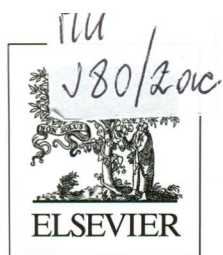


Volume 580

15 December 2013  
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



ELSEVIER

Contents lists available at ScienceDirect

# Journal of Alloys and Compounds

journal homepage: [www.elsevier.com/locate/jalcom](http://www.elsevier.com/locate/jalcom)

## 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.<sup>®</sup> Full text available on ScienceDirect.<sup>®</sup>

Synthesis of high-quality octahedral cBN crystals with large size using lithium metal as a catalyst X. Yang and Q.-L. Ye (Hangzhou, PR China) .....	1
Martensitic phase transformation of TiNi thin films fabricated by co-sputtering deposition S.-W. Kim, Y.M. Jeon, C.H. Park, J.H. Kim, D.-H. Kim and J.-T. Yeom (Changwon, South Korea) .....	5
Effects of Mg doping on the gate bias and thermal stability of solution-processed InGaZnO thin-film transistors B.-Y. Su, S.-Y. Chu, Y.-D. Juang and S.-Y. Liu (Tainan, Taiwan) .....	10
Low-temperature synthesis of alkalis doped TiO <sub>2</sub> photocatalysts and their photocatalytic performance for degradation of methyl orange G. Yang (Xi'an, China), (Oxford, UK), Z. Yan (Qingdao, China), T. Xiao (Oxford, UK) and B. Yang (Xi'an, China) .....	15
Effects of Sr-substitution on the structural and magnetic behavior of Ba-based Y-type hexagonal ferrites M. Ahmad, Q. Ali, I. Ali, I. Ahmad (Multan, Pakistan), M. Azhar Khan, M.N. Akhtar, G. Murtaza (Lahore, Pakistan) and M.U. Rana (Multan, Pakistan) .....	23
Fabrication of Cd <sub>1-x</sub> Zn <sub>x</sub> S/TiO <sub>2</sub> heterostructures with enhanced photocatalytic activity G. Yang, Q. Zhang, W. Chang and W. Yan (Xi'an, China) .....	29
A first-principles study of structure, orbital interactions and atomic oxygen and OH adsorption on Mo-, Sc- and Y-doped nickel bimetallic clusters N.K. Das and T. Shoji (Sendai, Japan) .....	37
Novel ternary compound Ce <sub>2</sub> RuAl: Synthesis, crystal structure, magnetic and electrical properties E. Murashova, Zh. Kurenbaeva, A. Tursina, E. Marushina, A. Yaroslavtsev, D. Leshchev, Y. Seropegin (Moscow, Russia) and D. Kaczorowski (Wroclaw, Poland) .....	55
Synthesis and characterization of Co–La–Zr–B quaternary amorphous nano alloy: Kinetic study for hydrogen generation from hydrolysis of sodium borohydride M.H. Loghmani and A.F. Shojaei (Rasht, Iran) .....	61
Impedance spectroscopy studies of 0.7Bi(Fe <sub>1-x</sub> Ga <sub>x</sub> )O <sub>3</sub> –0.3PbTiO <sub>3</sub> high temperature piezoelectric ceramics J. Chen, D. Jin and J. Cheng (Shanghai, PR China) .....	67
Effects of AlO <sub>x</sub> incorporation into atomic layer deposited Ru thin films: Applications to Cu direct plating technology T.E. Hong (Busan, Republic of Korea), T. Cheon, S.-H. Kim (Gyeongsan-si, Republic of Korea), J.-K. Kim, Y.-B. Park (Gyeongbuk, Republic of Korea), O.J. Kwon (Incheon, Republic of Korea), M.J. Kim and J.J. Kim (Seoul, Republic of Korea) .....	72
Impact of growth parameters on the morphology and microstructure of epitaxial GaAs nanowires grown by molecular beam epitaxy Z.Y. Lu, P.P. Chen (Shanghai, China), Z.M. Liao (St. Lucia, Australia), S.X. Shi, Y. Sun, T.X. Li, Y.H. Zhang (Shanghai, China), J. Zou (St. Lucia, Australia) and W. Lu (Shanghai, China) .....	82
Upconversion fluorescence studies of sol–gel-derived Er-doped KNN ceramics X. Wu, K.W. Kwok and F. Li (Hong Kong, China) .....	88
