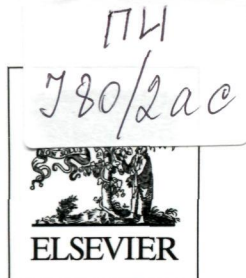


Volume 584

25 January 2014  
ISSN 0925-8388



# Journal of ALLOYS AND COMPOUNDS

**An Interdisciplinary Journal  
of Materials Science and  
Solid-State Chemistry and Physics**

**EDITOR-IN-CHIEF**

L. SCHULTZ

**EDITORS**

K.H.J. BUSCHOW

J. CHAN

D.G. ESKIN

H. FAN

J.-M. GRENECHE

V.G. HARRIS

H. KLEINKE

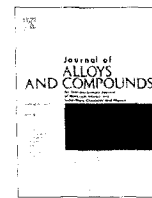
C. KOCH

H.G. PAN

V. PECHARSKY

H. SAKAGUCHI

H. ZUR LOYE



## Contents

**Abstracting Services** Abstracted/indexed in: Cambridge Scientific Abstracts, Ceramics Abstracts, Chemical Abstracts, Current Contents, Engineering Index, FIZ Karlsruhe, Metals Abstracts, PASCAL/CNRS, Physics Abstracts, Physikalische Berichte, Research Alert, Science Citation Index. Also covered in the abstract and citation database SCOPUS.® Full text available on ScienceDirect.®

Preparation of Yb-substituted $\alpha$ -Ni(OH) <sub>2</sub> and its physicochemical properties Q. Xu, Y. Zhu, Q. Han, R. Zhao, Y. Zhuang, Y. Liu, S. Zhang and C. Miao (Guangzhou, PR China) .....	1
Third harmonic generation process in Al doped ZnO thin films M. Abd-Lefdil, A. Douayar, A. Belayachi (Morocco), A.H. Reshak (Nove Hradý, Czech Republic), (Kangar, Malaysia), A.O. Fedorchuk (Lviv, Ukraine), S. Pramodini, P. Poornesh (Manipal, India), K.K. Nagaraja and H.S. Nagaraja (Surathkal, DK, India) .....	7
Thermoelectric properties of quaternary (Bi,Sb) <sub>2</sub> (Te,Se) <sub>3</sub> compound P. Lu, Y. Li, C. Wu, Z. Yu, H. Cao, X. Zhang, N. Cai, X. Zhong (Beijing, China) and S. Wang (Shanghai, China), (Gothenburg, Sweden) .....	13
Residual stress evolution of thermally grown oxide in thermal barrier coatings deposited onto nickel-base superalloy and iron-base alloy with thermal exposure ageing Y.J. Han, F.X. Ye, G.X. Lu, C. Liu and L.J. Hao (Tianjin, China) .....	19
Lead-free Ba <sub>0.9</sub> Ca <sub>0.1</sub> Ti <sub>0.9</sub> Zr <sub>0.1</sub> O <sub>3</sub> piezoelectric ceramics processed below 1300 °C A. Reyes-Montero (A.P. Coyoacán, Mexico), L. Pardo (Cantoblanco, Spain), R. López-Juárez (A.P. Coyoacán, Mexico), A.M. González (Madrid, Spain), M.P. Cruz (C.P. Ensenada, Mexico) and M.E. Villafuerte-Castrejón (A.P. Coyoacán, Mexico) .....	28
A core-shell phenomenon maintain the magnetocaloric properties of the ternary silicide Gd <sub>6</sub> Co <sub>1.67</sub> Si <sub>3</sub> during water flux ageing M. Chennabasappa, B. Chevalier, M. Lahaye, C. Labrugere and O. Toulemonde (Pessac, France) .....	34
Facile synthesis of cookies-shaped LiV <sub>3</sub> O <sub>8</sub> cathode materials with good cycling performance for lithium-ion batteries S. Huang, X.L. Wang, Y. Lu, X.M. Jian, X.Y. Zhao, H. Tang, J.B. Cai, C.D. Gu and J.P. Tu (Hangzhou, China) .....	41
Hydrogenation and microstructural properties of hydriding combustion synthesized Mg-Ni-C composite ball-milled with NbF <sub>5</sub> catalyst M.G. Chourashiya, Y.-H. Kim, C.-N. Park and C.-J. Park (Gwangju, Republic of Korea) .....	47
Effects of super-high pressure on microstructures, nano-mechanical behaviors and corrosion properties of Mg-Al alloys S. Zhao, Q. Peng, H. Li (Qinhuangdao, PR China) and B. Liu (Jiaozuo, PR China) .....	56
Comparisons of microstructure, thixoformability and mechanical properties of high performance wrought magnesium alloys reheated from the as-cast and extruded states Q. Chen (Chongqing, Harbin, PR China), B. Yuan (Hefei, PR China), J. Lin, X. Xia, Z. Zhao and D. Shu (Chongqing, PR China) .....	63
Tin-indium/graphene with enhanced initial coulombic efficiency and rate performance for lithium ion batteries H. Yang and L. Li (Zhenjiang, China) .....	76
Highly improved electrochemical hydrogen storage performances of the Nd-Cu-added Mg <sub>2</sub> Ni-type alloys by melt spinning Y. Zhang, C. Li (Baotou, Beijing, China), Y. Cai, F. Hu, Z. Liu (Baotou, China) and S. Guo (Beijing, China) .....	81
Mechanical properties and densification of short carbon fiber-reinforced TiB <sub>2</sub> /C composites produced by hot pressing J. Fei, W. Wang, A. Ren, Y. Ji, J. Zhou and M. Zhu (Wuhan, China) .....	87
Molten salts activated by high-energy milling: A useful, low-temperature route for the synthesis of multiferroic compounds A. Hernández-Ramírez, A. Martínez-Luévanos (Mexico), A.F. Fuentes (Mexico, Ann Arbor, United States), A.-G.D. Nelson, R.C. Ewing (Ann Arbor, United States) and S.M. Montemayor (Mexico, Ann Arbor, United States) .....	93
Micro-structural investigations of spray hydrolyzed TiO <sub>2</sub> H. Lakhotiya (Mumbai, Jaipur, India), R. Singh, J. Bahadur, D. Sen, A. Das, S. Mazumder, B. Paul, P.U. Sastry (Mumbai, India) and H. Lemmel (Vienna, Austria), (Grenoble, France) .....	101
Study of reaction mechanisms and synthetic manipulations of bismuth tellurium selenide nanomaterials for enhanced thermoelectric performance C. Kim, D.H. Kim, Y.K. Lee, J.T. Kim (Daegu, Republic of Korea), Y.S. Han (Gyeongsan, Republic of Korea) and H. Kim (Daegu, Republic of Korea) .....	108
Microstructure and dielectric properties of BST ceramics derived from high-energy ball-milling C. Liu and P. Liu (Xi'an, PR China) .....	114

