

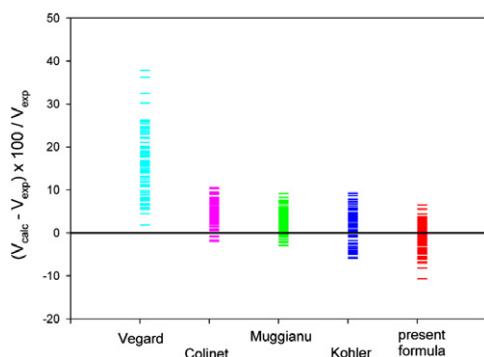
Abstracted/indexed in BioEngineering Abstracts, Chemical Abstracts, Coal Abstracts, Current Contents/Physics, Chemical, & Earth Sciences, Engineering Index, Research Alert, SCISEARCH, Science Abstracts, and Science Citation Index. Also covered in the abstract and citation database SCOPUS<sup>®</sup>. Full text available on ScienceDirect<sup>®</sup>.

### Regular Articles

#### A new method to estimate the atomic volume of ternary intermetallic compounds

M. Pani and F. Merlo

page 959



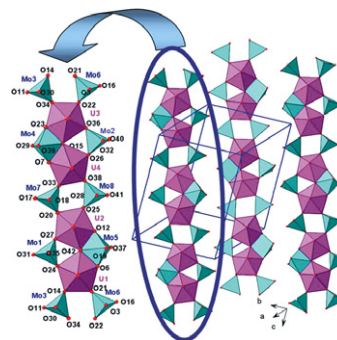
**Synopsis:** the volume of a ternary intermetallic compound can be calculated starting from volumes of some binary phases, selected by the methods of Colinet, Muggianu, Kohler and a new method proposed here. The so obtained values are compared with the experimental ones for eight ternary systems.

### Regular Articles—Continued

#### From ${}_{\infty}[(\text{UO}_2)_2\text{O}(\text{MoO}_4)_4]^{6-}$ to ${}_{\infty}[(\text{UO}_2)_2(\text{MoO}_4)_3(\text{MoO}_5)]^{6-}$ infinite chains in $A_6\text{U}_2\text{Mo}_4\text{O}_{21}$ ( $A = \text{Na}, \text{K}, \text{Rb}, \text{Cs}$ ) compounds: Synthesis and crystal structure of $\text{Cs}_6[(\text{UO}_2)_2(\text{MoO}_4)_3(\text{MoO}_5)]$

S. Yagoubi, S. Obbade, S. Saad and F. Abraham

page 971

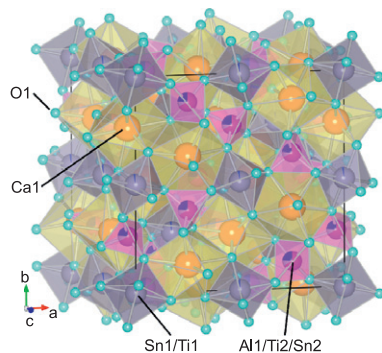


The stacking of  ${}_{\infty}[(\text{UO}_2)_2(\text{MoO}_4)_3(\text{MoO}_5)]^{6-}$  infinite uranyl molybdate ribbons in the  $\text{Cs}_6[(\text{UO}_2)_2(\text{MoO}_4)_3(\text{MoO}_5)]$  structure.

#### Preparation, crystal structure and photoluminescence of garnet-type calcium tin titanium aluminates

Hisanori Yamane and Tetsuya Kawano

page 965

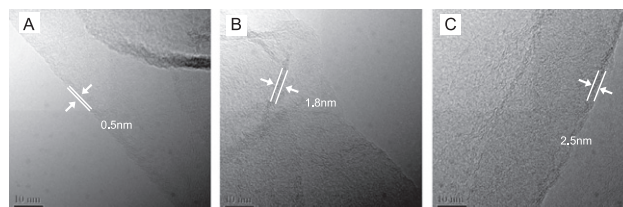


Garnet-type solid solutions of  $\text{Ca}_3\text{Sn}_{3-x}\text{Ti}_x\text{Al}_2\text{O}_{12}$  ( $x = 0.6-1.4$ ) were prepared.  $\text{Sn}^{4+}$  and  $\text{Ti}^{4+}$  partially occupy both tetrahedral and octahedral sites. The solid solutions showed a broad emission band peaking at 465 nm under UV excitation.

