanthanide and actinide science and technology 493

#### Dy<sub>3</sub>Ge<sub>5</sub>

polymorphism in binary rare-earth metal germanides. Synthesis, structure and properties of the new hexagonal forms of  $Tb_3Ge_5$  and  $Dy_3Ge_5$  533

#### EFIRS

a back-scattering laser Raman combination method of EFIRS and SERS to study TiO<sub>2</sub> nanoparticles 325

Elastic properties

- effect of zinc substitution on structural and elastic properties of cobalt ferrite 199 Electric field
- a back-scattering laser Raman combination method of EFIRS and SERS to study TiO<sub>2</sub> nanoparticles 325

Electrical conductivity

- electrical investigation of the compound: LiFe<sub>2/5</sub>Ni<sub>3/10</sub>Co<sub>3/10</sub>VO<sub>4</sub> 306
- influence of sulfur, selenium and tellurium doping on optical, electrical and structural properties of thin films of lead salts 334
- investigation of structural, electrical and magnetic properties of BiFeO<sub>3</sub>-Bi(MgTi)O<sub>3</sub>-PbTiO<sub>3</sub> ceramic system 459

Electrical properties giant dielectric permittivity in Li and Pr co-doped NiO ceramics 31 electrical, structural and optical properties of SnO<sub>2</sub>:F thin films: Effect of the substrate temperature 350 Electrical-transport room temperature photoluminescence and dc resistivity of Si<sub>0.95</sub>Ge<sub>0.05</sub> alloy nanowires grown in microwave H-field 328 Electrochemical kinetics preparation and electrochemical studies of Li<sub>3</sub>V<sub>2</sub>(PO<sub>4</sub>)<sub>3</sub>/Cu composite cathode material for lithium ion batteries L26 **Electrochemical properties** electrochemical and mechanical properties of superelastic electrode consisting of Ti substitute LiNiO<sub>2</sub> film on Ti-50Ni alloy L17 Electrode electrochemical and mechanical properties of superelastic electrode consisting of Ti substitute LiNiO<sub>2</sub> film on Ti-50Ni alloy L17 Electron backscatter diffraction electron-backscattered diffraction and transmission electron microscopy study of post-creep Ti<sub>3</sub>SiC<sub>2</sub> 181 Electron beam physical vapor deposition the isothermal oxidation behaviors of as-deposited and heat-treated Ni-11.5Cr-4.5Co-0.5Al sheet by EB-PVD at 800 °C L30 Electron microscopy phase transformation of high temperature on Fe-Al-Mn-Cr-C alloy 52 influence of Mn content on the magnetic properties and microstructure in Fe-Mn-Mo alloys 129 research of phase transformation on Fe-8.7Al-28.3Mn-1C-5.5Cr alloy 246 investigations on the effects of CoO<sub>v</sub> to MoO<sub>v</sub> ratio and CoO<sub>v</sub>-MoO<sub>v</sub> loading on methane decomposition into carbon nanotubes 294 Electronic band structure study of structure and optical properties of Fe<sub>2</sub>O<sub>2</sub>·CaO·Bi<sub>2</sub>O<sub>3</sub> glasses 454 Electronic conductivity preparation and electrochemical studies of Li<sub>3</sub>V<sub>2</sub>(PO<sub>4</sub>)<sub>3</sub>/Cu composite cathode material for lithium ion batteries L26 **Electronic properties** FPLAPW study of the structural, electronic, and optical properties of Ga<sub>2</sub>O<sub>3</sub>: Monoclinic and hexagonal phases 148 Electronic states Langmuir-Blodgett films incorporating an ionic europium complex 595 Electronic states (localized) lanthanide charge transfer energies and related luminescence, charge carrier trapping, and redox phenomena 568 Electronic transport spontaneous generation of voltage in the magnetocaloric compound Tb<sub>5</sub>Si<sub>2.2</sub>Ge<sub>1.8</sub> and elemental Gd 550 Electrospinning improved photoluminescence properties of europium complex/polyacrylonitrile composite fibers prepared by electrospinning 414 Electrosynthesis room temperature electrosynthesis of ZnSe thin films 157 Energy transfer the energy transfer from  $Eu^{2+}$  to  $Tb^{3+}$  in  $Ca_{10}K(PO_4)_7$  and its application in green light emitting diode 582 Enthalpy content high-temperature heat capacity and heat content of CaCu<sub>3</sub>Ti<sub>4</sub>O<sub>12</sub> (CCTO) 35 Er:YAG intensity parametrizations for electric-dipole transitions between Stark

intensity parametrizations for electric-dipole transitions between Stark components in Er<sup>3+</sup>:Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub> 632

#### Ethylene

insertion reactions of scandium pyridyl complexes supported by a ferrocene diamide ligand 518

### Europium

the energy transfer from  $Eu^{2+}$  to  $Tb^{3+}$  in  $Ca_{10}K(PO_4)_7$  and its application in green light emitting diode 582

#### Europium complexes

improved photoluminescence properties of europium complex/polyacrylonitrile composite fibers prepared by electrospinning 414

Gas sensor

method 270

Giant magneto-impedance effect

Evaporation-induced self-assembly

facile synthesis of mesoporous ZnAl<sub>2</sub>O<sub>4</sub> thin films through the evaporationinduced self-assembly method 320

EXAFS

EXAFS study of nanocrystalline  ${\rm CeO}_2$  samples prepared by sol–gel and ball-milling routes  $\ 1$ 

the structure of  $As_3Se_5Te_2$  infrared optical glass 39

Exchange bias effect

exchange bias effect at the irregular interfaces between Co and CoO nanostructures 27

Exchange interaction

extension of the molecular-field theory on the magnetic behaviors in paramagnetic Dy<sub>3</sub>Ga<sub>5</sub>O<sub>12</sub> 23

#### Fe<sub>3</sub>Al

- effect of fabrication methods on microstructure and mechanical properties of Fe<sub>3</sub>Al-based alloys 117
- Fe-Al-Mn-C-Cr alloy
  - phase transformation of high temperature on Fe–Al–Mn–Cr–C alloy 52 research of phase transformation on Fe–8.7Al–28.3Mn–1C–5.5Cr alloy 246
- f-Electron parametrization

intensity parametrizations for electric-dipole transitions between Stark components in Er<sup>3+</sup>:Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub> 632

Fe-Mn-Mo alloys

influence of Mn content on the magnetic properties and microstructure in Fe-Mn-Mo alloys 129

Ferrites

- effect of zinc substitution on structural and elastic properties of cobalt ferrite 199
- gas sensing properties of magnesium ferrite prepared by co-precipitation method 270

Ferrocene

insertion reactions of scandium pyridyl complexes supported by a ferrocene diamide ligand 518

Ferroelectrics

- dielectric and piezoelectric studies of perovskite–tungsten bronze structured (1 x)PLZT–xPBBiN nanoceramic composites by high-energy mechanical activation technique 211
- the prediction of lattice constants in orthorhombic perovskites 374
- effect of MgO on structure and nonlinear dielectric properties of Ba<sub>0.6</sub>Sr<sub>0.4</sub>TiO<sub>3</sub>/MgO composite ceramics prepared from superfine powders 448
- hardening characteristics and compositional dependence of piezoelectric properties in  $Cu^{2+}$  modified 0.52NaNbO<sub>3</sub>-(0.48 *x*)KNbO<sub>3</sub>-*x*LiNbO<sub>3</sub> ceramics 465

Ferromagnetism

phase transition induced by pressure in TbCrO<sub>4</sub> oxide: Relationship structure–properties 524

Fluoride

corrosion resistance of titanium-containing dental orthodontic wires in fluoride-containing artificial saliva 482

Fluorine doped tin oxide

electrical, structural and optical properties of SnO<sub>2</sub>:F thin films: Effect of the substrate temperature 350