Effects of size reduction on the structure and magnetic properties of core-shell Ni <sub>3</sub> Si/silica nanoparticles prepared by electrochemical synthesis	
G. Pigozzi (Dübendorf, Switzerland), D. Mukherji (Braunschweig, Germany), Y. Elerman (Besevler, Turkey), P. Strunz (Řež, Czech Republic), R. Gilles, M. Hoelzel (Garching, Germany), B. Barbier (Bonn, Germany) and P. Schmutz (Dübendorf, Switzerland)	119
Intermittent spray pyrolytic growth of nanocrystalline and highly oriented transparent conducting ZnO thin films: Effect of solution spray rate	
C.M. Mahajan and M.G. Takwale (Pune, India)	128
Effect of processing and service conditions on the luminescence intensity of plasma sprayed (Tm <sup>3+</sup> + Dy <sup>3+</sup> ) co-doped YSZ coatings	
W. Wang, J. Wei, H. Hong, F. Xuan (Shanghai, PR China) and Y. Shan (Utsunomiya, Japan)	136
p-Type dye-sensitized solar cell based on nickel oxide photocathode with or without Li doping	
H.-T. Wang, D.K. Mishra, P. Chen and J.-M. Ting (Tainan, Taiwan)	142
Effect of magnetic field on the structure and magnetic properties of pulse-laser-deposited FePt films	
H.W. Chang (Taichung, Taiwan, ROC), F.T. Yuan (Taipei, Taiwan, ROC), C.W. Yuan, C.H. Yu, C.R. Wang (Taichung, Taiwan, ROC) and W.C. Chang (Chia-Yi, Taiwan, ROC)	148
AC conductivity and dielectric behavior in lithium and sodium diphosphate LiNa <sub>3</sub> P <sub>2</sub> O <sub>7</sub>	
A. Zaafouri, M. Megdiche and M. Gargouri (Sfax, Tunisia)	152
Metal propionate synthesis of TiO <sub>2</sub> nanomaterials	
R.-C. Suciu, I. Marian and I. Bratu (Cluj-Napoca, Romania)	159
Luminescence properties of red-emitting Ca <sub>9</sub> Y(PO <sub>4</sub> ) <sub>7</sub> : Eu <sup>3+</sup> phosphor for NUV white-LEDs	
B. Wang, Y. Lin and H. Ju (Kunming, China)	167
Magnetic properties of (Co <sub>92</sub> Zr <sub>8</sub> /SiO <sub>2</sub> ) <sub>15</sub> multilayer thin films for GHz applications	
X. Wang, G. Chai and D. Xue (Lanzhou, People's Republic of China)	171
Hydrostatic pressure effects on martensitic transition, magnetic and magnetocaloric effect in Si doped Ni-Mn-Sn Heusler alloys	
S. Esakki Muthu, M. Kanagaraj (Tiruchirappalli, India), S. Singh (Kolkata, India), P.U. Sastry, G. Ravikumar (Mumbai, India), N.V. Rama Rao, M. Manivel Raja (Hyderabad, India) and S. Arumugam (Tiruchirappalli, India)	175
Photocatalytic activities of heterostructured TiO <sub>2</sub> -graphene porous microspheres prepared by ultrasonic spray pyrolysis	
J. Yang, X. Zhang, B. Li, H. Liu, P. Sun, C. Wang, L. Wang and Y. Liu (Changchun, China)	180
Improved perpendicular magnetic anisotropy of Pr-Fe-B films with Ta underlayer	
C.-F. Huang, A.-C. Sun (Chung-Li, Taiwan), H.W. Chang (Taichung, Taiwan), F.-T. Yuan (New Taipei City, Taiwan), S.T. Chang (Taichung, Taiwan) and W.C. Chang (Chia-Yi, Taiwan)	185