Microstructure and electrical properties of potassium strontium niobate (KSr <sub>2</sub> Nb <sub>5</sub> O <sub>15</sub> ) ceramics L. Liu, F. Gao, G. Hu, J. Liu and J. Li (Xi'an, PR China) .....	93
Thermal cycling behavior and failure mechanism of La <sub>2</sub> (Zr <sub>0.7</sub> Ce <sub>0.3</sub> ) <sub>2</sub> O <sub>7</sub> /Eu <sup>3+</sup> -doped 8YSZ thermal barrier coating prepared by atmospheric plasma spraying S. Zhao, L. Gu, Y. Zhao, W. Huang (Changchun, Beijing, China), L. Zhu (Changsha, China), X. Fan (Changchun, Beijing, China), B. Zou and X. Cao (Changchun, China) .....	101
Solvothermal synthesis and visible/infrared optical properties of Al/Fe <sub>3</sub> O <sub>4</sub> core–shell magnetic composite pigments L. Yuan, X. Weng, J. Xie, W. Du and L. Deng (Chengdu, China) .....	108
Thermal-gradient induced abnormal Ni <sub>3</sub> Sn <sub>4</sub> interfacial growth at cold side in Sn <sub>2.5</sub> Ag alloys for three-dimensional integrated circuits F.-Y. Ouyang, W.-C. Jhu and T.-C. Chang (Hsinchu, Taiwan, ROC) .....	114

Synthesis of well-aligned ZnO nanorods on silicon substrate at lower temperature Z.N. Urgessa (Port Elizabeth, South Africa), O.S. Oluwafemi (Mthatha, South Africa), E.J. Olivier, J.H. Neethling and J.R. Botha (Port Elizabeth, South Africa) . . . . .	120
Cryomilling effect on the mechanical alloying behaviour of ferritic oxide dispersion strengthened powder with Y <sub>2</sub> O <sub>3</sub> J.H. Kim (Changwon, South Korea), J.H. Lee (Jeonnam, South Korea), J.Y. Min, S.W. Kim, C.H. Park, J.T. Yeom (Changwon, South Korea) and T.S. Byun (Oak Ridge, USA) . . . . .	125
High intense violet luminescence in fluorine doped zinc oxide (FZO) thin films deposited by aerosol assisted CVD M. Anusha (Chennai, India), (Grenoble, France) and D. Arivuoli (Chennai, India) . . . . .	131
Magnetic susceptibility and electron magnetic resonance study of monovalent potassium doped manganites Pr <sub>0.6</sub> Sr <sub>0.4-x</sub> K <sub>x</sub> MnO <sub>3</sub> R. Thaljaoui (Sfax, Tunisia), (Warsaw, Poland), K. Pękała, M. Pękała (Warsaw, Poland), W. Boujelben (Sfax, Tunisia), J. Szydłowska (Warsaw, Poland), J.-F. Fagnard, P. Vanderbemden (Belgium) and A. Cheikhrouhou (Sfax, Tunisia) . . . . .	137
Nanosheet-based α-Fe <sub>2</sub> O <sub>3</sub> hierarchical structure decorated with TiO <sub>2</sub> nanospheres via a simple one-pot route: Magnetically recyclable photocatalysts A. Amarjargal (Jeonbuk, Republic of Korea), (Ulaanbaatar, Mongolia), Z. Jiang (Jeonbuk, Republic of Korea), L.D. Tijing (Jeonbuk, Republic of Korea), (Negros Oriental, Philippines), C.-H. Park, I.-T. Im and C.S. Kim (Jeonbuk, Republic of Korea) . . . . .	143
Role of oxygen vacancies in the resistive switching of SrZrO <sub>3</sub> for resistance random access memory Z. Guo, B. Sa, J. Zhou and Z. Sun (Xiamen, China) . . . . .	148
Filamentary one-dimensional nanocrystal growth of Cu, AgCu, and Au in ultra-dilute electrolytes S.H. Park, H.S. Shin, Y.H. Kim, H.M. Park and J.Y. Song (Daejeon, Republic of Korea) . . . . .	152
Enhanced dielectric and piezoelectric properties of Mn doped (Bi <sub>0.5</sub> Na <sub>0.5</sub> )TiO <sub>3</sub> -(Bi <sub>0.5</sub> K <sub>0.5</sub> )TiO <sub>3</sub> -SrTiO <sub>3</sub> thin films W. Li (Shanghai, Liaocheng, China), H. Zeng, J. Hao and J. Zhai (Shanghai, China) . . . . .	157