Forbidden transitions

 $f \leftrightarrow f$  electric dipole transitions; old problems in a new light 586 FPLAPW

FPLAPW study of the structural, electronic, and optical properties of Ga<sub>2</sub>O<sub>3</sub>: Monoclinic and hexagonal phases 148

Free volume

quantification of the free volume in  $Zr_{45.0}Cu_{39.3}Al_{7.0}Ag_{8.7}$  bulk metallic glasses subjected to plastic deformation by calorimetric and dilatometric measurements 65

- Fuel cells
  - EXAFS study of nanocrystalline  ${\rm CeO}_2$  samples prepared by sol–gel and ball-milling routes 1
  - study of LaCoO<sub>3</sub> as a cathode catalyst for a membraneless direct borohydride fuel cell 204

Grain boundaries giant dielectric permittivity in Li and Pr co-doped NiO ceramics 31 grain growth in Ni–Mn–Ga alloys 420 Grain refinement effect of active heterogeneous nucleation particles on the grain refining efficiency in an Mg–10 wt.% Y cast alloy 260 Grain size investigation of structural, electrical and magnetic properties of BiFeO<sub>3</sub>– Bi(MgTi)O<sub>3</sub>–PbTiO<sub>3</sub> ceramic system 459 Growth characteristic effects of cathode pulse at low frequency on the structure and composition of plasma electrolytic oxidation ceramic coatings 273 H diffusion hydrogen solubilities and permeabilities in un-oxidized and partially

hydrogen sensors made of undoped and Pt-doped SnO<sub>2</sub> nanowires L21

high-frequency GMI effect in glass-coated amorphous wires 9

gas sensing properties of magnesium ferrite prepared by co-precipitation

internally oxidized fcc Pd–Fe andalloys (393–523 K) 72

Hardness

- study of the influence of copper and magnesium additions on the microstructure formation of Zn–Al hypoeutectic alloys 89
- effect of fabrication methods on microstructure and mechanical properties of Fe<sub>3</sub>Al-based alloys 117

#### HDDR magnetic powders

anisotropic HDDR Nd–Fe–B magnetic powders prepared directly from strip casting alloy flakes 310

#### Heat capacity

high-temperature heat capacity and heat content of  $CaCu_3Ti_4O_{12}$  (CCTO) 35 phase transition of the orthorhombic fluorite-related compounds  $Ln_3IrO_7$  (Ln = Pr, Nd, Sm, Eu) 541

Heat treatment

research of phase transformation on Fe–8.7Al–28.3Mn–1C–5.5Cr alloy 246 Heavy fermions

reinvestigation of the isothermal section of the Ce–Co–Ge ternary system, at 700  $^\circ\text{C}$  123

possible two-band superconductivity in  $PuRhGa_5$  and  $CeRhIn_5$  554 Heterogeneous nucleation

effect of active heterogeneous nucleation particles on the grain refining efficiency in an Mg-10 wt.% Y cast alloy 260

Heusler alloy

mössbauer study on ferromagnetic shape memory alloys  $\rm Ni_2Mn_{1-x}Fe_xGa$  243

High pressure

FPLAPW study of the structural, electronic, and optical properties of Ga<sub>2</sub>O<sub>3</sub>: Monoclinic and hexagonal phases 148

High temperature microstructure

phase transformation of high temperature on Fe–Al–Mn–Cr–C alloy 52 High-energy ball milling

mechanically activated self-propagating high-temperature synthesis of  $La_{0.9}Sr_{0.1}Ga_{0.8}Mg_{0.2}O_{3-8}$  as an electrolyte for SOFC 238

High-pressure synthesis

phase transition induced by pressure in TbCrO<sub>4</sub> oxide: Relationship structure–properties 524

Hot pressing

effect of fabrication methods on microstructure and mechanical properties of Fe<sub>3</sub>Al-based alloys 117

Hydrogen

- hydrogen sensors made of undoped and Pt-doped SnO<sub>2</sub> nanowires L21
- studies of Mg film and substrate coupling effects on hydrogenation properties 360
- study on the photocatalytic activity of  $\mathrm{K_{2}La_{2}Ti_{3}O_{10}}$  doped with vanadium (V) 364

#### Hydrogen storage

synthesis and hydrogen storage properties of mechanically ball-milled SiC/MgH<sub>2</sub> nanocomposites 265 Hydrogen storage materials

effects of mechanical alloying on the hydrogen storage properties of the  $Mg_{76}Ti_{12}Fe_{12-x}Ni_x$  (x = 4, 8) materials 163

Hydrogen storage properties

effects of mechanical alloying on the hydrogen storage properties of the  $Mg_{76}Ti_{12}Fe_{12-x}Ni_x$  (x = 4, 8) materials 163

Infrared spectroscopy

- structure and thermal behaviour of Sr-doped (NH<sub>4</sub>)<sub>2</sub>TeBr<sub>6</sub> material L10 Inorganic, amorphous and optical materials
  - optical properties of  $Nd^{3+}$  and  $Er^{3+}$  ions in fluoro-phosphate glasses: Effects of  $P_2O_5$  concentration and laser applications 606

Inorganic materials

enhancing nanoscale patterning on Ge–Sb–Sn–O inorganic resist film by introducing oxygen during blue laser-induced thermal lithography 190 a general process to synthesize self-assembled shell-like (Ca<sub>0.61</sub>, Nd<sub>0.26</sub>)TiO<sub>3</sub>

clusters 300 Insulators

spectroscopic studies of the 1.5  $\mu m~(^4I_{15/2} \rightarrow \ ^4I_{13/2})$  emission from polycrystalline ceramic Er:YAG and Er:KPb\_2Cl\_5 624

Intercalation

formation of composite nanomaterial  ${\rm MnPS}_3$  layered structure intercalated with pyridine ~284

Interfacial morphology

- interfacial morphologies between NiO–YSZ fuel electrode/316 stainless steel as the interconnect material and B–Ni3 brazing alloy in a solid oxide fuel cell system L1 Intermetallics
  - synthesis and magnetic properties of  $(Pr_{1-x}Sm_x)_5Fe_{17}$  (x = 0-1) phase 13 relationship between the magnetic hyperfine field and the magnetic moment 18
  - dislocations in the ductile B2 YAg intermetallic compound 44
  - identification of a new hexagonal phase in the Al-Cu-Re system 108
  - reinvestigation of the isothermal section of the Ce–Co–Ge ternary system, at 700  $^\circ\text{C}$  123
  - mechanochemical synthesis of (Fe,Ti)<sub>3</sub>Al-Al<sub>2</sub>O<sub>3</sub> nanocomposite 144

effects of Si additions on intermetallic compound layer of aluminum-steel TIG welding-brazing joint 217

- fabrication of oxidation-resistant  $\beta$ -FeSi<sub>2</sub> film on Mg<sub>2</sub>Si by RF magnetronsputtering deposition 346
- coating of Al substrate by metallic Ni through mechanical alloying 430
- structural chemistry and magnetic properties of  $RE_2[Sn_xGe_{1-x}]_5$  (*RE* = Nd, Sm) and  $RE[Sn_xGe_{1-x}]_2$  (*RE* = Gd, Tb): Four new rare-earth metal intermetallic compounds with germanium zig-zag chains and tin square-nets 511
- spontaneous generation of voltage in the magnetocaloric compound Tb<sub>5</sub>Si<sub>2.2</sub>Ge<sub>1.8</sub> and elemental Gd 550
- extended short-range ferromagnetic order with cluster-glass behavior in  $\mathrm{Dy}_{2}\mathrm{AuSi}_{3}$  558

#### Internal friction

internal friction of polycrystalline Zr<sub>0.8</sub>R<sub>0.2</sub>O<sub>1.9</sub> (R = Nd, Y) 562

