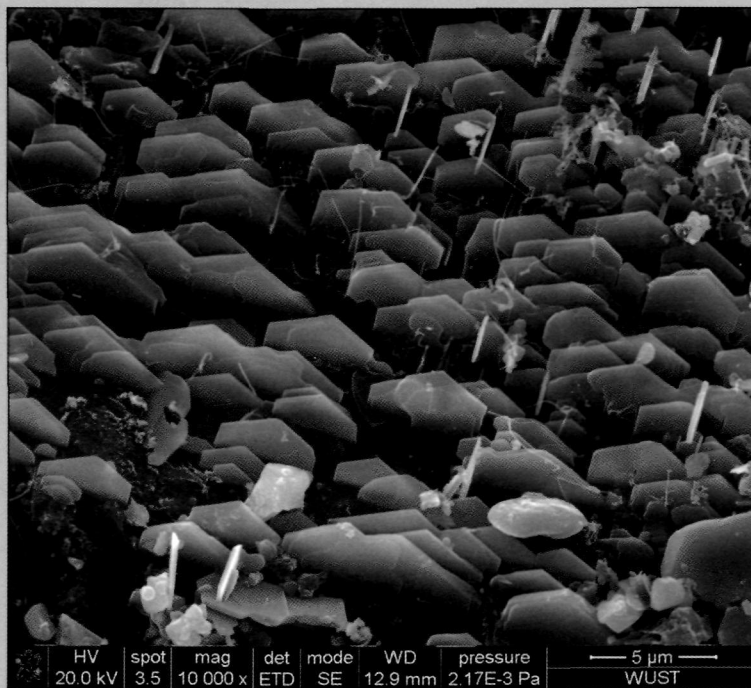


# CERAMICS INTERNATIONAL



**PIETRO VINCENZINI**

GENERAL EDITOR

EDITORS-IN-CHIEF

L. GAUCKLER  
SWITZERLAND

J. F. BAUMARD  
FRANCE

J.-K. GUO  
CHINA

K. KOUMOTO  
JAPAN

R. K. BORDIA  
USA

R. PAMPUCH  
POLAND

<http://www.elsevier.com/locate/ceramint>



ELSEVIER



(Abstracted/indexed in: *Applied Mechanics Reviews*; *Br. Ceram Abstr.*; *Ceramic Abstracts*; *Chemical Abstracts*; *Current Contents/Engineering, Computing & Technology*; *Current Contents/Physical, Chemical and Earth Sciences*; *Materials Science Citation Index*; *Met. Abstr.*; *Sci. Abstr.*; *Science Citation Index*; *SciSearch*; *World Alum. Abstr.* Also covered in the abstract and citation database *SciVerse SCOPUS*<sup>®</sup>. Full text available on *SciVerse ScienceDirect*<sup>®</sup>.)

## CONTENTS

### Volume 39 Issue 6 2013

#### Original Articles

- 6019 Effects of  $\text{Cr}_3\text{C}_2$  addition on the erosion–corrosion behavior of Ti(C,N)-based cermets  
W. WAN, J. XIONG, Z. GUO, G. DONG & C. YI (PR China)
- 6029 Structural and spectroscopic properties of  $\text{Nd}^{3+}:\text{Y}_2\text{Si}_2\text{O}_7$  phosphors  
M. ERDEM, G. ÖZEN, C. TAV (Turkey) & B. DI BARTOLO (USA)
- 6035 Fabrication of  $\text{CaSiO}_3$  bioceramics with open and unidirectional macro-channels using an ice/fiber-templated method  
Z. HUANG, K. ZHOU, D. LEI, Z. LI, Y. ZHANG & D. ZHANG (China)
- 6041 Fabrication and characterization of ceramic coatings with alumina–silica sol-incorporated  $\alpha$ -alumina powder coated on woven quartz fiber fabrics  
H.-R. LU & C.-A. WANG (China)
- 6051 Enhancement of  $\text{Ca}_3\text{Co}_4\text{O}_9$  thermoelectric properties by Cr for Co substitution  
J.C. DIEZ, M.A. TORRES, SH. RASEKH, G. CONSTANTINESCU, M.A. MADRE & A. SOTELO (Spain)
- 6057 Structural and electrical properties of  $(\text{Bi}_{0.9}\text{Dy}_{0.1})(\text{Fe}_{0.975}\text{TM}_{0.025})\text{O}_{3\pm\delta}$  (TM= $\text{Ni}^{2+}$ ,  $\text{Cr}^{3+}$  and  $\text{Ti}^{4+}$ ) thin films  
C.M. RAGHAVAN, E.S. KIM, J.W. KIM & S.S. KIM (Republic of Korea)
- 6063 Giant dielectric permittivity and non-linear electrical behavior in  $\text{CaCu}_3\text{Ti}_4\text{O}_{12}$  varistors from the molten-salt synthesized powder  
Y. HUANG, L. LIU, D. SHI, S. WU, S. ZHENG, L. FANG, C. HU (China) & B. ELOUADI (France)
- 6069 Effect of ceramic bonding phases on the thermo-mechanical properties of  $\text{Al}_2\text{O}_3$ –C refractories  
B. ZHU, Y. ZHU, X. LI & F. ZHAO (China)
- 6077 Structural, optical and magnetic properties of  $\text{Zn}_{1-x}\text{Co}_x\text{O}$  prepared by the sol–gel route  
G. SRINET, P. VARSHNEY, R. KUMAR, V. SAJAL, P.K. KULRIYA (India), M. KNOBEL & S.K. SHARMA (Brazil)
- 6087 Approach of phase transformations and densification in nanostructured and  $(\text{Bi}_2\text{O}_3, \text{ZnO}, \text{TiO}_2)$  doped silica ceramics  
L. NGUYEN, A. MAÎTRE, M. LEJEUNE, C. DOSSOU-YOVO, R. NOGUÉRA & R. PODOR (France)
- 6099 Predicting Charpy impact energy of  $\text{Al6061}/\text{SiC}_p$  laminated nanocomposites in crack divider and crack arrester forms  
H. POURALIAKBAR, A. NAZARI, P. FATAEI, A.K. LIVARY & M. JANDAGHI (Iran)