Influence of Ag doping on structural, optical, and photoluminescence properties of nanostructured AZO films by sol-gel technique	
F. Khan, S.-H. Baek and J.H. Kim (Daegu, Republic of Korea)	190
Nanocrystalline SrMnO <sub>3</sub> powder as catalyst for hydrocarbon combustion	
C. Doroftei, P.D. Popa, E. Rezlescu and N. Rezlescu (Iasi, Romania)	195
Structure and properties of cerium oxides in bulk and nanoparticulate forms	
S. Gangopadhyay (Orlando, USA), D.D. Frolov (Orlando, USA), (Moscow, Russia), A.E. Masunov and S. Seal (Orlando, USA, USA)	199
Conduction mechanism study by overlapping large-polaron tunnelling model in SrNiP <sub>2</sub> O <sub>7</sub> ceramic compound	
M. Megdiche (Sfax, Tunisia), C. Perrin-pellegrino (Marseille cedex, France) and M. Gargouri (Sfax, Tunisia)	209
Preparation and thermoelectric properties of p-type filled skutterudites Ce <sub>y</sub> Fe <sub>4-x</sub> Ni <sub>x</sub> Sb <sub>12</sub>	
G. Tan, Y. Zheng, Y. Yan and X. Tang (Wuhan, China)	216
Synthesis and characterization of Co nanoparticles encapsulated in organics	
M. Zhou, J. Gong, P.-z. Si, X.-q. Wang and H.-l. Ge (Hangzhou, China)	222
The improved superelasticity of NiTi alloy via electropulsing treatment for minutes	
R.F. Zhu, J.N. Liu, G.Y. Tang (Shenzhen, Beijing, PR China), S.Q. Shi, M.W. Fu (Hung Hom, Kowloon, China) and Z.T.H. TSE (Athens, USA)	225
Structural, magnetic and dielectric properties of Pr-modified BiFeO <sub>3</sub> multiferroic	
D. Varshney, P. Sharma, S. Satapathy and P.K. Gupta (Indore, India)	232
Room temperature ferromagnetism and cooling effect in dilute Co-doped ZnS nanoparticles with zinc blende structure	
W. Fang, Y. Liu, B. Guo, L. Peng, Y. Zhong, J. Zhang and Z. Zhao (Shanghai, China)	240
Enhanced thermoelectric performance with participation of F-electrons in β-Zn <sub>4</sub> Sb <sub>3</sub>	
M. Liu, X. Qin, C. Liu, X. Li and X. Yang (Hefei, People's Republic of China)	244
Double-layer microwave absorber based on CoFe <sub>2</sub> O <sub>4</sub> ferrite and carbonyl iron composites	
Y. Liu, X. Liu and X. Wang (Xi'an, China)	249
Fabrication of FeSiB magnetic coatings with improved saturation magnetization by plasma spray and dry-ice blasting	
S. Dong, B. Song (Belfort Cedex, France), X. Zhang, C. Deng (China), N. Fenineche (Belfort Cedex, France), B. Hansz (Fesches-le-Châtel, France), H. Liao and C. Coddet (Belfort Cedex, France)	254
Spectra and energy levels of Yb <sup>3+</sup> ions in CaF <sub>2</sub> transparent ceramics	
T. Kallel, M.A. Hassairi, M. Dammak (Sfax, Tunisia), A. Lyberis, P. Gredin and M. Mortier (Paris, France)	261
Coexistence of the bipolar and unipolar resistive switching behaviors in vanadium doped ZnO films	
D. Xu, Y. Xiong, M. Tang and B. Zeng (Xiangtan, China)	269
Enhanced glass forming ability and plasticity of Mg-based bulk metallic glass by minor addition of Cd	
Y.D. Sun, Q.R. Chen and G.Z. Li (Shanghai, China)	273