Ion beam mixing

non-equilibrium alloy formation in the Ag-Zr system by ion beam mixing 223

#### Judd-Ofelt theory

 $f \leftrightarrow f$  electric dipole transitions; old problems in a new light 586

#### Kinetics

fabrication of oxidation-resistant  $\beta\text{-FeSi}_2$  film on Mg\_Si by RF magnetron-sputtering deposition 346

K<sub>2</sub>La<sub>2</sub>Ti<sub>3</sub>O<sub>10</sub>

study on the photocatalytic activity of  $K_2La_2Ti_3O_{10}$  doped with vanadium (V) 364

LaCoO<sub>3</sub>, Hydrogen storage alloy

study of  $LaCoO_3$  as a cathode catalyst for a membraneless direct borohydride fuel cell 204

Lanthanide alloys and materials

possible two-band superconductivity in PuRhGa<sub>5</sub> and CeRhIn<sub>5</sub> 554 Lanthanides

advances in f element reductive reactivity as a paradigm for expanding lanthanide and actinide science and technology 493

- Lanthanum
  - formation of featured nano-structure in thermal stable La-doped alumina composite catalyst 546

Lanthanum gallate

mechanically activated self-propagating high-temperature synthesis of  $La_{0.9}Sr_{0.1}Ga_{0.8}Mg_{0.2}O_{3-\delta}$  as an electrolyte for SOFC 238

LaOFeP

electrical and magnetic properties of La deficient superconductor  $La_{1-x}$ OFeP L14

#### Lattice constant

influence of sulfur, selenium and tellurium doping on optical, electrical and structural properties of thin films of lead salts 334

#### Lattice expansion

- correlation between structure variation and luminescence red shift in YAG:Ce 638
- Lead chalcogenides
  - influence of sulfur, selenium and tellurium doping on optical, electrical and structural properties of thin films of lead salts 334

Levitation force

comparison of levitation force relative to thickness of disk shaped  $\rm YBa_2Cu_3O_{7-x}$  prepared by MPMG and FQMG processes 425

Li105Fe0.997Cu0003PO4

copper-substituted, lithium rich iron phosphate as cathode material for lithium secondary batteries 380

LiFePO₄

copper-substituted, lithium rich iron phosphate as cathode material for lithium secondary batteries 380

#### Light absorption

Langmuir–Blodgett films incorporating an ionic europium complex 595 Light absorption and reflection

- spectroscopic studies of the 1.5  $\mu$ m ( ${}^{4}I_{15/2} \rightarrow {}^{4}I_{13/2}$ ) emission from polycrystalline ceramic Er:YAG and Er:KPb<sub>2</sub>Cl<sub>5</sub> 624
- spectroscopic characterization of Praseodymium doped Gallium Nitride powder prepared by a Na flux method 628

Light emitting diode

the energy transfer from  $Eu^{2+}$  to  $Tb^{3+}$  in  $Ca_{10}K(PO_4)_7$  and its application in green light emitting diode 582

#### LiNiTiO<sub>2</sub>

electrochemical and mechanical properties of superelastic electrode consisting of Ti substitute LiNiO<sub>2</sub> film on Ti–50Ni alloy L17

Liquid quenching

synthesis and magnetic properties of  $(Pr_{1-x}Sm_x)_5Fe_{17}$  (x = 0-1) phase 13

study of structure and optical properties of  ${\rm Fe_2O_3\cdot CaO\cdot Bi_2O_3}$  glasses 454

Liquid-solid reactions

- effects of Si additions on intermetallic compound layer of aluminum-steel TIG welding-brazing joint 217
- Lithium ion battery
  - preparation and electrochemical studies of  $\text{Li}_3\text{V}_2(\text{PO}_4)_3/\text{Cu}$  composite cathode material for lithium ion batteries L26

LSMO film

structural and magnetotransport properties of La<sub>0.67</sub>Sr<sub>0.33</sub>MnO<sub>z</sub> thin films prepared by metal–organic decomposition under different annealing process 437

LT

effect of sintering temperature on the piezoelectric and ferroelectric characteristics of CuO doped 0.95(Na<sub>0.5</sub>K<sub>0.5</sub>)NbO<sub>3</sub>-0.05LiTaO<sub>3</sub> ceramics 169 Luminescence

the luminescence characteristics of ZnS<sub>x</sub>Se<sub>1-x</sub> phosphor powder 250 luminescence properties of a novel red emitting phosphor, Mg<sub>2</sub>GeO<sub>4</sub>:Sm<sup>3+</sup> 331 lanthanide charge transfer energies and related luminescence, charge carrier trapping, and redox phenomena 568

optical studies of sub-3 nm Eu<sub>2</sub>O<sub>3</sub> and Gd<sub>2</sub>O<sub>3</sub>:Eu<sup>3+</sup> nanocrystals 574

absorption cross-section control of Eu(III) complexes for increase of amplified spontaneous emission excited by third harmonic of nanosecond Nd:YAG laser 578

Langmuir–Blodgett films incorporating an ionic europium complex 595 circularly polarized luminescence from chiral Eu(III) Complex with high emission quantum yield 599 In situ generation of fluorescent macrocyclic europium(II) complexes via zinc mössbauer study on ferromagnetic shape memory alloys Ni<sub>2</sub>Mn<sub>1-x</sub>Fe<sub>x</sub>Ga 243 Mass spectrometry moisture and surface area measurements of plutonium-bearing oxides 565 structural and optical properties of  $GdAlO_3$ :RE<sup>3+</sup> (RE = Eu or Tb) prepared Mechanical activation dielectric and piezoelectric studies of perovskite-tungsten bronze structured spectroscopic studies of the 1.5  $\mu m~({}^4I_{15/2} \rightarrow {}^4I_{13/2})$  emission from (1 - x)PLZT-xPBBiN nanoceramic composites by high-energy mechanical activation technique 211 spectroscopic characterization of Praseodymium doped Gallium Nitride Mechanical alloying mechanochemical synthesis of (Fe,Ti)<sub>3</sub>Al-Al<sub>2</sub>O<sub>3</sub> nanocomposite 144 effects of mechanical alloying on the hydrogen storage properties of the effects of mechanical alloying on the hydrogen storage properties of the  $Mg_{76}Ti_{12}Fe_{12-x}Ni_{x}$  (x = 4, 8) materials 163 nanocomposite thermite powders prepared by cryomilling 386 coating of Al substrate by metallic Ni through mechanical alloying 430 effect of active heterogeneous nucleation particles on the grain refining Mechanical loss internal friction of polycrystalline  $Zr_{0.8}R_{0.2}O_{1.9}$  (R = Nd, Y) 562 corrosion behaviors of Mg and its alloys with different Al contents in a Mechanical milling synthesis and hydrogen storage properties of mechanically ball-milled synthesis and hydrogen storage properties of mechanically ball-milled SiC/MgH<sub>2</sub> nanocomposites 265 Mechanical properties the structure and mechanical properties of Fe<sub>3</sub>Al-30 vol.% Al<sub>2</sub>O<sub>3</sub> nanocomposite 134 effects of Si additions on intermetallic compound layer of aluminum-steel TIG welding-brazing joint 217 the structure and mechanical properties of as-cast Zr-Ti alloys 279 Mechanochemical processing the structure and mechanical properties of Fe<sub>3</sub>Al-30 vol.% Al<sub>2</sub>O<sub>3</sub> nanocomposite 134 Melt process comparison of levitation force relative to thickness of disk shaped YBa<sub>2</sub>Cu<sub>3</sub>O<sub>7-x</sub> prepared by MPMG and FQMG processes 425 Melting point joining 6061 aluminum alloy with Al-Si-Cu filler metals 174 Mesoporous zinc aluminate facile synthesis of mesoporous ZnAl<sub>2</sub>O<sub>4</sub> thin films through the evaporationinduced self-assembly method 320 Metallic glasses quantification of the free volume in  $Zr_{45,0}Cu_{39,3}Al_{7,0}Ag_{8,7}$  bulk metallic glasses subjected to plastic deformation by calorimetric and dilatometric measurements 65 high thermal stability of soft magnetic (Fe,Co)-Mo-B-C-P-Si metallic glasses 79 Metallography reinvestigation of the isothermal section of the Ce-Co-Ge ternary system, at 700 °C 123 Metal-organic decomposition structural and magnetotransport properties of  $La_{0.67}Sr_{0.33}MnO_z$  thin films prepared by metal-organic decomposition under different annealing process 437 Metals and alloys microstructure and compressive properties of in situ synthesized Nd<sub>2</sub>O<sub>3</sub>/ Ti-6Si (wt.%) alloy composites 47 microstructure and mechanical property of as-cast, -homogenized, and deformed Al<sub>x</sub>CoCrFeNi ( $0 \le x \le 2$ ) high-entropy alloys 57 ternary  $\beta$  and  $\gamma$  phases in the Al–Au–Cu system at 750 °C 100 the research of Ti-rich zone on the interface between TiC, and aluminum melt and the formation of Ti<sub>2</sub>Al in rapid solidified Al-Ti-C master alloys 84 determination of interfacial energies in the Al-Ag and Sn-Ag alloys by using Bridgman type solidification apparatus 138 the structure and mechanical properties of as-cast Zr-Ti alloys 279 nanocomposite thermite powders prepared by cryomilling 386 Metamagnetism phase transition induced by pressure in TbCrO<sub>4</sub> oxide: Relationship structure-properties 524 Metastable crystalline phase interfacial morphologies between NiO-YSZ fuel electrode/316 stainless steel non-equilibrium alloy formation in the Ag-Zr system by ion beam mixing 223 as the interconnect material and B-Ni3 brazing alloy in a solid oxide fuel Metastable miscibility gap thermodynamic modeling of the Sc<sub>2</sub>O<sub>3</sub>-MgO phase diagram 479 Methane decomposition investigations on the effects of CoO<sub>x</sub> to MoO<sub>x</sub> ratio and CoO<sub>x</sub>-MoO<sub>x</sub> loading