**Continued on inside back cover**



ELSEVIER

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

**SciVerse ScienceDirect**

**CONTENTS—Continued from outside back cover**

- 6107 Crystallization behavior and microstructure of  $\text{ErF}_3$  nanocrystals in an oxyfluoride glass  
A. MALLIK, B. PAL, P. KUNDU & A. BASUMAJUMDAR (India)
- 6113 Structural and magnetic properties of  $\text{Co}_{1-x}\text{Zn}_x\text{Fe}_2\text{O}_4$  nanorods prepared by the solvothermal annealing method  
Z. JIA, D. REN, Q. WANG, L. XU & R. ZHU (PR China)
- 6119 Carbothermal nitridation process of mechanically milled silica sand using Taguchi's method  
M. MUSTAPHA, E. ABU OTHMAN, K. NORSAL, F. MUSTAPHA, O. MAMAT & S. RAMESH (Malaysia)
- 6131 Synthesis and growth of  $\text{SiC/SiO}_2$  nanocables decorated with laminated porous ceramics from filter paper and polymeric precursor  
J. PAN, X. CHENG, X. YAN, J. PAN, C. ZHANG & Q. LU (PR China)
- 6139 Hydrothermal synthesis of Zn-doped  $\text{Li}_4\text{Ti}_5\text{O}_{12}$  with improved high rate properties for lithium ion batteries  
Z. ZHANG, L. CAO, J. HUANG, S. ZHOU, Y. HUANG & Y. CAI (China)
- 6145 The interaction of plasma proteins with nano-size fluoride-substituted apatite powders  
L. MONTAZERI, J. JAVADPOUR, M.A. SHOKRGOZAR, S. BONAKDAR, M. KHAYYAT MOGHADDAM & V. ASGARY (Iran)
- 6153 Road maps for processing foams containing particles  
D.O. VIVALDINI, V.R. SALVINI, A.P. LUZ & V.C. PANDOLFELLI (Brazil)
- 6165 Structural and dielectric properties of  $\text{Bi}_{1-x}\text{Sr}_x\text{MnO}_3$  ( $0.40 \leq x \leq 0.55$ )  
S. THAKUR, O.P. PANDEY & K. SINGH (India)
- 6175 Electrochemical and structural study of  $\text{Ce}_{0.8}\text{Sm}_{0.2-x}\text{La}_x\text{O}_{1.9}$  electrolyte materials for SOFC  
M. KAHLAOUI, A. INOUBLI, S. CHEFI, A. KOUKI (Tunisia), A. MADANI (Tunisia, Saudi Arabia) & C. CHEFI (Tunisia)
- 6183 KrF excimer laser irradiated nanoporous  $\text{TiO}_2$  layers for dye-sensitized solar cells: Influence of laser power density  
M.-Y. PU, J.-Z. CHEN & I.-C. CHENG (Taiwan)
- 6189 Thermal shock damage evaluation of refractory castables via hot elastic modulus measurements  
A.P. LUZ, T. SANTOS JR., J. MEDEIROS & V.C. PANDOLFELLI (Brazil)
- 6199 A CTAB-assisted hydrothermal synthesis of  $\text{VO}_2(\text{B})$  nanostructures for lithium-ion battery application  
N. LI, W. HUANG, Q. SHI, Y. ZHANG & L. SONG (PR China)
- 6207 Laser surface modification of alumina: Integrated computational and experimental analysis  
M.A. MONCAYO, S. SANTHANAKRISHNAN, H.D. VORA, S.R. PAITAL & N.B. DAHOTRE (USA)
- 6215 Mechanical properties of graphene platelet-reinforced alumina ceramic composites  
J. LIU (Birmingham, UK), H. YAN (UK) & K. JIANG (Birmingham, UK)
- 6223 Structural, electric and multiferroic properties of Sm-doped  $\text{BiFeO}_3$  thin films prepared by the sol-gel process  
X. XU, T. GUOQIANG, R. HUIJUN & X. AO (China)
- 6229 Synthesis and characterization of  $\text{Gd}_{0.1}\text{Ce}_{0.9}\text{O}_{1.95}$  nanopowder via an acetic-acrylic method  
A.Z. LIU, J.X. WANG, C.R. HE, H. MIAO, Y. ZHANG & W.G. WANG (PR China)
- 6237 Cutting characteristics of dental glass ceramics during *in vitro* dental abrasive adjusting using a high-speed electric handpiece  
X.-F. SONG (China), L. YIN (Australia), J.-H. PENG & B. LIN (China)
- 6251 On the determination of the film hardness in hard film/substrate composites using depth-sensing indentation  
N.A. SAKHAROVA, M.C. OLIVEIRA, J.M. ANTUNES & J.V. FERNANDES (Portugal)
- 6265 The effects of processing parameters on formation of nano-spinel ( $\text{MgAl}_2\text{O}_4$ ) from LiCl molten salt  
R. FAZLI, M. FAZLI, Y. SAFAEI-NAEINI & F. GOLESTANI-FARD (Iran)