DFT calculations of electronic and transport properties of substituted $Mn_4Si_7$ A. Allam, P. Boulet and M.-C. Record (Marseille cedex, France) . . . . .	279
Band structures of ZnTe:O alloys with isolated oxygen and with clustered oxygen impurities C. Ling, L.Q. Zhou, D. Banerjee and H. Jia (Ann Arbor, USA) . . . . .	289
Impedance spectroscopy study of $Na_2Nb_4O_{11}$ ceramic matrix by the addition of $Bi_2O_3$ R.G.M. Oliveira, M.C. Romeu (CEP Fortaleza, Brazil), M.M. Costa (CEP Fortaleza, Cuiabá, Brazil), P.M.O. Silva, J.M.S. Filho (CEP Fortaleza, Brazil), C.C.M. Junqueira (CEP São José dos Campos, Brazil) and A.S.B. Sombra (CEP Fortaleza, Brazil) . . . . .	295
Hot corrosion of nanostructured CoNiCrAlYSi coatings deposited by high velocity oxy fuel process A.H. Yaghtin, S. Javadpour and M.H. Shariat (Shiraz, Iran) . . . . .	303
Synthesis and characterization of Ge–Cr-based intermetallic compounds: $GeCr_3$ , $GeCr_3$ , and $GeNCr_3$ S. Lin, P. Tong, B.S. Wang, Y.N. Huang, W.H. Song and Y.P. Sun (Hefei, People's Republic of China) . . . . .	308
Structure analysis and microwave dielectric properties of $Ca_xZn_{1-x}Sn_{0.08}Ti_{1.92}Nb_2O_{10}$ ceramics L. Li, H. Cai, X. Yu, Q. Liao and Z. Gao (Tianjin, China) . . . . .	315
Structural mechanisms of anelasticity in Fe–Ga-based alloys I.S. Golovin (Moscow, Russia) and J. Cifre (Palma de Mallorca, Spain) . . . . .	322
Investigation and impact of oxygen plasma compositions on cubic ZnMgO grown by Molecular Beam Epitaxy R. Casey Boutwell, M. Wei, M. Baudelet and W.V. Schoenfeld (Orlando, United States) . . . . .	327
Preparation of zinc oxide coatings by using newly designed metal–organic complexes of Zn: Effect of molecular structure of the precursor and surfactant over the crystallization, growth and luminescence S. Brahma (Bangalore, India), (Tainan, Taiwan) and S.A. Shivashankar (Bangalore, India) . . . . .	331
Effect of Mn doping on the structural, magnetic and transport properties of SiC films S. Wang, Y. An, X. Li (Tianjin, China), Z. Wu (Beijing, China) and J. Liu (Tianjin, China) . . . . .	339
Formation of nucleation centers for vortices in Bi-2223 superconducting core by dispersed Sn nanoparticles G. Yildirim, M. Dogruer, F. Karaboga and C. Terzioğlu (Bolu, Turkey) . . . . .	344
Magnetic random anisotropy model approach on nanocrystalline $Fe_{88}Sm_9Mo_3$ and $Fe_{88}Sm_9Mo_3C$ alloys Z. Yamkane, H. Lassri, A. Menai (Casablanca, Morocco), S. Khazzan, N. Mliki (Tunis, Tunisia) and L. Bessais (Thiais, France) . . . . .	352
Synthesis and characterization of NiO/TiO <sub>2</sub> porous films and their photocurrent-enhanced mechanism in gas phase X. Yu (Wuhan, Hubei, PR China), C. Xie, Z. Zou, L. Yang, T. Zou and G. Zhang (Wuhan, PR China) . . . . .	356