on methane decomposition into carbon nanotubes 294

Martensitic transformations

influence of Mn content on the magnetic properties and microstructure in Fe-Mn-Mo alloys 129

- Magnetic measurements synthesis and magnetic properties of  $(Pr_{1-x}Sm_x)_5Fe_{17}$  (x = 0-1) phase 13 relationship between the magnetic hyperfine field and the magnetic moment 18 exchange bias effect at the irregular interfaces between Co and CoO nanostructures 27 influence of stirring velocity on the synthesis of magnetite nanoparticles (Fe<sub>3</sub>O<sub>4</sub>) by the co-precipitation method 227 magnetic greigite (Fe<sub>3</sub>S<sub>4</sub>) nanomaterials: Shape-controlled solvothermal synthesis and their calcination conversion into hematite  $(\alpha - Fe_2O_3)$ nanomaterials 339 structural chemistry and magnetic properties of  $RE_2[Sn_xGe_{1-x}]_5$  (RE = Nd, Sm) and  $RE[Sn_xGe_{1-x}]_2$  (RE = Gd, Tb): Four new rare-earth metal intermetallic compounds with germanium zig-zag chains and tin square-nets 511 polymorphism in binary rare-earth metal germanides. Synthesis, structure and properties of the new hexagonal forms of Tb<sub>2</sub>Ge<sub>5</sub> and Dy<sub>2</sub>Ge<sub>5</sub> 533 extended short-range ferromagnetic order with cluster-glass behavior in Dy<sub>2</sub>AuSi<sub>2</sub> 558 Magnetic moment mössbauer study on ferromagnetic shape memory alloys Ni<sub>2</sub>Mn<sub>1-v</sub>Fe<sub>v</sub>Ga 243 Magnetic properties extension of the molecular-field theory on the magnetic behaviors in paramagnetic Dy<sub>3</sub>Ga<sub>5</sub>O<sub>12</sub> 23 influence of Mn content on the magnetic properties and microstructure in Fe-Mn-Mo allovs 129
  - wires 5

high-frequency GMI effect in glass-coated amorphous wires 9

Magnetically ordered materials

reduction 603

Magnesium alloys

Magnesium hydride

Tb<sup>3+</sup> and Eu<sup>3+</sup> luminescence in imidazolium ionic liquids 615

polycrystalline ceramic Er:YAG and Er:KPb<sub>2</sub>Cl<sub>5</sub> 624

powder prepared by a Na flux method 628

 $Mg_{76}Ti_{12}Fe_{12-x}Ni_x$  (x = 4, 8) materials 163

modified simulated body fluid 392

SiC/MgH<sub>2</sub> nanocomposites 265

efficiency in an Mg-10 wt.% Y cast alloy 260

by the Pechini method for application as X-ray phosphors 619

- grain growth in Ni-Mn-Ga alloys 420
- phase transition of the orthorhombic fluorite-related compounds Ln<sub>3</sub>IrO<sub>7</sub> (*Ln* = Pr, Nd, Sm, Eu) 541
- spontaneous generation of voltage in the magnetocaloric compound
- Magnetocaloric effect
  - spontaneous generation of voltage in the magnetocaloric compound  $\mathrm{Tb}_{\mathrm{5}}\mathrm{Si}_{2.2}\mathrm{Ge}_{\mathrm{1.8}}$  and elemental Gd ~550
- Magnetotransport
  - prepared by metal-organic decomposition under different annealing process 437

cell system L1

magnetic and transport properties of Fe-rich thin cold-drawn amorphous

- Tb<sub>5</sub>Si<sub>2.2</sub>Ge<sub>1.8</sub> and elemental Gd 550

structural and magnetotransport properties of  $\rm La_{0.67}Sr_{0.33}MnO_z$  thin films

Magnetron plasma sputtering deposition

Magnetic softness

Mg studies of Mg film and substrate coupling effects on hydrogenation properties 360

Mg<sub>2</sub>GeO<sub>4</sub>:Sm

luminescence properties of a novel red emitting phosphor, Mg<sub>2</sub>GeO<sub>4</sub>:Sm<sup>3+</sup> 331

 $MgH_2$ 

studies of Mg film and substrate coupling effects on hydrogenation properties 360

Microstructure

- microstructure and mechanical property of as-cast, -homogenized, and deformed Al<sub>x</sub>CoCrFeNi ( $0 \le x \le 2$ ) high-entropy alloys 57
- enhancing nanoscale patterning on Ge–Sb–Sn–O inorganic resist film by introducing oxygen during blue laser-induced thermal lithography 190 effects of Si additions on intermetallic compound layer of aluminum–steel TIG welding–brazing joint 217
- the structure and mechanical properties of as-cast Zr-Ti alloys 279
- coating of Al substrate by metallic Ni through mechanical alloying 430 Microstructure formation
  - study of the influence of copper and magnesium additions on the microstructure formation of Zn–Al hypoeutectic alloys 89

Microwave dielectric properties

new high- $\varepsilon$  and high-Q microwave dielectric ceramics:  $(1 - x)Ca_{0.61}Nd_{0.26}TiO_3 - xNd(Zn_{0.5}Ti_{0.5})O_3$  409

Moisture

- moisture and surface area measurements of plutonium-bearing oxides 565 Molecular-field theory
  - extension of the molecular-field theory on the magnetic behaviors in paramagnetic  $\text{Dy}_3\text{Ga}_5\text{O}_{12}$  23

Mössbauer spectroscopy

- relationship between the magnetic hyperfine field and the magnetic moment 18
- influence of Mn content on the magnetic properties and microstructure in Fe–Mn–Mo alloys 129
- mössbauer study on ferromagnetic shape memory alloys  $Ni_2Mn_{1-x}Fe_xGa$  243 Multiferroics

magnetic and electrical properties of  $Bi_{0.8}Ca_{0.2}Fe_{1-x}Mn_xO_3$  ( $0 \le x \le 0.5$ ) 254