*(contents continued from Inside back cover)*

- 6271 Synthesis of single-crystalline lanthanum hexaboride nanowires by Au catalyst  
Q.H. FAN, Y.M. ZHAO & D.D. LI (PR China)
- 6277 Sensitivity analysis of mathematical models for final product properties: Link to DTG curve  
M. ARSENOVIĆ, L. PEZO, S. STANKOVIĆ & Z. RADOJEVIĆ (Serbia)
- 6287 In situ growth of hydroxyapatite on lamellar alumina scaffolds with aligned pore channels  
L. HU, Y. ZHANG, S. DONG, S. ZHANG & B. LI (China)
- 6293 The influence of different carbon sources in the carbothermal reduction and nitridation (CRN) synthesis of SiAlON from nanocomposite precursors based on Al-SBA-15  
S. ABBASPOUR, A.A. NOURBAKHS, R. JAVAD KALBASI (Iran) & K.J.D. MACKENZIE (New Zealand)
- 6299 Solid state reaction preparation and enhanced red luminescence of S-doped  $\text{La}_2\text{Mo}_2\text{O}_9:\text{Pr}^{3+}$  phosphors  
D. ZHANG, S. SHI, M. LUO & J. ZHOU (China)
- 6303 Study of AC electrical properties of  $\text{V}_2\text{O}_5\text{-P}_2\text{O}_5\text{-B}_2\text{O}_3\text{-Dy}_2\text{O}_3$  glasses  
R.V. BARDE & S.A. WAGHULEY (India)
- 6313 Polyacrylamide gel synthesis and sintering of  $\text{Mg}_2\text{SiO}_4:\text{Eu}^{3+}$  nanopowder  
S.A. HASSANZADEH-TABRIZI & E. TAHERI-NASSAJ (Iran)
- 6319 White light emission from  $\text{Eu}^{3+}$  co-activated  $\text{Ca}_2\text{Gd}_8\text{Si}_6\text{O}_{26}:\text{Dy}^{3+}$  nanophosphors by solvothermal synthesis  
E. PAVITRA, G. SEETA RAMA RAJU & J.S. YU (Republic of Korea)
- 6325 Provenance study of Chinese proto-celadon in Western Han Dynasty  
W. HAO, T. ZHENG (China), Y. LI (People's Republic of China), J. ZHENG, J. ZHU (China), M.D. GLASCOCK (USA) & C. WANG (China)
- 6333 Effect of dual reinforced ceramic particles on high temperature tribological properties of aluminum composites  
S. KUMAR, R.S. PANWAR & O.P. PANDEY (India)
- 6343 Effects of manganese substitution at the B-site of lanthanum-rich strontium titanate anodes on fuel cell performance and catalytic activity  
M.K. RATH, B.-G. AHN, B.-H. CHOI, M.-J. JI & K.-T. LEE (Republic of Korea)
- 6355 Densification and characterization of  $\text{SiO}_2\text{-B}_2\text{O}_3\text{-CaO-MgO}$  glass/ $\text{Al}_2\text{O}_3$  composites for LTCC application  
X. CHEN, W. ZHANG, S. BAI & Y. DU (PR China)
- 6363 Preparation of  $\text{Ca}_4\text{Mg}_5(\text{PO}_4)_6:\text{Eu}^{2+}, \text{Mn}^{2+}$  phosphor and its photoluminescence properties  
T. WANJUN, F. TINGTING, D. KEJIAN & W. MING (PR China)
- 6369 Defect chemistry of a high-k 'Y5V'  $(\text{Ba}_{0.95}\text{Eu}_{0.05})\text{TiO}_3$  ceramic  
D.-Y. LU, L. ZHANG & X.-Y. SUN (China)
- 6379 Calcium carbonate decomposition in white-body tiles during firing in the presence of carbon dioxide  
A. ESCARDINO, J. GARCÍA-TEN, A. SABURIT, C. FELIU & M.P. GÓMEZ-TENA (Spain)
- 6391 Multifunctional  $\text{Fe}_3\text{O}_4@\text{C}/\text{YVO}_4:\text{Dy}^{3+}$  nanopowers: Preparation, luminescence and magnetic properties  
J. SHI, L. TONG, X. REN, Q. LI & H. YANG (China)
- 6399 Structural, vibrational, optical, magnetic and dielectric properties of  $\text{Bi}_{1-x}\text{Ba}_x\text{FeO}_3$  nanoparticles  
S. CHAUHAN, M. ARORA, P.C. SATI, S. CHHOKER, S.C. KATYAL & M. KUMAR (India)
- 6407 Sol-gel auto combustion synthesis of  $\text{CoFe}_2\text{O}_4/1\text{-methyl-2-pyrrolidone}$  nanocomposite: Its magnetic characterization  
U. KURTAN, R. TOPKAYA, S. ESIR & A. BAYKAL (Turkey)