Impacts of Ni–Co substitution on the structural, magnetic and dielectric properties of magnesium nano-ferrites fabricated by micro-emulsion method R. Ali, A. Mahmood, M.A. Khan (Bahawalpur, Pakistan), A.H. Chughtai (Multan, Pakistan), M. Shahid (Suwon, South Korea), I. Shakir (Riyadh, Saudi Arabia) and M.F. Warsi (Bahawalpur, Pakistan) . . . . .	363
Investigations on structure, ferroelectric, piezoelectric and energy storage properties of barium calcium titanate (BCT) ceramics V.S. Puli (New Orleans, USA), D.K. Pradhan (San Juan, USA), B.C. Riggs, D.B. Chrisey (New Orleans, USA) and R.S. Katiyar (San Juan, USA) . . . . .	369
Strongly anisotropic behavior of $A_1(TO)$ phonon mode in bulk AlN W. Zheng, R.S. Zheng, H.L. Wu (Shenzhen, China) and F.D. Li (Hefei, China) . . . . .	374
Investigation of glass forming ability, thermal stability and soft magnetic properties of melt-spun $Fe_{83}P_{16-x}Si_xCu_1$ ( $x=0, 1, 2, 3, 4, 5$ ) alloy ribbons F.G. Chen and Y.G. Wang (Nanjing, People's Republic of China) . . . . .	377
Study of lattice thermal conductivity of PbS L. Wei, J.-f. Chen, Q.-y. He and W. Teng (Guangzhou, China) . . . . .	381
The mixed intermetallic silicide $Nb_{5-x}Ta_xSi_3$ ( $0 \leq x \leq 5$ ). Crystal and electronic structure M. Tillard (Montpellier Cedex, France) . . . . .	385
Magnetic properties, electronic structures and pressure effects of $Ho_xY_{1-x}Co_2$ compounds E. Burzo, P. Vlaic (Cluj-Napoca, Romania), D.P. Kozlenko, S.E. Kichanov (Dubna, Russia), N.T. Dang (Dubna, Tula, Russia), A.V. Rutkauskas and B.N. Savenko (Dubna, Russia) . . . . .	393
A two step molten method for low temperature synthesis of $La_{0.9}Bi_{0.1}AlO_3$ relaxor nanocrystalline S. Wang, Y.-d. Hou, H.-y. Ge, M.-p. Zheng, M.-k. Zhu, M. Zhang and H. Yan (Beijing, China) . . . . .	402
Microstructural evolution and constitutive relationship of Al–Zn–Mg alloy containing small amount of Sc and Zr during hot deformation based on Arrhenius-type and artificial neural network models B. Li, Q. Pan and Z. Yin (Changsha, China) . . . . .	406
Particle size, morphology and color tunable ZnO:Eu <sup>3+</sup> nanophosphors via plant latex mediated green combustion synthesis M. Chandrasekhar (Tumkur, Bangalore, India), H. Nagabhushana (Tumkur, India), S.C. Sharma (Bangalore, India), K.H. Sudheer kumar (Bangalore, Shimoga, India), N. Dhananjaya (Bangalore, India), D.V. Sunitha (Tumkur, India), C. Shivakumara and B.M. Nagabhushana (Bangalore, India) . . . . .	417
Preferential Au precipitation at deformation-induced defects in Fe–Au and Fe–Au–B–N alloys S. Zhang, G. Langelaan (JB Delft, The Netherlands), J.C. Brouwer, W.G. Sloof (CD Delft, The Netherlands), E. Brück (JB Delft, The Netherlands), S. van der Zwaag (HS Delft, The Netherlands) and N.H. van Dijk (JB Delft, The Netherlands) . . . . .	425
Study on fatigue property and microstructure characteristics of welded nuclear power rotor with heavy section P. Liu, F. Lu, X. Liu, H. Ji and Y. Gao (Shanghai, PR China) . . . . .	430