#### Nanocrystals

EXAFS study of nanocrystalline CeO<sub>2</sub> samples prepared by sol-gel and ballmilling routes 1

Nanofabrications

- enhancing nanoscale patterning on Ge–Sb–Sn–O inorganic resist film by introducing oxygen during blue laser-induced thermal lithography 190 influence of stirring velocity on the synthesis of magnetite nanoparticles
- $(Fe_3O_4)$  by the co-precipitation method 227

Nanomaterials

- formation of composite nanomaterial MnPS<sub>3</sub> layered structure intercalated with pyridine 284
- synthesis of different morphologies of bismuth sulfide nanostructures via hydrothermal process in the presence of thioglycolic acid 442

Nanostructured materials

the structure and mechanical properties of Fe\_3Al-30 vol.%  $\rm Al_2O_3$  nanocomposite 134

mechanochemical synthesis of (Fe,Ti)<sub>3</sub>Al–Al<sub>2</sub>O<sub>3</sub> nanocomposite 144

- magnetic greigite  $(Fe_3S_4)$  nanomaterials: Shape-controlled solvothermal synthesis and their calcination conversion into hematite  $(\alpha$ -Fe<sub>2</sub>O<sub>3</sub>) nanomaterials 339
- preparation and near-infrared absorption of nano-SnO\_2/SiO\_2 assemblies with doping and without doping 370
- nanocomposite thermite powders prepared by cryomilling 386
- crystal growth of nanoscaled europium selenide having characteristic crystal shapes 538

optical studies of sub-3 nm  $\rm Eu_2O_3$  and  $\rm Gd_2O_3:Eu^{3+}$  nanocrystals 574 Nanostructures

exchange bias effect at the irregular interfaces between Co and CoO nanostructures 27

Nanowires

hydrogen sensors made of undoped and Pt-doped SnO<sub>2</sub> nanowires L21

room temperature photoluminescence and dc resistivity of Si<sub>0.95</sub>Ge<sub>0.05</sub> alloy nanowires grown in microwave H-field 328

#### Nd

internal friction of polycrystalline  $Zr_{0.8}R_{0.2}O_{1.9}$  (R = Nd, Y) 562

Neumann-Kopp rule

high-temperature heat capacity and heat content of  $CaCu_{3}Ti_{4}O_{12}(\text{CCTO})~35$  Neutron diffraction

the structure of As<sub>3</sub>Se<sub>5</sub>Te<sub>2</sub> infrared optical glass 39

Nickel-based superalloy

the isothermal oxidation behaviors of as-deposited and heat-treated Ni-11.5Cr-4.5Co-0.5Al sheet by EB-PVD at 800 °C L30

#### NiO

giant dielectric permittivity in Li and Pr co-doped NiO ceramics 31 NiO-YSZ cermet

interfacial morphologies between NiO-YSZ fuel electrode/316 stainless steel as the interconnect material and B-Ni3 brazing alloy in a solid oxide fuel cell system L1

NKN

effect of sintering temperature on the piezoelectric and ferroelectric characteristics of CuO doped 0.95(Na<sub>0.5</sub>K<sub>0.5</sub>)NbO<sub>3</sub>-0.05LiTaO<sub>3</sub> ceramics 169

#### Optical properties

- FPLAPW study of the structural, electronic, and optical properties of Ga<sub>2</sub>O<sub>3</sub>: Monoclinic and hexagonal phases 148
- microstructure and optical properties of polycrystalline ZnO films sputtered under different oxygen flow rates 232
- electro-optical properties of  $Bi_xLa_ySc_z(BO_3)_4$  (x + y + z = 4) nanocrystallites having huntite structure incorporated into polymer matrices 291

preparation, characterization of P-doped TiO<sub>2</sub> nanoparticles and their excellent photocatalystic properties under the solar light irradiation 314

- electrical, structural and optical properties of  $SnO_2$ : F thin films: Effect of the substrate temperature 350
- In situ generation of fluorescent macrocyclic europium(II) complexes via zinc reduction 603
- optical properties of  $Nd^{3+}$  and  $Er^{3+}$  ions in fluoro-phosphate glasses: Effects of  $P_2O_5$  concentration and laser applications 606
- structural and optical properties of  $GdAlO_3:RE^{3+}$  (RE = Eu or Tb) prepared by the Pechini method for application as X-ray phosphors 619

#### Optical spectroscopy

optical studies of sub-3 nm Eu<sub>2</sub>O<sub>3</sub> and Gd<sub>2</sub>O<sub>3</sub>:Eu<sup>3+</sup> nanocrystals 574 circularly polarized luminescence from chiral Eu(III) Complex with high emission quantum yield 599

structural and optical properties of GdAlO<sub>3</sub>:RE<sup>3+</sup> (RE = Eu or Tb) prepared by the Pechini method for application as X-ray phosphors 619

#### Oxidation

- the isothermal oxidation behaviors of as-deposited and heat-treated Ni-11.5Cr-4.5Co-0.5Al sheet by EB-PVD at 800 °C L30
- fabrication of oxidation-resistant  $\beta\text{-FeSi}_2$  film on  $Mg_2Si$  by RF magnetron-sputtering deposition  $\;346$

Oxide materials

- influence of stirring velocity on the synthesis of magnetite nanoparticles  $(Fe_3O_4)$  by the co-precipitation method 227
- preparation, characterization of P-doped TiO<sub>2</sub> nanoparticles and their excellent photocatalystic properties under the solar light irradiation 314
- preparation and near-infrared absorption of nano-SnO<sub>2</sub>/SiO<sub>2</sub> assemblies with doping and without doping 370
- effect of MgO on structure and nonlinear dielectric properties of Ba<sub>06</sub>Sr<sub>0.4</sub>TiO<sub>3</sub>/MgO composite ceramics prepared from superfine powders 448

Oxygen deficiency

electrical and magnetic properties of La deficient superconductor  $La_{1-x}$  OFeP L14 Oxygen reduction reaction

Pt<sub>x</sub>Ni alloy nanoparticles as cathode catalyst for PEM fuel cells with enhanced catalytic activity 195

#### Parametrization of f-spectra

f↔f electric dipole transitions; old problems in a new light 586 Passive film

corrosion resistance of titanium-containing dental orthodontic wires in fluoride-containing artificial saliva 482

Pd-Fe alloys

hydrogen solubilities and permeabilities in un-oxidized and partially internally oxidized fcc Pd–Fe andalloys (393–523 K) 72

PEM fuel cell

Pt<sub>x</sub>Ni alloy nanoparticles as cathode catalyst for PEM fuel cells with enhanced catalytic activity 195

Permanent magnets

- synthesis and magnetic properties of  $(Pr_{1-x}Sm_x)_5Fe_{17} (x = 0-1)$  phase 13 Phase diagrams
  - ternary  $\beta$  and  $\gamma$  phases in the Al–Au–Cu system at 750 °C 100 thermodynamic modeling of the Sc<sub>2</sub>O<sub>4</sub>–MgO phase diagram 479

Phase transformation

- study of the influence of copper and magnesium additions on the microstructure formation of Zn–Al hypoeutectic alloys 89
- research of phase transformation on Fe–8.7Al–28.3Mn–1C–5.5Cr alloy 246 Phase transitions
  - determination of interfacial energies in the Al–Ag and Sn–Ag alloys by using Bridgman type solidification apparatus 138
  - preparation, characterization of P-doped TiO<sub>2</sub> nanoparticles and their excellent photocatalystic properties under the solar light irradiation 314 experimental study of phase transformation and specific heat of ternary
  - zirconia-based oxides using differential scanning calorimetry 469
  - formation of featured nano-structure in thermal stable La-doped alumina composite catalyst 546