- 6415 Surfactant-free dispersion of silver nanoparticles into MWCNT-aqueous nanofluids prepared by one-step technique and their thermal characteristics  
B. MUNKHBAYAR, M.R. TANSHEEN, J. JEOUN, H. CHUNG & H. JEONG (Republic of Korea)
- 6427 Facile synthesis of hexagonal boron nitride fibers with uniform morphology  
X. HOU, Z. YU & K.-C. CHOU (China)
- 6433 Electrical properties of Tb-doped barium cerate  
Q.A. ISLAM, S. NAG & R.N. BASU (India)
- 6441 High-current measurement of the grain resistivity in zinc oxide varistor ceramics  
A.I. IVON, R.I. LAVROV (Ukraine) & A.B. GLOT (Mexico)
- 6449 The effects of rare-earth oxide additives on the densification of pressureless sintering B<sub>4</sub>C ceramics  
R. WEI, Y. ZHANG, H. GONG, Y. JIANG & Y. ZHANG (PR China)
- 6453 Synthesis of Fe<sub>2</sub>O<sub>3</sub> nanoparticles for nitrogen dioxide gas sensing applications  
S.T. NAVALE, D.K. BANDGAR, S.R. NALAGE, G.D. KHUSPE, M.A. CHOUGULE, Y.D. KOLEKAR, S. SEN & V.B. PATIL (India)
- 6461 Sol-gel synthesis of Pd doped ZnO nanorods for room temperature hydrogen sensing applications  
M. KASHIF, M.E. ALI (Malaysia), S.M.U. ALI (Pakistan) & U. HASHIM (Malaysia)
- 6467 Calcium phosphate bioceramics synthesized from eggshell powders through a solid state reaction  
W.-F. HO, H.-C. HSU, S.-K. HSU, C.-W. HUNG & S.-C. WU (ROC)
- 6475 Fabrication and characterization of Mn-doped CuO thin films by the SILAR method  
Y. GÜLEN, F. BAYANSAL, B. ŞAHİN, H.A. ÇETINKARA & H.S. GÜDER (Turkey)
- 6481 Fabrication of all-solid-state battery using Li<sub>5</sub>La<sub>3</sub>Ta<sub>2</sub>O<sub>12</sub> ceramic electrolyte  
M. KOTOBUKI & K. KANAMURA (Japan)
- 6489 Fiber/matrix interfacial shear strength of C/C composites with PyC-TaC-PyC and PyC-SiC-TaC-PyC multi-interlayers  
Y. LONG (PR China, UK), A. JAVED (UK, Pakistan), Y. ZHAO (UK), Z.-K. CHEN, X. XIONG (PR China) & P. XIAO (UK)
- 6497 Growth and characterization of the Al-doped and Al-Sn co-doped ZnO nanostructures  
X. TIAN, Z. PAN, H. ZHANG, H. FAN, X. ZENG, C. XIAO, G. HU & Z. WEI (China)
- 6503 Fabrication and mechanical properties of metal matrix composite with homogeneously dispersed ceramic particles  
E.-H. KIM, G.-H. CHO, J.-H. LEE, Y.-G. JUNG, Y. YOO & S. SEO (Republic of Korea)
- 6509 Mechanical and histological evaluation of a plasma sprayed hydroxyapatite coating on a titanium bond coat  
Y.-C. YANG & C.-Y. YANG (ROC)
- 6517 Stress enhanced TiO<sub>2</sub> nanowire growth on Ti-6Al-4V particles by thermal oxidation  
M.M. ARAFAT, A.S.M.A. HASEEB (Malaysia), B. DINAN & S.A. AKBAR (USA)
- 6527 Electrical conductivity of La<sub>1-x</sub>Ca<sub>x</sub>FeO<sub>3-δ</sub> solid solutions  
R. ANDOULSI, K. HORCHANI-NAIFER & M. FÉRID (Tunisia)
- 6533 Micro-porous calcium phosphate coatings on load-bearing zirconia substrate: Processing, property and application  
J.-Z. YANG (Australia, PR China), R. SULTANA, P. ICHIM, X.-Z. HU (Australia), Z.-H. HUANG (PR China), W. YI, B. JIANG (Australia) & Y. XU (PR China)
- 6543 Alumina/MWCNTs composites by aqueous slip casting and pressureless sintering  
M. MICHÁLEK, K. BODIŠOVÁ, M. MICHÁLKOVÁ, J. SEDLÁČEK & D. GALUSEK (Slovakia)

- 6551 Temperature dependent magnetic properties of  $\text{CoFe}_2\text{O}_4/\text{CTAB}$  nanocomposite synthesized by sol-gel auto-combustion technique  
U. KURTAN, R. TOPKAYA, A. BAYKAL (Turkey) & M.S. TOPRAK (Sweden, Turkey)
- 6559 Study of electrochemical hydrogen charge/discharge properties of  $\text{FePO}_4$  for application as negative electrodes in hydrogen batteries  
D.-K. LIM, B. SINGH, J. KANG, J. KIM & S.-J. SONG (Republic of Korea)
- 6569 Dielectric properties of BN modified carbon fibers by dip-coating  
W. ZHOU, P. XIAO, Y. LI & L. ZHOU (PR China)
- 6577 Effects of thermal annealing on the optical properties of Ar ion irradiated ZnS films  
S. XUE (China)
- 6583 Photocatalytic performance of Pr/In/Nd composite oxides synthesized by solid state reaction  
H. LI, Y. CUI, W. HONG, S. FAN & L. ZHU (People's Republic of China)
- 6591 The effect of iron incorporation on the *in vitro* bioactivity and drug release of mesoporous bioactive glasses  
Y. ZHANG, Y. LIU, M. LI, S. LU & J. WANG (People's Republic of China)
- 6599 Facile solvothermal synthesis and polarity based tunable morphologies of ZnO nanocrystals  
J.Y. PARK, H.C. JUNG, G.S.R. RAJU, B.K. MOON, J.H. JEONG, H.Y. CHOI & J.H. KIM (Republic of Korea)
- 6607 Synthesis and characterization of  $\text{CeO}_2$  nano-rods  
Y. CHEN (PR China, Japan), T. LIU (PR China), C. CHEN (Japan), W. GUO (PR China), R. SUN, S. LV, M. SAITO, S. TSUKIMOTO & Z. WANG (Japan)
- 6611 Electrochemical study of NiO nanoparticles electrode for application in rechargeable lithium-ion batteries  
A. KUMAR RAI, L. TUAN ANH, C.-I. PARK & J. KIM (South Korea)
- 6619 Piezoelectric behavior of  $(1-x)\text{K}_{0.50}\text{Na}_{0.50}\text{NbO}_3-x\text{Ba}_{0.80}\text{Ca}_{0.20}\text{ZrO}_3$  lead-free ceramics  
T. CHEN, H. WANG, T. ZHANG, G. WANG, J. ZHOU, J. ZHANG & Y. LIU (PR China)
- 6623 Enhancement of piezoelectric and ferroelectric properties of  $\text{BaTiO}_3$  ceramics by aluminum doping  
A.I. ALI (South Korea, Egypt), C.W. AHN & Y.S. KIM (South Korea)
- 6631 Template assisted fabrication of  $\text{TiO}_2$  and  $\text{WO}_3$  nanotubes  
C. CHON CHEN, C.-H. CHENG & C.-K. LIN (Taiwan)
- 6637 Spark plasma sintering of graphene reinforced zirconium diboride ultra-high temperature ceramic composites  
G.B. YADHUKULAKRISHNAN, S. KARUMURI, A. RAHMAN, R.P. SINGH, A. KANAN KALKAN & S.P. HARIMKAR (USA)
- 6647 Solvothermal synthesis of  $\text{SnO}_2$ /graphene nanocomposites for supercapacitor application  
S.P. LIM, N.M. HUANG & H.N. LIM (Malaysia)
- 6657 Processing of different alumina-zirconia composites by slip casting  
H.L. CALAMBÁS PULGARIN, L.B. GARRIDO & M.P. ALBANO (Argentina)
- 6669 Effect of freeze-drying treatment on the optical properties of SPS-sintered alumina  
M. SUÁREZ, A. FERNÁNDEZ, J.L. MENÉNDEZ (Spain), M. NYGREN (Sweden), R. TORRECILLAS (Spain) & Z. ZHAO (Sweden)
- 6673 Grain growth and crystallinity of ultrafine barium titanate particles prepared by various routes  
C.Y. SU, Y. OTSUKA (Germany), C.Y. HUANG (ROC), D.F. HENNINGS, C. PITHAN (Germany), F.T. SHIAO (ROC) & R. WASER (Germany)
- 6681 Carboxylic acids and polyethylene glycol assisted synthesis of nanocrystalline nickel ferrites  
A.S. NIKOLIĆ, N. JOVIĆ, J. ROGAN, A. KREMENOVIĆ (Serbia), M. RISTIĆ (Croatia), A. MEDEN (Slovenia) & B. ANTIĆ (Serbia)