#### Controllable synthesis of graphene sheets with different numbers of layers and effect of the number of graphene layers on the specific capacity of anode material in lithium-ion batteries

Xin Tong, Hui Wang, Gang Wang, Lijuan Wan, Zhaoyu Ren, Jintao Bai and Jinbo Bai

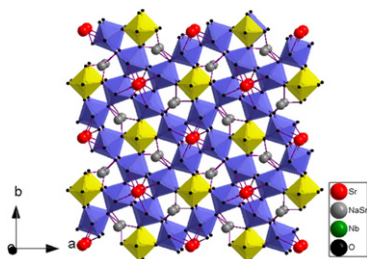
page 982



The typical TEM images of the graphene sheets derived from GO3(a), GO2(b) and GO1(c).

**Structural characterization and Curie temperature determination of a sodium strontium niobate ferroelectric nanostructured powder**

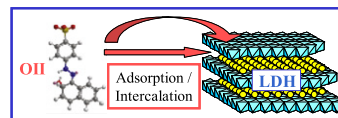
Silvania Lanfredi, Diego H.M. Gênova, Iara A.O. Brito, Alan R.F. Lima and Marcos A.L. Nobre  
page 990



Representation of the unit cell of the NaSr<sub>2</sub>Nb<sub>5</sub>O<sub>15</sub> powder. Nb<sup>5+</sup> cations are differentiated as Nb(I) and Nb(II). [Nb(I)O<sub>6</sub>] octahedral sites are represented by yellow color and [Nb(II)O<sub>6</sub>] by blue ones.

**Thermodynamical and structural insights of orange II adsorption by Mg<sub>R</sub>AlNO<sub>3</sub> layered double hydroxides**

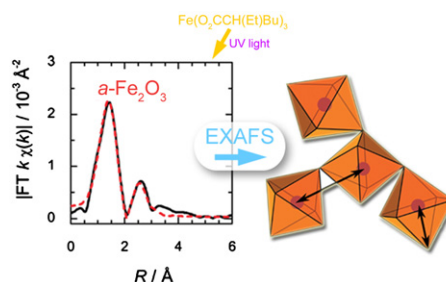
Mohamed Mustapha Bouhent, Zoubir Derriche, Renaud Denoyel, Vanessa Prevot and Claude Forano  
page 1016



Structural and thermodynamical insight of adsorption/Intercalation of OII in Mg<sub>R</sub>Al LDH.

**X-ray absorption fine structure study of amorphous metal oxide thin films prepared by photochemical metalorganic deposition**

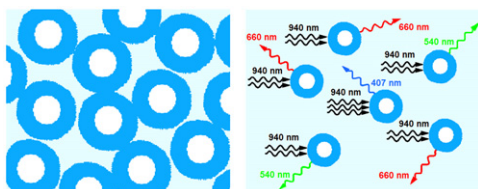
Simon Trudel, E. Daryl Crozier, Robert A. Gordon, Peter S. Budnik and Ross H. Hill  
page 1025



Using X-ray absorption fine structure spectroscopy, the oxidation state and local order of metal oxides produced from the solid-state photochemical decomposition of metal 2-ethylhexanoates (metal = Co, Fe, Cr) is presented.

**Transparent oxyfluoride glass ceramics co-doped with Er<sup>3+</sup> and Yb<sup>3+</sup> – Crystallization and upconversion spectroscopy**

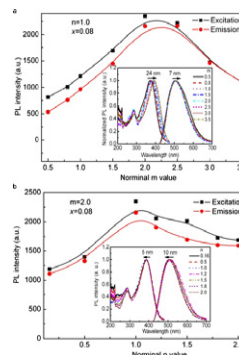
I. Gugov, M. Müller and C. Rüssel  
page 1001



A highly viscous shell (shown in the picture in dark blue) is build around the growing crystal (white circles). When the shell's *T<sub>g</sub>* approaches the annealing temperature, the crystal growth is fully suppressed for kinetic reasons. The upconversion luminescence, resulting from the simultaneous absorption of two and even three infrared photons, is depicted schematically in the right part of the figure.