Effect of graphene doping on microstructural and mechanical properties of Sn-8Zn-3Bi solder joints together with electromigration analysis X. Hu, Y.C. Chan, K. Zhang and K.C. Yung (Kowloon, Hong Kong) . . . . .	162
Effects of synthetic conditions on the morphology and catalytic properties of hierarchical CuBi <sub>2</sub> O <sub>4</sub> nanoflowers grown by low-temperature solution process Y. Zhang, Y. Xie, J. Li, G. Yang, T. Bai and J. Wang (Urumqi, China) . . . . .	172
Impact force for micro-detonation of striking arc machining of silicon nitrides using the Taguchi method B. Zhang, J. Wang, X. Tian, X. Tang, W. Wang and P. Wang (Beijing, PR China) . . . . .	176
Solid state reaction studies in Fe <sub>3</sub> O <sub>4</sub> -TiO <sub>2</sub> system by diffusion couple method Z. Ren, X. Hu (Beijing, China), X. Xue (Shenyang, China) and K. Chou (Beijing, China) . . . . .	182
Bulk metastable cobalt in fcc crystal structure Q. Meng, S. Guo, X. Zhao (Beijing, China) and S. Veintemillas-Verdaguer (Madrid, Spain) . . . . .	187
Origin of the lathy ferrite in AISI 304 stainless steel during directional solidification J.W. Fu and Y.S. Yang (Shenyang, China) . . . . .	191
Massive spalling and morphological change of intermetallic compound affected by adding Pd in Co-based surface finishes J.H. Hong (Jhongli City, Taiwan), H.Y. Lee (HsinChu City, Taiwan) and A.T. Wu (Jhongli City, Taiwan) . . . . .	195
Electronic structure, magnetism and robust half-metallicity of new quaternary Heusler alloy FeCrMnSb M. Singh, H.S. Saini, J. Thakur (Haryana, India), A.H. Reshak (Nove Hradý, Czech Republic), (Perlis, Malaysia) and M.K. Kashyap (Haryana, India) . . . . .	201
Comparison of photocatalytic activity of ZnO rod arrays with various diameter sizes and orientation X. Li, J. Wang, J. Yang, J. Lang, S. Lü, M. Wei, X. Meng (Siping, PR China), C. Kou (Jilin, PR China) and X. Li (Siping, PR China) . . . . .	205
Synthesis, structure and properties of the new layered manganese oxyselenide Sr <sub>2</sub> F <sub>2</sub> Mn <sub>2</sub> Se <sub>2</sub> O Y. Liu, S.B. Zhang, L.J. Li, W.J. Lu, B.C. Zhao, P. Tong, W.H. Song, S. Lin, Y.N. Huang, Z.H. Huang, S.G. Tan and Y.P. Sun (Hefei, People's Republic of China) . . . . .	211
Reactive sintering of Cu <sub>2</sub> ZnSnSe <sub>4</sub> pellets at 600 °C with double sintering aids of Sb <sub>2</sub> S <sub>3</sub> and Te M. Tsega and D.-H. Kuo (Taipei, Taiwan) . . . . .	217
Study of decomposition and stabilization of splat-cooled cubic γ-phase U-Mo alloys N.-T.H. Kim-Ngan (Krakow, Poland), I. Tkach, S. Mašková (Prague, Czech Republic), A.P. Gonçalves (Sacavém, Portugal) and L. Havela (Prague, Czech Republic) . . . . .	223
A Taguchi optimisation for production of Al-B master alloys using boron oxide Ö. Savaş (Istanbul, Turkey) and R. Kayikci (Sakarya, Turkey) . . . . .	232
Supramolecular photocatalyst of RGO-cyclodextrin-TiO <sub>2</sub> J. Shen, N. Li and M. Ye (Shanghai, China) . . . . .	239
Nano-structured carbon as electrode material in microbial fuel cells: A comprehensive review M. Ghasemi, W.R.W. Daud (Bangi, Malaysia), S.H.A. Hassan (Kangwon-do, South Korea), (New Valley, Egypt), S.-E. Oh (Kangwon-do, South Korea), M. Ismail (Bangi, Malaysia), M. Rahimejad (Babol, Iran) and J.M. Jahim (Bangi, Malaysia) . . . . .	245