- 6689 Effect of Cu powder addition on thermoelectric properties of Cu/TiO<sub>2-x</sub> composites  
Y. LU, K. SAGARA, Y. MATSUDA, L. HAO (Japan), Y. RONG JIN (PR China) & H. YOSHIDA (Japan)
- 6695 Microstructure and mechanical properties of fine grained carbon-bonded Al<sub>2</sub>O<sub>3</sub>-C materials  
Y. KLEMM, H. BIERMANN & C.G. ANEZIRIS (Germany)
- 6703 Single step synthesis of tungsten carbide (WC) nanoparticles from scheelite ore  
H. SINGH & O.P. PANDEY (India)
- 6707 Bi(Zn<sub>1/2</sub>Ti<sub>1/2</sub>)O<sub>3</sub> modified BiFeO<sub>3</sub>-BaTiO<sub>3</sub> lead-free piezoelectric ceramics with high temperature stability  
X. SHAN, C. ZHOU, Z. CEN, H. YANG, Q. ZHOU & W. LI (PR China)
- 6713 Effect of strontium and phosphorus source on the structure, morphology and luminescence of Sr<sub>5</sub>(PO<sub>4</sub>)<sub>2</sub>SiO<sub>4</sub>:Eu<sup>2+</sup> phosphor prepared by solid-state reaction  
K. HUANG, T. DENG, S. YAN & J. HU (PR China)
- 6721 Design of double-layer ceramic absorbers for microwave heating  
Z. PENG (USA), J.-Y. HWANG (USA, China) & M. ANDRIESE (USA)
- 6727 Inherent defects in sol-precipitation/hydrothermally derived SrTiO<sub>3</sub> nanopowders  
T. ŠETINC, M. SPREITZER, D. VENGUST, I. JERMAN & D. SUVOROV (Slovenia)
- 6735 Study of cation distribution for Cu-Co nanoferrites synthesized by the sol-gel method  
I. AHMAD, T. ABBAS, M.U. ISLAM & A. MAQSOOD (Pakistan)
- 6743 Phase stability, microstructural and thermo-physical properties of BaLn<sub>2</sub>Ti<sub>3</sub>O<sub>10</sub> (Ln=Nd and Sm) ceramics  
L. GUO, H. GUO, G. MA, S. GONG & H. XU (China)
- 6751 Dissolution properties of different compositions of biphasic calcium phosphate bimodal porous ceramics following immersion in simulated body fluid solution  
Y. ZHANG, J. AI, D. WANG, Z. HONG, W. LI (China) & Y. YOKOGAWA (Japan)
- 6763 Luminescence enhancement of zincblende ZnS:Cl<sup>-</sup> nanoparticles synthesized by a low temperature solid state reaction method  
S. ZHOU, Y. LI, Z. CHEN, X. XIA LI, N. CHEN & G. DU (China)
- 6769 Mechanical and thermophysical properties of carbon/carbon composites with hafnium carbide  
C. LI, K. LI, H. LI, H. OUYANG, Y. ZHANG & L. GUO (PR China)
- 6777 Phase analysis and wear behavior of *in-situ* spark plasma sintered Ti<sub>3</sub>SiC<sub>2</sub>  
N.C. GHOSH & S.P. HARIMKAR (USA)
- 6787 Dielectric relaxation behavior and energy storage properties in Ba<sub>0.4</sub>Sr<sub>0.6</sub>Zr<sub>0.15</sub>Ti<sub>0.85</sub>O<sub>3</sub> ceramics with glass additives  
T. WU, Y. PU & K. CHEN (People's Republic of China)
- 6795 Controllable synthesis of CaTi<sub>2</sub>O<sub>4</sub>(OH)<sub>2</sub> nanoflakes by a facile template-free process and its properties  
W. DONG, B. SONG, G. ZHAO & G. HAN (PR China)
- 6805 Growth behavior of nanosized ceria powders prepared by coprecipitation routes  
G. YANG (People's Republic of China), H.-H. KO, Y.-W. HSU, K.-H. YANG, M.-C. WANG (Taiwan), J. HAN & X.J. ZHAO (People's Republic of China)
- 6813 Laser ablation behavior and mechanism of C/SiC composite  
Y. TONG, S. BAI, H. ZHANG & Y. YE (PR China)
- 6821 Effect of milling on the surface functionality of BaTiO<sub>3</sub>-CaSnO<sub>3</sub> ceramics  
M.M. SYCHOV, N.V. ZAKHAROVA & S.V. MJAKIN (Russia)