**Optical properties of green-blue-emitting Ca-α-Sialon: Ce<sup>3+</sup>, Li<sup>+</sup> phosphors for white light-emitting diodes (LEDs)**

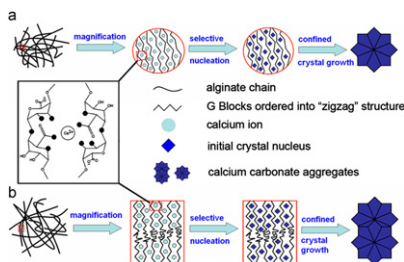
Hui-Li Li, Guo-Hong Zhou, Rong-Jun Xie, Naoto Hirosaki, Xiao-Jun Wang and Zhuo Sun  
page 1036



Dependence of photoluminescence intensity and normalized photoluminescence spectra (the inset) of Ca-α-Sialon:Ce<sup>3+</sup>, Li<sup>+</sup> on the host lattice composition: (a) *m* value and (b) *n* value.

**Alginate hydrogel-mediated crystallization of calcium carbonate**

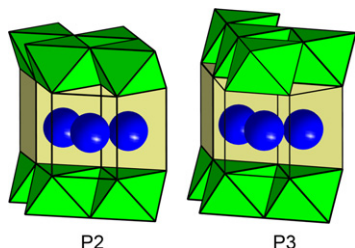
Yufei Ma and Qingling Feng  
page 1008



Schematic illustration of the growth of calcite aggregates with different morphologies obtained from (a) Low G alginate gels and (b) High G alginate gels.

## Preparation, crystal structures and rapid hydration of P2- and P3-type sodium chromium antimony oxides

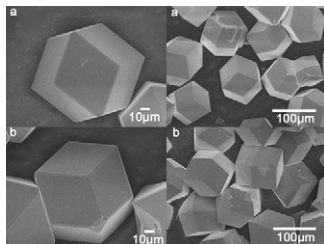
A.A. Pospelov and V.B. Nalbandyan  
*page 1043*



Polyhedral presentation of layered structures of  $\text{Na}_x[\text{Cr}_{(1+x)/2}\text{Sb}_{(1-x)/2}]\text{O}_2 \cdot (\text{Cr,Sb})\text{O}_6$  octahedra are green. Part of the sodium prisms are open to show short distances between sodium sites which cannot be occupied simultaneously.

## Mild hydrothermal synthesis and ferrimagnetism of $\text{Pr}_3\text{Fe}_5\text{O}_{12}$ and $\text{Nd}_3\text{Fe}_5\text{O}_{12}$ garnets

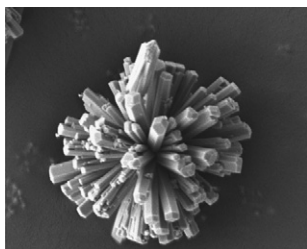
Li Guo, Keke Huang, Yan Chen, Guanghua Li, Lin Yuan, Wen Peng, Hongming Yuan and Shouhua Feng  
*page 1048*



The two single crystals  $\text{Pr}_3\text{Fe}_5\text{O}_{12}$  (a) and  $\text{Nd}_3\text{Fe}_5\text{O}_{12}$  (b) were successfully synthesized via mild hydrothermal route.

## Synthesis, characterization and photocatalytic properties of novel zinc germanate nano-materials

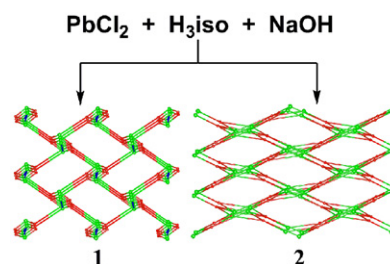
Venkata Bharat Ram Boppana, Nathan D. Hould and Raul F. Lobo  
*page 1054*



Zinc germanate materials were synthesized possessing unique morphologies dependent on the hydrothermal synthesis conditions in the absence of surfactant, catalyst or template. These novel materials are characterized and evaluated for their photocatalytic activities.

## Two lead(II) 2,4-dioxo-1,2,3,4-tetrahydropyrimidine-5-carboxylate complexes exhibiting different topologies and fluorescent properties

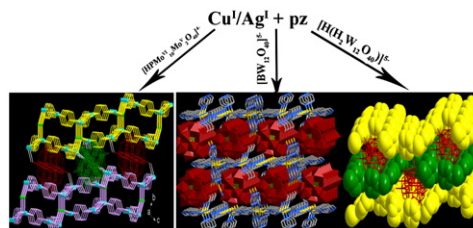
Zilu Chen, Jiehua Yan, Huihui Xing, Zhong Zhang and Fupei Liang  
*page 1063*



The reactions of  $\text{PbCl}_2$  with 2,4-dioxo-1,2,3,4-tetrahydropyrimidine-5-carboxylic acid ( $\text{H}_3\text{iso}$ ) gave two complexes  $[\text{Pb}(\text{H}_2\text{iso})_2(\text{H}_2\text{O})]_n$  (1) and  $[\text{Pb}(\text{Hiso})(\text{H}_2\text{O})]_n$  (2), which display different topologies and fluorescent properties.