Consolidation of mechanically alloyed Cu-Ni-Fe material by spark plasma sintering and evaluation as inert anode for aluminum electrolysis G. Goupil (Québec, Canada), G. Bonnefont, H. Idrissi (Villeurbanne cedex, France), D. Guay and L. Roué (Québec, Canada) . . . . .	256
Deformation behaviour and dynamic recrystallization of AZ61 magnesium alloy Y. Xu (Harbin, Jilin, China), L. Hu and Y. Sun (Harbin, China) . . . . .	262

Influence of MgSO <sub>4</sub> doping on the properties of zinc tris–thiourea sulphate (ZTS) single crystals M. Selvapandiyam, J. Arumugam (Uthangarai, India), P. Sundaramoorthi (Rasipuram, India) and S. Sudhakar (New Delhi, India) . . . . .	270
Magnetic behaviour of nanocrystalline Cu–Fe–Co/Al <sub>2</sub> O <sub>3</sub> composite powders obtained by mechanical alloying C. Artieda-Guzmán and N. Llorca-Isern (Barcelona, Spain) . . . . .	276
Effect of SHI irradiation on structural, surface morphological and optical studies of CVT grown ZnSSe single crystals P. Kannappan (Chennai, India), K. Asokan (New Delhi, India), J.B.M. Krishna (Kolkata, India) and R. Dhanasekaran (Chennai, India) . . . . .	284
Preparation and characterization of mesoporous 45S5 bioactive glass–ceramic coatings on magnesium alloy for corrosion protection K. Huang, S. Cai (Tianjin, People's Republic of China), G. Xu (Shanghai, People's Republic of China), X. Ye, Y. Dou, M. Ren and X. Wang (Tianjin, People's Republic of China) . . . . .	290
Phase transformations in PuGa 1 at.% alloy: Study of whole reversion process following martensitic transformation B. Ravat, B. Oudot, A. Perron, F. Lalire and F. Delaunay (Is sur Tille, France) . . . . .	298
Energy transfer induced photoluminescence improvement in Er <sup>3+</sup> /Ce <sup>3+</sup> /Yb <sup>3+</sup> tri-doped tellurite glass W. Stambouli (Hammam-Lif, Tunisia), H. Elhouichet (Hammam-Lif, ElManar, Tunisia), C. Barthou (Paris Cedex, France) and M. Férid (Hammam-Lif, Tunisia) . . . . .	310
Intense near-infrared emission from undoped ZnTe nanostructures synthesized by thermal evaporation H. Ko, S. Park, S. An and C. Lee (Incheon, Republic of Korea) . . . . .	316
Effects of CTAB on magnetic properties of ZnLa <sub>0.02</sub> Fe <sub>1.98</sub> O <sub>4</sub> crystals B. Zhao and Z. Nan (Yangzhou, People's Republic of China) . . . . .	321
Structure and corrosion resistance properties of Ni–Fe–B–Si–Nb amorphous composite coatings fabricated by laser processing R. Li (Jiangsu, Shanghai, PR China), Z. Li, Y. Zhu (Shanghai, PR China) and K. Qi (Jiangsu, PR China) . . . . .	327
First principles study of structural, electronic and elastic properties of group IB metal nitrides TMN <sub>x</sub> (TM = Cu, Ag and Au; x = 1, 2) R. Rajeswarapalanichamy, G.S. Priyanga, A. Murugan, M. Santhosh, A.J. Cinthia (Madurai, India), S. Kanagaprabha (Tuticorin, India) and K. Iyakutti (Chennai, India) . . . . .	332
Experimental study of the magnetocaloric effect in Dy <sub>1-x</sub> Er <sub>x</sub> Co <sub>2</sub> solid solutions doped with Gd J. Ćwik (Wroclaw, Poland) . . . . .	341
Influence of Cu content on the <i>n</i> → <i>p</i> transition of 15% Sn-doped Cu <sub>x</sub> (In,Ga)Se <sub>2</sub> bulk materials M. Monsefi and D.-H. Kuo (Taipei, Taiwan) . . . . .	348
Programmable metallization cells based on amorphous La <sub>0.79</sub> Sr <sub>0.21</sub> MnO <sub>3</sub> thin films for memory applications D. Liu, N. Wang, G. Wang, Z. Shao, X. Zhu, C. Zhang and H. Cheng (Changsha, China) . . . . .	354