- 6827 Porous sodium borate-bonded SiC ceramics  
K.-Y. LIM, Y.-W. KIM & I.-H. SONG (Republic of Korea)
- 6835 Luminescence properties of  $\text{Eu}^{2+}$  and  $\text{Ce}^{3+}$  ions in calcium lithio-germanate  $\text{Li}_2\text{CaGeO}_4$   
I.V. BEREZOVSKAYA, N.P. EFRYUSHINA, I.I. SEIFULLINA, E.E. MARTSINKO (Ukraine), B.I. ZADNEPROVSKI (Russia), G.B. STRYGANYUK (Ukraine, Germany), A.S. VOLOSHINOVSKII, S.M. LEVSHOV & V.P. DOTSENKO (Ukraine)
- 6841 Effect of  $\text{La}_2\text{O}_3$  additives on the strength and microstructure of mullite ceramics obtained from coal gangue and  $\gamma\text{-Al}_2\text{O}_3$   
H. JI, M. FANG, Z. HUANG, K. CHEN, Y. XU, Y. LIU & J. HUANG (PR China)
- 6847 Atmosphere influence in the pyrolysis of poly[(alkylamino)borazine] for the production of BN fibers  
Y. LEI, Y. WANG & Y. SONG (PR China)
- 6853 Preparation and characterization of AlN/FeCoSiB magnetoelectric thin film composites  
B. TONG, X. YANG, Z. GUO, K. LI, J. OUYANG, G. LIN & S. CHEN (China)
- 6861 Graphene supported poly-pyrrole(PPY)/ $\text{Li}_2\text{SnO}_3$  ternary composites as anode materials for lithium ion batteries  
Y. ZHAO, Y. HUANG & Q. WANG (PR China)
- 6867 Combustion synthesis of high purity SiC powder by radio-frequency heating  
L. WANG, Y. PENG, X. HU & X. XU (PR China)
- 6877 Room temperature elastic properties of gadolinia-doped ceria as a function of porosity  
X. FAN, E.D. CASE, Q. YANG & J.D. NICHOLAS (USA)
- 6887 Feedstock properties and injection molding simulations of bimodal mixtures of nanoscale and microscale aluminum nitride  
K.H. KATE, R.K. ENNETI, V.P. ONBATTUVELLI & S.V. ATRE (USA)
- 6899 Preparation of nano-sized  $\text{Mg}_{0.6}\text{Al}_{0.8}\text{Ti}_{1.6}\text{O}_5$  powders using the inorganic salts route  
M. SOBHANI, A. SEDAGHAT, T. EBADZADEH & M. EBRAHIMI (Iran)
- 6907 Stabilization of fluorine-containing industrial waste by production of sintered glass-ceramics  
I. PONSOT, R. FALCONE & E. BERNARDO (Italy)
- 6917 Facile synthesis, characterization, and evaluation of neurotoxicity effect of cerium oxide nanoparticles  
M. DARROUDI, M. HAKIMI, M. SARANI, R. KAZEMI OSKUEE, A. KHORSAND ZAK & L. GHOLAMI (Iran)
- 6923 Morphology control and improved field emission properties of ZnO tetrapod films deposited by electrophoretic deposition  
L.A. MA & T.L. GUO (PR China)
- 6931 Processing and Spark Plasma Sintering of zirconia/titanium cermets  
E. FERNANDEZ-GARCIA, C.F. GUTIERREZ-GONZALEZ, A. FERNANDEZ, R. TORRECILLAS & S. LOPEZ-ESTEBAN (Spain)
- 6937 Synthesis and electrochemical characteristics of  $\text{LiNi}_{0.5}\text{Co}_{0.5}\text{O}_2$  from different combinations of carbonates and oxides  
M.Y. SONG, H. RIM & H.R. PARK (Republic of Korea)
- 6945 Preparation, microstructure and magnetic properties of Fe-containing SiC ceramic nanocomposites derived from  $\text{Fe}(\text{CO})_5$ -modified AHPCS  
Z. YU, J. ZHAN, Z. ZHANG & L. YANG (China)
- 6953 Opto-electronic properties of molybdenum doped indium tin oxide nanostructured thin films prepared via sol-gel spin coating  
S. MOHAMMADI, H. ABDIZADEH & M.R. GOLOBOSTANFARD (Iran)