Constitution of the liquidus and solidus surfaces of the Al–Ti–Cr system M.J. Kriegel (Freiberg, Germany), D. Pavlyuchkov (Freiberg, Germany), (Kiev, Ukraine), D. Chmelik, O. Fabrichnaya (Freiberg, Germany), K. Korniyenko (Kiev, Ukraine), D. Heger, D. Rafaja (Freiberg, Germany) and H.J. Seifert (Karlsruhe, Germany) . . . . .	438
On the 500 °C isothermal section of the ternary Eu–Ag–Ga system up to 33.3 at.% Eu Yu. Verbovytskyy (Bobadela LRS, Portugal), M.F.C. Pereira (Lisboa, Portugal) and A.P. Gonçalves (Bobadela LRS, Portugal) . . . . .	447
Electrochemical performance of the graphene/Y <sub>2</sub> O <sub>3</sub> /LiMn <sub>2</sub> O <sub>4</sub> hybrid as cathode for lithium-ion battery B. Ju, X. Wang, C. Wu, X. Yang, H. Shu, Y. Bai, W. Wen and X. Yi (Hunan Xiangtan, China) . . . . .	454
Microstructures and dielectric properties of Ba <sub>0.4</sub> Sr <sub>0.6</sub> TiO <sub>3</sub> ceramics with BaO–TiO <sub>2</sub> –SiO <sub>2</sub> glass–ceramics addition T. Wu, Y. Pu, T. Zong and P. Gao (Xi'an, People's Republic of China) . . . . .	461
Realization of Na-doped p-type non-polar $\alpha$ -plane Zn <sub>1-x</sub> Cd <sub>x</sub> O films by pulsed laser deposition Y. Li, X.H. Pan, J. Jiang, H.P. He, J.Y. Huang, C.L. Ye and Z.Z. Ye (Hangzhou, People's Republic of China) . . . . .	466
Improved luminescent properties of novel nanostructured Eu <sup>3+</sup> doped yttrium borate synthesized with carbon nanotube templates D. Zou, Y.Q. Ma, S.B. Qian, B.T. Huang, G.H. Zheng and Z.X. Dai (Hefei, People's Republic of China) . . . . .	471
Glassy state formation and magnetic properties of Co-rich ternary RE–Co–B (RE=Y, Tb, Ho) amorphous alloys Z. Śniadecki (Poznań, Poland), J. Marcin, I. Škorvánek (Košice, Slovakia), N. Pierunek and B. Idzikowski (Poznań, Poland) . . . . .	477
Janus-faced Cu-core periphery formation and Bi phase redistribution under current stressing in Cu-cored Sn58Bi solder joints W. Mu, W. Zhou, B. Li and P. Wu (Tianjin, China) . . . . .	483
Fe doped hydroxyapatite thick films modified via swift heavy ion irradiation for CO and CO <sub>2</sub> gas sensing application R.U. Mene (Otur, Nanded, India), M.P. Mahabole (Nanded, India), K.C. Mohite (Pune, India) and R.S. Khairnar (Nanded, India) . . . . .	487
Hot deformation behavior and hot working characteristic of Nickel-base electron beam weldments Y. Ning, Z. Yao, H. Guo (Xi'an, PR China) and M.W. Fu (Kowloon, PR China) . . . . .	494
A thermodynamic description of the KBr–EuBr <sub>2</sub> system W. Gong (Huizhou, PR China) and M. Gaune-Escard (Marseille Cedex, France) . . . . .	503
Thermal stability of Al–Mg alloys after solidification under high pressures J.C. Jie (Dalian, Harbin, China), C.M. Zou, H.W. Wang, Z.J. Wei (Harbin, China) and T.J. Li (Dalian, China) . . . . .	507
Development and characterization of a new bio-nanocomposite (bio-NCP) for diagnosis and treatment of breast cancer M.L. Martins (Copenhagen, Denmark), (Botucatu, Brazil), M.J. Saeki (Botucatu, Brazil), M.T.F. Telling (UK, Oxford, UK), J.P.R.L.L. Parra (Botucatu, Brazil), S. Landsgesell (Berlin, Germany), R.I. Smith (UK) and H.N. Bordallo (Copenhagen, Denmark) . . . . .	514