Synthesis of MoO <sub>2</sub> nanosheets by an ionic liquid route and its electrochemical properties H. Zhang, L. Zeng, X. Wu, L. Lian and M. Wei (Fujian, China) . . . . .	358
Effect of bottom electrode on the microstructure and electrical properties of sputtered BaTiO <sub>3</sub> films on MgO substrates W. Zhang, L. Kang, M. Yuan, Q. Yang and J. Ouyang (Shandong, China) . . . . .	363
Preparation of Sn/Mn zirconium phosphate as rare earth free possible white emitting phosphor T. Nishizaki and Y. Shimizu (Fukuoka, Japan) . . . . .	369
A facile template-free route to synthesize porous ZnO nanosheets with high surface area X. Hu, X. Shen (Nanjing, China), R. Huang (Shanghai, China), Y. Masuda, T. Ohji and K. Kato (Nagoya, Japan) . . . . .	373
Impact of sintering temperature on room temperature magneto-resistive and magneto-caloric properties of Pr <sub>2/3</sub> Sr <sub>1/3</sub> MnO <sub>3</sub> R.C. Bhatt (New Delhi, Varanasi, India), S.K. Singh (New Delhi, India), P.C. Srivastava (Varanasi, India), S.K. Agarwal and V.P.S. Awana (New Delhi, India) . . . . .	377
Effect of a new pretreatment on the microstructure and thermal conductivity of Cu/diamond composites H. Bai, N. Ma, J. Lang and C. Zhu (Wuhan, PR China) . . . . .	382
Structure observation of single solidified droplet by in situ controllable quenching based on nanocalorimetry B. Zhao, L. Li (Shanghai, PR China), B. Yang (Rostock, Germany), M. Yan (Brisbane, Australia), Q. Zhai and Y. Gao (Shanghai, PR China) . . . . .	386
Polyvinyl alcohol/carbon coated zinc oxide nanocomposites: Electrical, optical, structural and morphological characteristics H.N. Chandrakala (Tumkur, Mysore, India), B. Ramaraj (Ahmedabad, India), Shivakumaraiah (Tumkur, India), J.H. Lee (Jeonbuk, Republic of Korea) and Siddaramaiah (Mysore, India) . . . . .	392
Theoretical investigation of MnFe <sub>2</sub> O <sub>4</sub> A. Elfalaky and S. Soliman (Zagazig, Egypt) . . . . .	401
Synthesis and characterization of hafnium carbide microcrystal chains with a carbon-rich shell via CVD S. Tian, H. Li, Y. Zhang, S. Liu, Y. Fu, Y. Li and X. Qiang (Xi'an, China) . . . . .	407
Effects of Sc and Zr microalloying additions on the recrystallization texture and mechanism of Al–Zn–Mg alloys Y. Deng, G. Xu, Z. Yin, X. Lei and J. Huang (Changsha, China) . . . . .	412
Effect of powder milling on mechanical properties of hot-pressed and hot-rolled Cu–Cr–Nb alloy A.K. Shukla, S.V.S. Narayana Murty, R. Suresh Kumar (Trivandrum, India) and K. Mondal (Kanpur, India) . . . . .	427
Valence fluctuation in CeMo <sub>2</sub> Si <sub>2</sub> C U.B. Paramanik, Anupam (Kanpur, India), U. Burkhardt (Dresden, Germany), R. Prasad (Kanpur, India), C. Geibel (Dresden, Germany) and Z. Hossain (Kanpur, India) . . . . .	435
Diffusion barrier properties of nitride-based coatings on fuel cladding F. Khatkhatay, J. Jian, L. Jiao, Q. Su (College Station, United States), J. Gan, J.I. Cole (Idaho Falls, United States) and H. Wang (College Station, United States) . . . . .	442

Electromigration behaviors of Ge <sub>2</sub> Sb <sub>2</sub> Te <sub>5</sub> chalcogenide thin films under DC bias Y.-H. Huang, C.-H. Hang, Y.-J. Huang and T.-E. Hsieh (Hsinchu, Taiwan, ROC) .....	449