## Polyoxometalate immobilization in $\text{Cu}^{\text{I}}/\text{Ag}^{\text{I}}\text{-pz}$ porous coordination polymers: The influences of them on the structural properties of frameworks

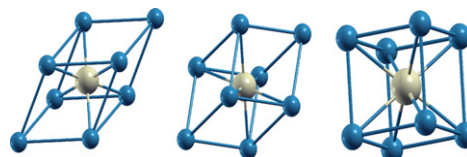
Min Zhu, Jun Peng, Hai-Jun Pang, Peng-Peng Zhang, Yuan Chen, Dan-Dan Wang, Ming-Guan Liu and Yong-Hui Wang  
*page 1070*



The choice of the particular Keggin template is shown to influence the structural properties of the Cu/Ag PCPs. Their photocatalytic activities have been studied.

## The pressure induced B1–B2 phase transition of alkaline halides and alkaline earth chalcogenides. A first principles investigation

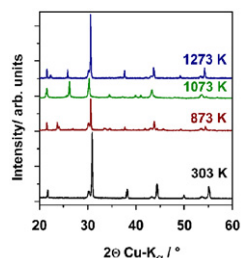
Oliver Potzel and Gerhard Taubmann  
*page 1079*



Pressure induced transition from the B1 structure (left) via the transition state (middle) to the B2 structure (right).

### In-situ X-ray diffraction study of carbonate formation and decomposition in perovskite-type BCFZ

Konstantin Efimov, Oliver Czuprat and Armin Feldhoff  
page 1085

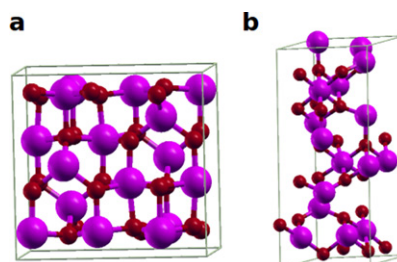


In-situ XRD of BCFZ powder in the atmosphere containing 50% CO<sub>2</sub> and 50% N<sub>2</sub> at different temperatures showing formation of BaCO<sub>3</sub> and their phase transition.

### Direct comparison between two $\gamma$ -alumina structural models by DFT calculations

Ary R. Ferreira, Mateus J.F. Martins, Elena Konstantinova, Rodrigo B. Capaz, Wladimir F. Souza, Sandra Shirley X. Chiaro and Alexandre A. Leitão

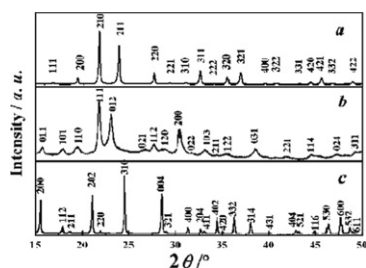
page 1105



Two  $\gamma$ -Alumina bulk models selected in this work for a comparison focusing in the electronic structure and thermodynamics of the systems. (a) The nonspinel model and (b) the spinel-like model.

### Hydrothermal synthesis and thermal properties of a novel cubic ZrW<sub>1.80</sub>V<sub>0.20</sub>O<sub>7.90</sub> solid solution

Xi Chen, Xuebin Deng, Hui Ma, Juzhou Tao and Xinhua Zhao  
page 1090

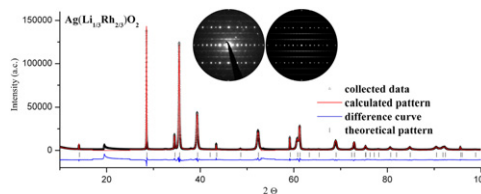


A novel cubic ZrW<sub>1.80</sub>V<sub>0.20</sub>O<sub>7.90</sub> solid solution (a) was synthesized through its metastable orthorhombic phase (b) as the dehydration product of hydrate precursor ZrW<sub>1.80</sub>V<sub>0.20</sub>O<sub>6.90</sub>(OH)<sub>2.00</sub>(H<sub>2</sub>O)<sub>2.00</sub> (c).