Effect of Ln (Ln=La, Pr) and Co co-doped on the magnetic and ferroelectric properties of BiFeO <sub>3</sub> nanoparticles W. Mao, X. Wang, Y. Han, X. Li, Y. Li, Y. Wang, Y. Ma, X. Feng, T. Yang, J. Yang and W. Huang (Nanjing, PR China) . . . . .	520
Spectral-converting behaviors of Er <sup>3+</sup> and Er <sup>3+</sup> –Yb <sup>3+</sup> doped YOCl phosphors S. Park (Busan, Republic of Korea) and S.-H. Cho (Seoul, Republic of Korea) . . . . .	524
Phase stability and tensile properties of Co-free Al <sub>0.5</sub> CrCuFeNi <sub>2</sub> high-entropy alloys C. Ng, S. Guo (Kowloon, PR China), J. Luan (Kowloon, Beijing, PR China), Q. Wang, J. Lu, S. Shi and C.T. Liu (Kowloon, PR China) . . . . .	530
Effect of Na-substitution on the electrode properties of LiMn <sub>2</sub> O <sub>4</sub> F. Sun and Y. Xu (Suzhou, China) . . . . .	538
Optical and photosensitive properties of lamellar nanocomposites obtained by Cd intercalation of GaTe L. Leontie (Iasi, Romania), I. Evtodiev, N. Spalatu, M. Caraman, S. Evtodiev, O. Racovet (Kishinev, Republic of Moldova), M. Girtan (Angers, France) and C. Focsa (Villeneuve d'Ascq cedex, France) . . . . .	542
Chemical and structural analysis of solvothermal synthesized tungsten oxide nanotube without template and its hydrogen sensitive property T. Yang, Y. Zhang and C. Li (Beijing, China) . . . . .	546
Investigation of thermoelectric power with modification of two band model with linear <i>T</i> term for superconductors and thermal conductivity study of Se added YBCO samples S. Altin, M.A. Aksan and M.E. Yakinci (Malatya, Turkey) . . . . .	553
The high temperature oxidation behavior of Mg–Nd alloys. Part II: The effect of the two-phase microstructure on the on-set of oxidation and on oxide morphology D.S. Aydin (Montreal, Canada), Z. Bayindir (Halifax, Canada) and M.O. Pegguleryuz (Montreal, Canada) . . . . .	558
Effect of structural transition on magnetic and optical properties of Ca and Ti co-substituted BiFeO <sub>3</sub> ceramics P. Kumar and M. Kar (Patna, India) . . . . .	566
The effect of cobalt substitution in crystal structure and vibrational modes of CuFe <sub>2</sub> O <sub>4</sub> powders obtained by polymeric precursor method M.D.P. Silva, F.C. Silva, F.S.M. Sinfrônio (São Luís, Brazil), A.R. Paschoal (Fortaleza, Brazil), E.N. Silva (São Luís, Brazil) and C.W.A. Paschoal (São Luís, Brazil), (Berkeley, United States) . . . . .	573
Development of continuous cooling precipitation diagrams for aluminium alloys AA7150 and AA7020 Y. Zhang (Clayton, Australia), B. Milkereit, O. Kessler, C. Schick (Rostock, Germany) and P.A. Rometsch (Clayton, Australia) . . . . .	581
Melt processed single phase hollandite waste forms for nuclear waste immobilization: Ba <sub>1.0</sub> Cs <sub>0.3</sub> A <sub>2.3</sub> Ti <sub>5.7</sub> O <sub>16</sub> ; A=Cr, Fe, Al J. Amoroso, J. Marra (Aiken, USA), S.D. Conradson, M. Tang (Los Alamos, USA) and K. Brinkman (Aiken, USA) . . . . .	590
Solidification processes in Cu–Zr–Ag amorphisable alloy system D. Janovszky, A. Sycheva, K. Tomolya, J. Geiger, J. Solyom and A. Roosz (Miskolc-Egyetemvaros, Hungary) . . . . .	600
Structural relaxation in Fe(Co)SiAlGaPCB amorphous alloys J.M. Borrego, J.S. Blázquez (Sevilla, Spain), S. Lozano-Pérez, J.S. Kim (Oxford, UK), C.F. Conde and A. Conde (Sevilla, Spain) . . . . .	607