Large-scale synthesis and application of SnS <sub>2</sub> -graphene nanocomposites as anode materials for lithium-ion batteries with enhanced cyclic performance and reversible capacity N. Du, X. Wu, C. Zhai, H. Zhang and D. Yang (Hangzhou, People's Republic of China) .....	457
High efficient white-light in Sb <sup>3+</sup> /Mn <sup>2+</sup> co-doped P <sub>2</sub> O <sub>5</sub> -Li <sub>2</sub> O-Al <sub>2</sub> O <sub>3</sub> glass C. Ming, F. Song, X. Ren and L. An (Tianjin, China) .....	465
Rare-earth-free luminescent non-stoichiometric phases formed in SrO-HfO <sub>2</sub> ternary compositions P. Boháček, B. Trunda, A. Beitlerová, J. Drahoukoupil, V. Jarý, V. Studnička and M. Nikl (Prague, Czech Republic) .....	468
Novel Bi <sub>2</sub> O <sub>3</sub> /NaBi(MoO <sub>4</sub> ) <sub>2</sub> heterojunction with enhanced photocatalytic activity under visible light irradiation J. Liu, R. Wei, J. Hu, L. Li and J. Li (Wuhan, People's Republic of China) .....	475
Energy spectrum of near-edge holes and conduction mechanisms in Cu <sub>2</sub> ZnSiSe <sub>4</sub> single crystals K.G. Lisunov (Chişinău, Republic of Moldova), (Lappeenranta, Finland), M. Guc (Chişinău, Republic of Moldova), S. Levchenko (Chişinău, Republic of Moldova), (Berlin, Germany), D. Dumcenco, Y.S. Huang (Taipei, Taiwan), G. Gurieva, S. Schorr (Berlin, Germany) and E. Arushanov (Chişinău, Republic of Moldova) .....	481
Crystal structure and properties of barium thorate BaThO <sub>3</sub> from first principles A.I. Lebedev (Moscow, Russia) .....	487
Synthesis and electrochemical properties of Li-excess Li <sub>1+x</sub> [Ni <sub>0.5</sub> Co <sub>0.2</sub> Mn <sub>0.3</sub> ]O <sub>2</sub> cathode materials using ammonia-free chelating agent J.-Z. Kong, X.-Y. Yang, H.-F. Zhai, C. Ren, H. Li (Nanjing, PR China), J.-X. Li, Z. Tang (Taixing, PR China) and F. Zhou (Nanjing, PR China) ..	491
Continuously cast Cu-Al-Ni shape memory alloy – Properties in as-cast condition G. Lojen (Maribor, Slovenia), M. Gojić (Sisak, Croatia) and I. Anžel (Maribor, Slovenia) .....	497
Site occupancy and magnetic moment of Fe in Ni <sub>2</sub> Mn <sub>0.3</sub> Fe <sub>0.7</sub> Ga alloy by neutron powder diffraction study R.Y. Umetsu (Sendai, Tokyo, Japan), D. Kikuchi (Tagajo, Japan), K. Koyama (Kagoshima, Japan), K. Watanabe, Y. Yamaguchi, R. Kainuma (Sendai, Japan) and T. Kanomata (Sendai, Tagajo, Japan) .....	506
Competing energy scales in the compounds Ce(Ni <sub>1-x</sub> Cu <sub>x</sub> ) <sub>2</sub> (Si <sub>2</sub> ) T. Toliński, K. Synoradzki (Poznań, Poland), M. Koterlyn (Bydgoszcz, Poland), (L'viv, Ukraine), G. Koterlyn and R. Yasnitskii (L'viv, Ukraine) 512	512
Microstructure, surface morphology and optical properties of N-incorporated Ga <sub>2</sub> O <sub>3</sub> thin films on sapphire substrates R. Sun, G.-G. Wang, H.-Y. Zhang (Shenzhen, PR China), J.-C. Han (Shenzhen, Harbin, PR China), X.-Z. Wang, L. Cui, X.-P. Kuang, C. Zhu and L. Jin (Shenzhen, PR China) .....	517
Atomistic simulation for ordered Ho <sub>3</sub> Fe <sub>29-x</sub> Cr <sub>x</sub> and disordered Ho <sub>2</sub> Fe <sub>17</sub> intermetallic compounds J. Sun, P. Qian, J. Shen, J.-C. Li and S. Huang (Beijing, China) .....	522
On thermal and electrical properties of multiwalled carbon nanotubes/copper matrix nanocomposites P.G. Koppad (Bangalore, Hyderabad, India), H.R.A. Ram, C.S. Ramesh, K.T. Kashyap (Bangalore, India) and R.G. Koppad (Hubli, India) . . .	527