Phosphate

- the luminescence characteristics of ZnS<sub>x</sub>Se<sub>1-x</sub> phosphor powder 250 luminescence properties of a novel red emitting phosphor, Mg<sub>2</sub>GeO<sub>4</sub>:Sm<sup>3+</sup> 331
- optical studies of sub-3 nm Eu<sub>2</sub>O<sub>2</sub> and Gd<sub>2</sub>O<sub>3</sub>:Eu<sup>3+</sup> nanocrystals 574
- the energy transfer from  $Eu^{2+}$  to  $Tb^{3+}$  in  $Ca_{10}K(PO_4)_7$  and its application in green light emitting diode  $\ 582$
- lanthanide charge transfer energies and related luminescence, charge carrier trapping, and redox phenomena 568
- Langmuir–Blodgett films incorporating an ionic europium complex 595 Photocatalytic activity
- study on the photocatalytic activity of  $\rm K_2La_2Ti_3O_{10}$  doped with vanadium (V) 364
- Photoluminescence
  - room temperature photoluminescence and dc resistivity of Si<sub>0.95</sub>Ge<sub>0.05</sub> alloy nanowires grown in microwave H-field 328
  - improved photoluminescence properties of europium complex/polyacrylonitrile composite fibers prepared by electrospinning 414
- Piezoelectricity
  - dielectric and piezoelectric studies of perovskite–tungsten bronze structured (1 *x*)PLZT–*x*PBBiN nanoceramic composites by high-energy mechanical activation technique 211
  - hardening characteristics and compositional dependence of piezoelectric properties in  $Cu^{2+}$  modified 0.52NaNbO<sub>3</sub>-(0.48 x)KNbO<sub>3</sub>-xLiNbO<sub>3</sub> ceramics 465

Plasma activated sintering

effect of fabrication methods on microstructure and mechanical properties of Fe<sub>3</sub>Al-based alloys 117

Plasma electrolytic oxidation

effects of cathode pulse at low frequency on the structure and composition of plasma electrolytic oxidation ceramic coatings 273

Platinum

- hydrogen sensors made of undoped and Pt-doped  ${\rm SnO}_2$  nanowires L21 Plutonium oxide
- moisture and surface area measurements of plutonium-bearing oxides 565 Point defects
  - lanthanide charge transfer energies and related luminescence, charge carrier trapping, and redox phenomena 568

Polyacrylonitrile (PAN)

improved photoluminescence properties of europium complex/polyacrylonitrile composite fibers prepared by electrospinning 414

Polymers

absorption cross-section control of Eu(III) complexes for increase of amplified spontaneous emission excited by third harmonic of nanosecond Nd:YAG laser 578 Polymorphism

polymorphism in binary rare-earth metal germanides. Synthesis, structure and properties of the new hexagonal forms of Tb<sub>3</sub>Ge<sub>5</sub> and Dy<sub>3</sub>Ge<sub>5</sub> 533 Powder metallurgy

phase transition of the orthorhombic fluorite-related compounds *Ln*<sub>3</sub>IrO<sub>7</sub> (*Ln* = Pr, Nd, Sm, Eu) 541

Powders

investigation of structural, electrical and magnetic properties of BiFeO<sub>3</sub>– Bi(MgTi)O<sub>3</sub>–PbTiO<sub>3</sub> ceramic system 459

### Preparation

structure and thermal behaviour of Sr-doped  $(NH_4)_2$ TeBr<sub>6</sub> material L10 Proton-conducting solid oxide fuel cells

stable BaCe<sub>0.5</sub>Zr<sub>0.3</sub>Y<sub>0.16</sub>Zn<sub>0.04</sub>O<sub>3-8</sub> electrolyte-based proton-conducting solid oxide fuel cells with layered SmBa<sub>0.5</sub>Sr<sub>0.5</sub>Co<sub>2</sub>O<sub>5+8</sub> cathode 208

### Pt-Ni alloys

Pt<sub>x</sub>Ni alloy nanoparticles as cathode catalyst for PEM fuel cells with enhanced catalytic activity 195

#### Pyridine

formation of composite nanomaterial  $MnPS_3$  layered structure intercalated with pyridine 284

Pyridyl

insertion reactions of scandium pyridyl complexes supported by a ferrocene diamide ligand 518

#### Quantum yield

emission properties of Sm(III) complexes having remarkably deep-red emission band 612

#### Radiation effects

preparation, characterization of P-doped TiO<sub>2</sub> nanoparticles and their excellent photocatalystic properties under the solar light irradiation 314 Raman scattering

- a back-scattering laser Raman combination method of EFIRS and SERS to study TiO<sub>2</sub> nanoparticles 325
- Raman spectra and hydrogen pressure
- role of hydrogen in CdTe–Mn thin film bilayer structure 356 Rapid solidification

the research of Ti-rich zone on the interface between  $TiC_x$  and aluminum melt and the formation of  $Ti_3Al$  in rapid solidified Al–Ti–C master alloys 84

- Rare earth alloys and compounds
  - crystal growth of nanoscaled europium selenide having characteristic crystal shapes 538
  - circularly polarized luminescence from chiral Eu(III) Complex with high emission quantum yield 599
  - In situ generation of fluorescent macrocyclic europium(II) complexes via zinc reduction 603
  - structural and optical properties of  $GdAlO_3:RE^{3+}$  (RE = Eu or Tb) prepared by the Pechini method for application as X-ray phosphors 619

#### Rare earth alloys compounds

optical studies of sub-3 nm  $\rm Eu_2O_3$  and  $\rm Gd_2O_3:Eu^{3+}$  nanocrystals 574 Rare earth compounds

Tb<sup>3+</sup> and Eu<sup>3+</sup> luminescence in imidazolium ionic liquids 615 Rare-earth germanides

- polymorphism in binary rare-earth metal germanides. Synthesis, structure
  - and properties of the new hexagonal forms of  $Tb_3Ge_5$  and  $Dy_3Ge_5$  533 to capability.

## Rate capability

- copper-substituted, lithium rich iron phosphate as cathode material for lithium secondary batteries 380
- Recrystallization
  - recrystallization of twin-roll cast Al-Fe-Si foil stock processed without homogenization 112
- Red shift
  - preparation and near-infrared absorption of nano-SnO<sub>2</sub>/SiO<sub>2</sub> assemblies with doping and without doping 370

#### Reduction

- advances in f element reductive reactivity as a paradigm for expanding lanthanide and actinide science and technology 493
- Relaxation
  - internal friction of polycrystalline Zr<sub>0.8</sub>R<sub>0.2</sub>O<sub>1.9</sub> (R = Nd, Y) 562

#### Saturation magnetization

cation distribution of titanium substituted cobalt ferrites L6

SC alloy flakes

anisotropic HDDR Nd-Fe-B magnetic powders prepared directly from strip casting alloy flakes 310

Scandium

- insertion reactions of scandium pyridyl complexes supported by a ferrocene diamide ligand 518
- Scanning electron microscopy (SEM)
  - microstructure and compressive properties of in situ synthesized Nd<sub>2</sub>O<sub>3</sub>/Ti-6Si (wt.%) alloy composites 47
  - microstructure and mechanical property of as-cast, -homogenized, and deformed Al<sub>x</sub>CoCrFeNi ( $0 \le x \le 2$ ) high-entropy alloys 57
  - ternary  $\beta$  and  $\gamma$  phases in the Al–Au–Cu system at 750 °C  $\,$  100  $\,$
  - fabrication of oxidation-resistant  $\beta\text{-FeSi}_2$  film on  $Mg_2Si$  by RF magnetron-sputtering deposition 346
  - new high- $\varepsilon$  and high-Q microwave dielectric ceramics:  $(1 x)Ca_{0.61}Nd_{0.26}TiO_3 xNd(Zn_{0.5}Ti_{0.5})O_3$  409
- coating of Al substrate by metallic Ni through mechanical alloying  $\,$  430 SC–HDDR process
  - anisotropic HDDR Nd-Fe-B magnetic powders prepared directly from strip casting alloy flakes 310