### On AgRhO<sub>2</sub>, and the new quaternary delafossites AgLi<sub>1/3</sub>M<sub>2/3</sub>O<sub>2</sub>, syntheses and analyses of real structures

V. Todorova, A. Leineweber, L. Kienle, V. Duppel and M. Jansen

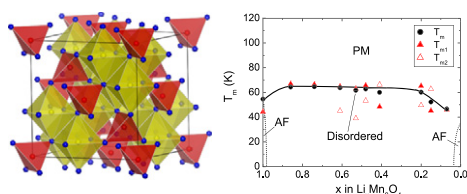
page 1112



Two new quaternary delafossite type oxides with the general formula Ag(Li<sub>1/3</sub>M<sub>2/3</sub>)O<sub>2</sub>, M = Rh, Ir, have been synthesized, and their structures characterized. The real structures of the quaternary delafossites have been revealed, which has allowed to fully explain the diffuse scattering as observed in X-ray powder diffraction.

### Magnetic properties of the chemically delithiated Li<sub>x</sub>Mn<sub>2</sub>O<sub>4</sub> with 0.07 ≤ x ≤ 1

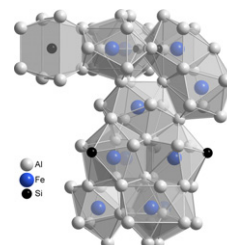
Kazuhiko Mukai, Jun Sugiyama, Kazuya Kamazawa, Yutaka Ikedo, Daniel Andreica and Alex Amato  
page 1096



Magnetic phase diagram of the chemically delithiated spinel Li<sub>x</sub>Mn<sub>2</sub>O<sub>4</sub> determined by magnetic susceptibility ( $\chi$ ) and muon spin rotation/relaxation ( $\mu$ SR) measurements.

### X-rays structural analysis and thermal stability studies of the ternary compound $\alpha$ -AlFeSi

J. Roger, F. Bossette and J.C. Viala  
page 1120

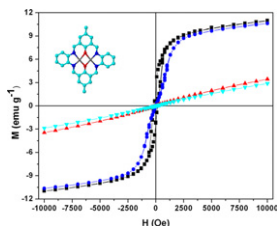


Partial representation of the crystal structure of the  $\alpha$ -Al<sub>7.1</sub>Fe<sub>2</sub>Si compound.



**Magnetic behavior of MnPS<sub>3</sub> phases intercalated by [Zn<sub>2</sub>L]<sup>2+</sup> (LH<sub>2</sub>: macrocyclic ligand obtained by condensation of 2-hydroxy-5-methyl-1,3-benzenedicarbaldehyde and 1,2-diaminobenzene)**

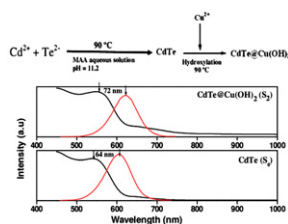
E. Spodine, P. Valencia-Gálvez, P. Fuentealba, J. Manzur, D. Ruiz, D. Venegas-Yazigi, V. Paredes-García, R. Cardoso-Gil, W. Schnelle and R. Kniep  
*page 1129*



Microwave assisted synthesis was used to obtain an intercalated MnPS<sub>3</sub> phase with a binuclear Zn(II) macrocyclic complex. A comparative magnetic study of the composites obtained by assisted microwave and traditional synthetic methods is reported.

**CdTe@Cu(OH)<sub>2</sub> nanocomposite: Aqueous synthesis and characterization**

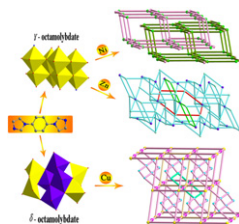
M.S. Abd El-sadek and S. Moorthy Babu  
*page 1135*



Schematic of aqueous synthesis route for CdTe@Cu(OH)<sub>2</sub> nanocomposite and The Stokes shift of CdTe nanocrystals and CdTe@Cu(OH)<sub>2</sub> Nanocomposites, (CdTe: emission at 605 nm, CdTe@Cu(OH)<sub>2</sub>: emission at 621 nm).