- 6963 Nucleation, crystallization behavior and microstructure of mica glass-ceramics in the system  $\text{SrO} \cdot 4\text{MgO} \cdot x\text{Al}_2\text{O}_3 \cdot 6\text{SiO}_2 \cdot 2\text{MgF}_2$  ( $x=1, 1.5$  and  $2$ )  
A. MALLIK, P. KUNDU & A. BASUMAJUMDAR (India)
- 6971 Optimization of synthesis conditions for preparation of ceramic (A-type zeolite) membranes in dehydration of ethylene glycol  
M. JAFARI, A. NOURI, S.F. MOUSAVI, T. MOHAMMADI & M. KAZEMIMOGHADAM (Iran)
- 6981 Pink ceramic pigments based on chromium doped  $\text{M}(\text{Al}_{2-x}\text{Cr}_x)\text{O}_4$ ,  $\text{M}=\text{Mg, Zn}$ , normal spinel  
S.R. PRIM (Brazil), A. GARCÍA, R. GALINDO, S. CERRO, M. LLUSAR (Spain), M.V. FOLGUERAS (Brazil) & G. MONRÓS (Spain)
- 6991 Dielectric and piezoelectric properties of cerium modified  $\text{BaBi}_4\text{Ti}_4\text{O}_{15}$  ceramics  
C.L. DIAO, J.B. XU, H.W. ZHENG, L. FANG, Y.Z. GU & W.F. ZHANG (China)
- 6997 Characterisation of the pore-forming process in lightweight aggregate based on silica sludge by means of X-ray micro-tomography (micro-CT) and mercury intrusion porosimetry (MIP)  
L. KORAT, V. DUCMAN, A. LEGAT & B. MIRTIC (Slovenia)
- 7007 Effect of triethanolamine on the electrophoretic deposition of hydroxyapatite nanoparticles in isopropanol  
M. FARROKHI-RAD & T. SHAHRABI (Iran)
- 7015 Relationship between printability and rheological behavior of ink-jet conductive inks  
K. WOO, D. JANG, Y. KIM & J. MOON (Republic of Korea)
- 7023  $1.55 \mu\text{m}$  emission and upconversion luminescence of  $\text{Er}^{3+}$ -doped strontium borate glasses  
Y. GUAN, Z. WEI, Y. HUANG (China), R. MAALEJ (Tunisia) & H.J. SEO (Republic of Korea)
- 7029 Carbon nanofibers decorated with binary semiconductor ( $\text{TiO}_2/\text{ZnO}$ ) nanocomposites for the effective removal of organic pollutants and the enhancement of antibacterial activities  
B. PANT (Republic of Korea), H.R. PANT (Republic of Korea, Nepal), N.A.M. BARAKAT, M. PARK, K. JEON, Y. CHOI & H.-Y. KIM (Republic of Korea)
- 7037 Preliminary study of in situ transformed carbon fibers/ $\text{Al}_2\text{O}_3$  ceramic matrix composites  
J.J. CAO, H.H. CHEN, F. DU, H.C. ZHAO & L. FAN (China)
- 7043 Effect of polyethylene glycol on the electrophoretic deposition of hydroxyapatite nanoparticles in isopropanol  
S. KUCHE LOGHMANI, M. FARROKHI-RAD & T. SHAHRABI (Iran)
- 7053 Electrochemical behaviour and sulfur tolerance of  $\text{V}_x\text{Mo}_{(1-x)}\text{O}_y$  as solid oxide fuel cell anode  
B. BEYRIBEY, B. TIMURKUTLUK, T.Y. ERTUĞRUL, Ç. TIMURKUTLUK & M.D. MAT (Turkey)
- 7063 Effects of prestrain applied to poly(ethylene terephthalate) substrate on size, porosity, and geometry of  $\text{TiO}_2$  particles and optical properties of  $\text{TiO}_2/\text{PET}$  specimens  
T.-C. LI, C.-J. CHUNG, C.-F. HAN & J.-F. LIN (ROC)
- 7077 Effect of micro- and nano-fillers on the properties of silicone rubber-alumina flexible microwave substrate  
L.K. NAMITHA, J. CHAMESWARY, S. ANANTHAKUMAR & M.T. SEBASTIAN (India)
- 7089 Processing, structures and compressive properties of porous glass-ceramic composites prepared from secondary by-product materials  
A.A. FRANCIS, M.K. ABDEL RAHMAN & A. DAOUD (Egypt)
- 7097 A novel charge transfer blue-emitting phosphor:  $\text{BaY}_2\text{Si}_3\text{O}_{10}$   
Z. XIA, Y. LIANG, W. HUANG, D. YU, M. ZHANG & M. TONG (People's Republic of China)
- 7101 Microstructure and properties of  $\text{C}_f/\text{SiC}$  composites with thin SiCN layer as fiber-protecting coating  
Y. ZHU, B. PEI, M. YUAN, Y. LIU & Z. HUANG (PR China)