Fabrication of nanowires of Al-doped ZnO using nanoparticle assisted pulsed laser deposition (NAPLD) for device applications S. Thanka Rajan, B. Subramanian, A.K. Nanda Kumar, M. Jayachandran (Karaikudi, India) and M.S. Ramachandra Rao (Chennai, India) . . .	611
The influence of disorder on critical behavior near the paramagnetic to ferromagnetic phase transition temperature in $(La_{1-x}Nd_x)_{2/3}(Ca_{1-y}Sr_y)_{1/3}MnO_3$ doped manganite J. Khelifi (Sfax, Tunisia), (Grenoble Cedex, France), A. Tozri, F. Issaoui, E. Dhahri (Sfax, Tunisia) and E.K. Hlil (Grenoble Cedex, France) . . .	617
Crystal structure and Mössbauer spectroscopy of a new iron phosphate $Mg_{2.88}Fe_{4.12}(PO_4)_6$ Y. Saad, M. Hidouri (Monastir, Tunisia), I. Álvarez-Serrano, M.L. Veiga (Madrid, Spain), A. Wattiaux (Pessac-Cedex, France) and M.B. Amara (Monastir, Tunisia) . . . . .	625
Effect of Pd for Rh substitution on thermoelectric power in the semimetallic compound URhGa <sub>5</sub> R. Wawryk, B. Waszkiewicz and Z. Henkie (Wrocław, Poland) . . . . .	631
Carbon cloth surface-decorated with silver nanoparticles for surface-enhanced Raman scattering W. Zhao, Z. Xu, T. Sun, S. Liu, X. Wu, Z. Ma, J. He and C. Chen (Wuhan, China) . . . . .	635
NMR study of ferromagnetic and antiferromagnetic states of $La_{1-x}Nd_xMn_2Si_2$ ( $x = 0.35$ and $0.40$ ) K. Shimizu, M. Matsumoto, M. Yamaguchi (Toyama, Japan), B. Emre, I. Dincer and Y. Elerman (Ankara, Turkey) . . . . .	640
Influence of Cd substitution on structural, electrical and magnetic properties of M-type barium hexaferrites co-precipitated nanomaterials M.F. Din, I. Ahmad, M. Ahmad, M.T. Farid (Multan, Pakistan), M. Asif Iqbal (Multan, Pakistan), G. Murtaza, M.N. Akhtar (Lahore, Pakistan), I. Shakir (Bahawalpur, Pakistan), M.F. Warsi and M.A. Khan (Bahawalpur, Pakistan) . . . . .	646
<i>I-V-T</i> (current-voltage-temperature) characteristics of the Au/Anthraquinone/p-Si/Al junction device Z. Çaldıran, A.R. Deniz (Erzurum, Turkey), F. Mehmet Coşkun (Erzurum, İstanbul, Turkey), Ş. Aydoğan, A. Yeşildağ and D. Ekinci (Erzurum, Turkey) . . . . .	652
Keywords . . . . .	III