Luminescent and magnetic properties of Fe@C@YBO <sub>3</sub> :Eu <sup>3+</sup> nanocomposites Q. Li, L. Tong, X. Chen, J. Shi, X. Ren and H. Yang (Changchun, PR China) .....	533
Investigation of UV photoresponse property of Al, N co-doped ZnO film B. Saravanakumar, R. Mohan, K. Thiyagarajan and S.-J. Kim (Jeju, Republic of Korea) .....	538
Synthesis, structure, elastic properties, lattice dynamics and thermodynamics of YVO <sub>4</sub> polymorphs from experiments and density functional theory calculation Z. Huang, L. Zhang and W. Pan (Beijing, China) .....	544
On the oxidation of Ti <sub>2</sub> GeC in air B. Anasori, E.N. Caspi, Y. Elraheb and M.W. Barsoum (Philadelphia, United States) .....	550
Critical behavior in Fe-doped manganites La <sub>0.8</sub> Ba <sub>0.2</sub> Mn <sub>1-x</sub> Fe <sub>x</sub> O <sub>3</sub> (x = 0.15 and x = 0.2) S. Ghodhbane, A. Dhahri, N. Dhahri (Monastir, Tunisia), E.K. Hlil (Grenoble, France), J. Dhahri (Monastir, Tunisia), M. Alhabrabi and M. Zaidi (Saudi Arabia) .....	558
Violet blue long-lasting phosphorescence properties of Mg-doped BaZrO <sub>3</sub> and its ability to assist photocatalysis X. Ma, J. Zhang, H. Li, B. Duan, L. Guo, M. Que and Y. Wang (Lanzhou, PR China) .....	564
Microwave, sonochemical and combustion synthesized CuO nanostructures and their electrical and bactericidal properties C. Karunakaran, G. Manikandan and P. Gomathisankar (Annamalainagar, India) .....	570
Optical and structure properties of amorphous Ge-Sb-Se films for ultrafast all-optical signal processing Y. Chen, T. Xu, X. Shen (Ningbo, China), R. Wang (Canberra, Australia), S. Zong, S. Dai and Q. Nie (Ningbo, China) .....	578
Structural, morphological and luminescence properties of nanocrystalline up-converting Y <sub>1.89</sub> Yb <sub>0.1</sub> Er <sub>0.01</sub> O <sub>3</sub> phosphor particles synthesized through aerosol route V. Lojpur, L. Mancic (Belgrade, Serbia), M.E. Rabanal (Madrid, Spain), M.D. Dramicanin (Belgrade, Serbia), Z. Tan, T. Hashishin, S. Ohara (Osaka, Japan) and O. Milosevic (Belgrade, Serbia) .....	584
LiMn <sub>2</sub> O <sub>4</sub> rods as cathode materials with high rate capability and good cycling performance in aqueous electrolyte Z. Li, L. Wang, K. Li (Dalian, PR China) and D. Xue (Dalian, Changchun, PR China) .....	592
The role of simultaneous substitution of Cr and Ru on the thermoelectric properties of defect manganese silicides MnSi <sub>δ</sub> (1.73 < δ < 1.75) V. Ponnambalam, D.T. Morelli (East Lansing, USA), S. Bhattacharya and T.M. Tritt (Clemson, USA) .....	598

In-situ rod-shaped nanoparticles in Mg–Zn magnesium alloy: Towards high strength and ductility M. Paramsothy and M. Gupta (Singapore, Singapore) .....	604
Impedance performances of SnO <sub>2</sub> –Zn <sub>2</sub> SnO <sub>4</sub> composite ceramics G.-Z. Zang (Luoyang, Jinan, China), L.-B. Li, H.-H. Liu, X.-F. Wang (Luoyang, China) and Z.-G. Gai (Jinan, China) .....	611
TiO <sub>2</sub> ultraviolet detector based on LaAlO <sub>3</sub> substrate with low dark current K. Lv, M. Zhang, C. Liu, G. Liu, H. Li, S. Wen (Changchun, China), Y. Chen (Beijing, China) and S. Ruan (Changchun, China) .....	614
Al-rich region of Al–Pt B. Grushko (Jülich, Germany), D. Kapush (Kyiv, Ukraine), J. Su, W. Wan and S. Hovmöller (Stockholm, Sweden) .....	618
Keywords .....	I