#### Sc<sub>2</sub>O<sub>3</sub>-MgO

- thermodynamic modeling of the Sc<sub>2</sub>O<sub>3</sub>–MgO phase diagram 479 Semiconductors
  - microstructure and optical properties of polycrystalline ZnO films sputtered under different oxygen flow rates 232
  - room temperature photoluminescence and dc resistivity of Si<sub>0.95</sub>Ge<sub>0.05</sub> alloy nanowires grown in microwave H-field 328
  - spectroscopic characterization of Praseodymium doped Gallium Nitride powder prepared by a Na flux method 628

#### SERS

a back-scattering laser Raman combination method of EFIRS and SERS to study TiO<sub>2</sub> nanoparticles 325

Shape memory

ternary  $\beta$  and  $\gamma$  phases in the Al–Au–Cu system at 750 °C  $\,$  100  $\,$ 

Sintering

- the structure and mechanical properties of Fe<sub>3</sub>Al-30 vol.% Al<sub>2</sub>O<sub>3</sub> nanocomposite 134
- experimental study of phase transformation and specific heat of ternary zirconia-based oxides using differential scanning calorimetry 469

SmBa<sub>0.5</sub>Sr<sub>0.5</sub>Co<sub>2</sub>O<sub>5+δ</sub>

stable BaCe<sub>0.5</sub>Zr<sub>0.3</sub>Y<sub>0.16</sub>Zn<sub>0.04</sub>O<sub>3-δ</sub> electrolyte-based proton-conducting solid oxide fuel cells with layered SmBa<sub>0.5</sub>Sr<sub>0.5</sub>Co<sub>2</sub>O<sub>5+δ</sub> cathode 208

Sm(III) complexes

emission properties of Sm(III) complexes having remarkably deep-red emission band 612

#### SOFC

- a cubic  $BaCo_{0.8}Nb_{0.1}Fe_{0.1}O_{3-\delta}$  ceramic cathode for solid oxide fuel cell L35 Soft magnetic
  - high thermal stability of soft magnetic (Fe,Co)–Mo–B–C–P–Si metallic glasses 79
- Sol-gel process
  - a general process to synthesize self-assembled shell-like (Ca<sub>0.61</sub>, Nd<sub>0.26</sub>)TiO<sub>3</sub> clusters 300
- Sol-gel processes
  - preparation, characterization of P-doped TiO<sub>2</sub> nanoparticles and their excellent photocatalystic properties under the solar light irradiation 314 preparation and near-infrared absorption of nano-SnO<sub>2</sub>/SiO<sub>2</sub> assemblies with doping and without doping 370

Sol-gel synthesis

exchange bias effect at the irregular interfaces between Co and CoO nanostructures 27

Solid oxide fuel cell (SOFC)

mechanically activated self-propagating high-temperature synthesis of  $La_{0.9}Sr_{0.1}Ga_{0.8}Mg_{0.2}O_{3-\delta}$  as an electrolyte for SOFC 238

Solid state reaction

optical properties of Nd<sup>3+</sup> and Er<sup>3+</sup> ions in fluoro-phosphate glasses: Effects of P<sub>2</sub>O<sub>5</sub> concentration and laser applications 606

#### Solidification

study of the influence of copper and magnesium additions on the microstructure formation of Zn–Al hypoeutectic alloys 89

Solid-state reaction

- investigation of structural, electrical and magnetic properties of BiFeO<sub>3</sub>– Bi(MgTi)O<sub>3</sub>–PbTiO<sub>3</sub> ceramic system 459
- formation of featured nano-structure in thermal stable La-doped alumina composite catalyst 546

Solid-state synthesis

copper-substituted, lithium rich iron phosphate as cathode material for lithium secondary batteries 380

#### Spectroscopy of lanthanides

 $f \leftrightarrow f$  electric dipole transitions; old problems in a new light 586

- Spray pyrolysis
  - electrical, structural and optical properties of SnO<sub>2</sub>:F thin films: Effect of the substrate temperature 350

#### Stability

- a cubic  $BaCo_{0.8}Nb_{0.1}Fe_{0.1}O_{3-\delta}$  ceramic cathode for solid oxide fuel cell L35 Sterically induced reduction
- advances in f element reductive reactivity as a paradigm for expanding lanthanide and actinide science and technology 493

#### Structural properties

effect of zinc substitution on structural and elastic properties of cobalt ferrite 199

#### Structure

- structure and thermal behaviour of Sr-doped (NH<sub>4</sub>)<sub>2</sub>TeBr<sub>6</sub> material L10 influence of stirring velocity on the synthesis of magnetite nanoparticles (Fe<sub>2</sub>O<sub>4</sub>) by the co-precipitation method 227
- structural and magnetotransport properties of  $La_{0.67}Sr_{0.33}MnO_z$  thin films prepared by metal–organic decomposition under different annealing process 437

#### Superconductors

electrical and magnetic properties of La deficient superconductor  $La_{1-x}$ OFeP L14

possible two-band superconductivity in PuRhGa<sub>5</sub> and CeRhIn<sub>5</sub> 554

# Superelasticity

electrochemical and mechanical properties of superelastic electrode consisting of Ti substitute LiNiO<sub>2</sub> film on Ti–50Ni alloy L17

#### Surfaces and interfaces

determination of interfacial energies in the Al–Ag and Sn–Ag alloys by using Bridgman type solidification apparatus 138

#### Tb<sub>3</sub>Ge<sub>5</sub>

polymorphism in binary rare-earth metal germanides. Synthesis, structure and properties of the new hexagonal forms of Tb<sub>3</sub>Ge<sub>5</sub> and Dy<sub>3</sub>Ge<sub>5</sub> 533

#### TEM

the research of Ti-rich zone on the interface between  $TiC_x$  and aluminum melt and the formation of  $Ti_3Al$  in rapid solidified Al–Ti–C master alloys 84

identification of a new hexagonal phase in the Al-Cu-Re system 108 Terbium

the energy transfer from  $Eu^{2+}$  to  $Tb^{3+}$  in  $Ca_{10}K(PO_4)_7$  and its application in green light emitting diode  $\ 582$ 

#### The first principles calculation

- study on the photocatalytic activity of  $\mathrm{K_2La_2Ti_3O_{10}}$  doped with vanadium (V) 364
- Thermal analysis
  - nanocomposite thermite powders prepared by cryomilling 386
  - experimental study of phase transformation and specific heat of ternary zirconia-based oxides using differential scanning calorimetry 469
  - phase transition of the orthorhombic fluorite-related compounds  $Ln_3$ IrO<sub>7</sub> (Ln = Pr, Nd, Sm, Eu) 541
  - moisture and surface area measurements of plutonium-bearing oxides 565

#### Thermal desorption spectrometry

synthesis and hydrogen storage properties of mechanically ball-milled SiC/MgH<sub>2</sub> nanocomposites 265 Thermal stability

high thermal stability of soft magnetic (Fe,Co)-Mo-B-C-P-Si metallic glasses 79

Thermodynamic modeling

thermodynamic modeling of the  $Sc_2O_3$ -MgO phase diagram 479

Thermodynamic properties

- high-temperature heat capacity and heat content of  $\text{CaCu}_3\text{Ti}_4\text{O}_{12}\,(\text{CCTO})$  35
- Thermodynamics
  - hydrogen solubilities and permeabilities in un-oxidized and partially internally oxidized fcc Pd–Fe and alloys (393–523 K) 72
- Thermoelectric materials
  - room temperature photoluminescence and dc resistivity of Si<sub>0.95</sub>Ge<sub>0.05</sub> alloy nanowires grown in microwave H-field 328