- 7107 Cu-doped TiO<sub>2</sub> nanoparticles/graphene composites for efficient visible-light photocatalysis  
N.R. KHALID (Pakistan, PR China), E. AHMED (Pakistan), Z. HONG (PR China), M. AHMAD (Pakistan, PR China), Y. ZHANG (PR China) & S. KHALID (Pakistan)
- 7115 Synthesis and luminescence properties of Eu<sup>2+</sup>-doped 8-coordinated SrO phosphors  
K. KOMATSU, T. SHIRAI, A. NAKAMURA, A. KATO, S. OHSHIO, N. NAMBU, I. TODA, H. MURAMATSU & H. SAITOH (Japan)
- 7119 Silver-loaded TiO<sub>2</sub> powders prepared through mechanical ball milling  
B. AYSIN, A. OZTURK & J. PARK (Turkey)
- 7127 Low-temperature synthesis of BaTiO<sub>3</sub> powders by the sol-gel-hydrothermal method  
W. WANG, L. CAO, W. LIU, G. SU & W. ZHANG (China)
- 7135 Degradation behavior of 4D carbon/carbon composites under supersonic oxidative air plasma  
S. FARHAN, N. UL-HAQ (Pakistan) & W.-S. KUO (ROC)
- 7143 Fabrication and photocatalytic activity of electrospun nylon-6 nanofibers containing tourmaline and titanium dioxide nanoparticles  
S.-J. KANG (Republic of Korea), L.D. TIJING (Republic of Korea, Philippines), B.-S. HWANG, Z. JIANG, H.Y. KIM & C.S. KIM (Republic of Korea)
- 7149 Template free crystallization of zeolite Rho via Hydrothermal synthesis: Effects of synthesis time, synthesis temperature, water content and alkalinity  
S.F. MOUSAVI, M. JAFARI, M. KAZEMIMOGHADAM & T. MOHAMMADI (Iran)
- 7159 Effect of small-sized conductive filler on the properties of an epoxy composite for a bipolar plate in a PEMFC  
H. SUHERMAN (Malaysia, Indonesia), J. SAHARI & A.B. SULONG (Malaysia)
- 7167 Influence of substrate temperature on morphological and ferroelectric properties of Ba<sub>0.75</sub>Sr<sub>0.25</sub>TiO<sub>3</sub> thin films deposited on nichrome substrates by Rf sputtering  
J.-E. MANCILLA, J.-N. RIVERA, C.-A. HERNÁNDEZ (Mexico), A. MÁRQUEZ-HERRERA & M.-G. ZAPATA-TORRES (México)
- 7173 The potential of ball-milled Serbian natural clay for removal of heavy metal contaminants from wastewaters: Simultaneous sorption of Ni, Cr, Cd and Pb ions  
A. DJUKIĆ, U. JOVANOVIĆ, T. TUVIĆ, V. ANDRIĆ, J. GRBOVIĆ NOVAKOVIĆ, N. IVANOVIĆ & L. MATOVIĆ (Serbia)
- 7179 Paper-derived hydroxyapatite  
S.L. STARES (Germany, Brazil), M.C. FREDEL (Brazil), P. GREIL & N. TRAVITZKY (Germany)
- 7185 The crystallization process and chemical durability of glass-ceramics based on the Li<sub>2</sub>O–B<sub>2</sub>O<sub>3</sub> (Fe<sub>2</sub>O<sub>3</sub>)–SiO<sub>2</sub> (GeO<sub>2</sub>) system  
S.M. SALMAN, S.N. SALAMA & E.A. MAHDY (Egypt)
- 7193 Luminescence properties of white-light long-lasting phosphor Y<sub>2</sub>O<sub>2</sub>S:Dy<sup>3+</sup>, Mg<sup>2+</sup>, Si<sup>4+</sup>  
P. HUANG, F. YANG, C. CUI, L. WANG & X. LEI (China)
- 7199 Low temperature degradation of Al<sub>2</sub>O<sub>3</sub>-doped 3Y-TZP sintered at various temperatures  
Z.-K. WU, N. LI, C. JIAN, W.-Q. ZHAO & J.-Z. YAN (China)
- 7205 Research on CBN/TiC composites Part1: Effects of the cBN content and sintering process on the hardness and transverse rupture strength  
S.-Y. CHIOU, S.-F. OU, Y.-G. JANG & K.-L. OU (Taiwan)
- 7211 Strong green light emission in Ho doped Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub> ferroelectric ceramics  
T. WEI, Q.J. ZHOU, C.Z. ZHAO, Y.B. LIN, Y.L. ZOU, Y. LI & L.S. ZHANG (China)

## Short Communications

- 7217 Dryout temperature–vapor pressure profile of polymeric fiber containing refractory castables  
R. SALOMÃO & V.C. PANDOLFELLI (Brazil)
- 7223 Synthesis of one-dimensional Ga<sub>2</sub>O<sub>3</sub> nanostructures via high-energy ball milling and annealing of GaN  
A.K. NARAYANA SWAMY, E. SHAFIROVICH & C.V. RAMANA (United States)
- 7229 Effect of high temperature heat treatment on ZrB<sub>2</sub>–SiC composites added with Yb<sub>2</sub>O<sub>3</sub>  
W.-M. GUO, Z.-G. YANG & G.-J. ZHANG (China)
- 7235 Preparation and electromagnetic properties of in-situ Ba<sub>0.8</sub>Sr<sub>0.2</sub>TiO<sub>3</sub>/YFeO<sub>3</sub> composites  
H. YANG, Y. YANG, Y. LIN & M. LIU (China)
- 7241 High dielectric loss and microwave absorption behavior of multiferroic BiFeO<sub>3</sub> ceramic  
J. YUAN, Z.-L. HOU, H.-J. YANG, Y. LI, Y.-Q. KANG, W.-L. SONG, H.-B. JIN, X.-Y. FANG & M.-S. CAO (PR China)
- 7247 Preparation of silica encapsulated carbon black with high thermal stability  
C. PENG, C. ZHANG, M. LV & J. WU (China)
- 7255 One step hydrothermal synthesis of micro-belts like β-Ni(OH)<sub>2</sub> thin films for supercapacitors  
G.S. GUND (India), D.P. DUBAL (Germany), S.S. SHINDE & C.D. LOKHANDE (India)
- 7263 Preparation of aluminum borate whiskers by the molten salt synthesis method  
S. PENG, H. JINWEN, W. WENWEI & W. XUEHANG (People's Republic of China)
- 7269 La<sub>0.8</sub>Sr<sub>0.2</sub>Cr<sub>0.5</sub>Fe<sub>0.5</sub>O<sub>3-δ</sub> (LSCF)–Zr<sub>0.8</sub>Y<sub>0.2</sub>O<sub>2-δ</sub> (YSZ) based multilayer membrane for CO<sub>2</sub> decomposition  
W. FANG, J. GAO & C. CHEN (China)
- 7273 Synthesis, microstructure and mechanical properties of reactively sintered ZrB<sub>2</sub>–SiC–ZrN composites  
W.-W. WU (Japan), G.-J. ZHANG, Y.-M. KAN (China) & Y. SAKKA (Japan)
- 7279 Multiwavelength excited white-emitting Dy<sup>3+</sup> doped Sr<sub>3</sub>Bi(PO<sub>4</sub>)<sub>3</sub> phosphor  
Z. YANG, Y. LIU, C. LIU, F. YANG, Q. YU, X. LI & F. LU (China)
- 7285 Simultaneous synthesis and consolidation of Mg<sub>4</sub>Al<sub>2</sub>Ti<sub>9</sub>O<sub>25</sub> by pulsed current activated heating and its mechanical properties  
I.-J. SHON, S.-L. DU, J.-M. DOH & J.-K. YOON (Republic of Korea)