#### Thermomechanical processing

recrystallization of twin-roll cast Al–Fe–Si foil stock processed without homogenization 112

#### Thin films

- microstructure and optical properties of polycrystalline ZnO films sputtered under different oxygen flow rates 232
- facile synthesis of mesoporous  $\text{ZnAl}_2\text{O}_4$  thin films through the evaporationinduced self-assembly method 320
- electrical, structural and optical properties of  $SnO_2$ : F thin films: Effect of the substrate temperature 350
- studies of Mg film and substrate coupling effects on hydrogenation properties 360
- absorption cross-section control of Eu(III) complexes for increase of amplified spontaneous emission excited by third harmonic of nanosecond Nd:YAG laser 578

Thin films of DMS

- role of hydrogen in CdTe-Mn thin film bilayer structure 356
- Thin wires
  - magnetic and transport properties of Fe-rich thin cold-drawn amorphous wires 5
- high-frequency GMI effect in glass-coated amorphous wires 9 Ti alloy
- effects of cathode pulse at low frequency on the structure and composition of plasma electrolytic oxidation ceramic coatings 273
- Tin oxide
- hydrogen sensors made of undoped and Pt-doped  ${\rm SnO}_2$  nanowires L21  ${\rm TiO}_2$  nanoparticles
  - a back-scattering laser Raman combination method of EFIRS and SERS to study TiO<sub>2</sub> nanoparticles 325
- Titanium-containing orthodontic wire
  - corrosion resistance of titanium-containing dental orthodontic wires in fluoride-containing artificial saliva 482

Toughness

effect of fabrication methods on microstructure and mechanical properties of  ${\rm Fe}_3{\rm Al}{\rm -based}$  alloys 117

Transformation temperature

electrochemical and mechanical properties of superelastic electrode consisting of Ti substitute LiNiO<sub>2</sub> film on Ti–50Ni alloy L17

Transmission electron microscopy (TEM)

- dislocations in the ductile B2 YAg intermetallic compound 44
- identification of a new hexagonal phase in the Al-Cu-Re system 108
- the research of Ti-rich zone on the interface between  $\text{TiC}_x$  and aluminum melt and the formation of  $\text{Ti}_3\text{Al}$  in rapid solidified Al–Ti–C master alloys 84
- electron-backscattered diffraction and transmission electron microscopy study of post-creep Ti<sub>3</sub>SiC<sub>2</sub> 181
- a general process to synthesize self-assembled shell-like (Ca\_{0.61}, Nd\_{0.26}) TiO\_3 clusters 300

5d-4f transition

- correlation between structure variation and luminescence red shift in YAG:Ce 638
- Triblock copolymer
  - facile synthesis of mesoporous ZnAl<sub>2</sub>O<sub>4</sub> thin films through the evaporationinduced self-assembly method 320

- Volume fraction
  - comparison of levitation force relative to thickness of disk shaped  $YBa_2Cu_3O_{7-x}$  prepared by MPMG and FQMG processes 425

#### XAS

EXAFS study of nanocrystalline  $\text{CeO}_2$  samples prepared by sol-gel and ball-milling routes 1

XPS

- copper-substituted, lithium rich iron phosphate as cathode material for lithium secondary batteries 380
- X-ray diffraction
  - structure and thermal behaviour of Sr-doped ( $NH_4$ )<sub>2</sub>TeBr<sub>6</sub> material L10 the structure of As<sub>2</sub>Se<sub>5</sub>Te<sub>2</sub> infrared optical glass 39
  - microstructure and compressive properties of in situ synthesized Nd<sub>2</sub>O<sub>3</sub>/ Ti-6Si (wt.%) alloy composites 47
  - microstructure and mechanical property of as-cast, -homogenized, and -deformed Al, CoCrFeNi ( $0 \le x \le 2$ ) high-entropy alloys 57
  - the research of Ti-rich zone on the interface between  $TiC_x$  and aluminum melt and the formation of  $Ti_3Al$  in rapid solidified Al–Ti–C master alloys 84
  - reinvestigation of the isothermal section of the Ce–Co–Ge ternary system, at 700  $^\circ\text{C}$  123
  - influence of Mn content on the magnetic properties and microstructure in Fe–Mn–Mo alloys 129
  - room temperature electrosynthesis of ZnSe thin films 157
  - dielectric and piezoelectric studies of perovskite-tungsten bronze structured (1 x)PLZT-xPBBiN nanoceramic composites by high-energy mechanical activation technique 211
  - mechanically activated self-propagating high-temperature synthesis of  $La_{0.9}Sr_{0.1}Ga_{0.8}Mg_{0.2}O_{3-\delta}$  as an electrolyte for SOFC 238
  - the structure and mechanical properties of as-cast Zr-Ti alloys 279
  - formation of composite nanomaterial MnPS<sub>3</sub> layered structure intercalated with pyridine 284
  - fabrication of oxidation-resistant  $\beta$ -FeSi<sub>2</sub> film on Mg<sub>2</sub>Si by RF magnetronsputtering deposition 346
  - electrical, structural and optical properties of SnO<sub>2</sub>:F thin films: Effect of the substrate temperature 350

nanocomposite thermite powders prepared by cryomilling 386

- new high- $\varepsilon$  and high-Q microwave dielectric ceramics:  $(1 x)Ca_{0.61}$ Nd<sub>0.26</sub>TiO<sub>3</sub> - xNd(Zn<sub>0.5</sub>Ti<sub>0.5</sub>)O<sub>3</sub> 409
- structural chemistry and magnetic properties of  $RE_2[Sn_xGe_{1-x}]_5(RE = Nd, Sm)$ and  $RE[Sn_xGe_{1-x}]_2$  (RE = Gd, Tb): Four new rare-earth metal intermetallic compounds with germanium zig-zag chains and tin square-nets 511
- stability of cyclopentadienyl aryloxide complexes of calcium and barium 528
- phase transition of the orthorhombic fluorite-related compounds  $Ln_3IrO_7$  (Ln = Pr, Nd, Sm, Eu) 541
- extended short-range ferromagnetic order with cluster-glass behavior in Dy<sub>2</sub>AuSi<sub>3</sub> 558
- spectroscopic and dielectric properties of crystallized PbO–Sb<sub>2</sub>O<sub>3</sub>–As<sub>2</sub>O<sub>3</sub>:NiO glass system 400

X-ray diffraction and scanning electron microscopy

gas sensing properties of magnesium ferrite prepared by co-precipitation method 270

#### XRD-analysis

effects of mechanical alloying on the hydrogen storage properties of the  $Mg_{76}Ti_{12}Fe_{12-x}Ni_x$  (x = 4, 8) materials 163

#### Y123

comparison of levitation force relative to thickness of disk shaped  $YBa_2Cu_3O_{7-x}$  prepared by MPMG and FQMG processes 425

YAG:Ce phosphor

correlation between structure variation and luminescence red shift in YAG:Ce 638

#### Zirconia

internal friction of polycrystalline Zr<sub>0.8</sub>R<sub>0.2</sub>O<sub>1.9</sub> (R = Nd, Y) 562

study of the influence of copper and magnesium additions on the microstructure formation of Zn–Al hypoeutectic alloys 89

#### ZnSe

room temperature electrosynthesis of ZnSe thin films 157

 $ZnS_xSe_{1-x}$ 

- the luminescence characteristics of  $\text{ZnS}_x\text{Se}_{1-x}$  phosphor powder 250 Zr–Cu–Al–Ag
  - quantification of the free volume in Zr<sub>45.0</sub>Cu<sub>39.3</sub>Al<sub>7.0</sub>Ag<sub>8.7</sub> bulk metallic glasses subjected to plastic deformation by calorimetric and dilatometric measurements 65