**A series of POM-based entangled frameworks with the rigid ligand 1,4-bis(1-imidazolyl)benzene and different isomers of octamolybdate**

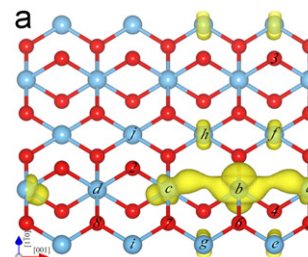
Hong-Ying Zang, Dong-Ying Du, Shun-Li Li, Ya-Qian Lan, Guang-Sheng Yang, Li-Kai Yan, Kui-Zhan Shao and Zhong-Min Su  
*page 1141*



With BIMB ligand, we have obtained and characterized three novel POM-based entangled hybrid compounds. Compound 1 is a 2-fold interpenetration 3D framework; 2 and 3 exhibit self-penetrating 3D polycatenated frameworks.

**First-principles study of the electronic and magnetic properties of oxygen-deficient rutile TiO<sub>2</sub>(1 1 0) surface**

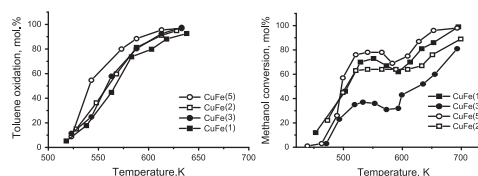
Jibao Lu, Kesong Yang, Hao Jin, Ying Dai and Baibiao Huang  
*page 1148*



The study investigates the magnetic properties of the oxygen-deficient rutile TiO<sub>2</sub>(1 1 0) surface from first principle calculations. The adjacent oxygen vacancies form a ferromagnetic arrangement due to the double exchange interaction.

**Nanosized copper ferrite materials: Mechanochemical synthesis and characterization**

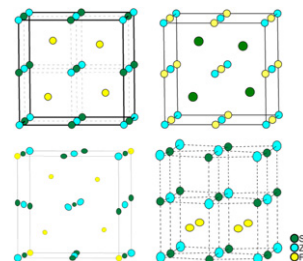
Elina Manova, Tanya Tsoncheva, Daniela Paneva, Margarita Popova, Nikolay Velinov, Boris Kunev, Krassimir Tenchev and Ivan Mitov  
*page 1153*



It is demonstrated that the catalytic behavior of the obtained copper ferrites depends not only on their initial phase composition, but on the concomitant phase transformations by the influence of the reaction medium.

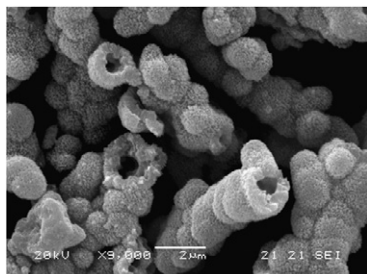
**Half-Heusler phase related structural perturbations near stoichiometric composition FeZnSb**

Ding-Bang Xiong and Yufeng Zhao  
*page 1159*



Three types of half-Heusler structure related subunit are identified in the vicinity of the equiatomic composition FeZnSb in the Fe-Zn-Sb system.

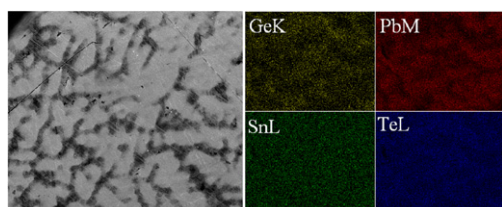
**Morphology-controlled synthesis and novel microwave electromagnetic properties of hollow urchin-like chain Fe-doped MnO<sub>2</sub> under 10 T high magnetic field**  
 Duan Yuping, Zhang Jia, Jing Hui and Liu Shunhua  
*page 1165*



Fe-doped MnO<sub>2</sub> with a hollow sea urchin-like ball chain shape was first synthesized in a high magnetic field of 10 T via a simple chemical process.

**Thermoelectric and microstructural properties of Pb<sub>0.9-x</sub>Sn<sub>0.1</sub>Ge<sub>x</sub>Te compounds prepared by spinodal decomposition**

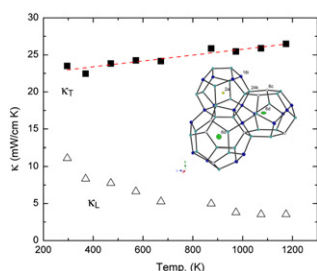
M. Søndergaard, M. Christensen, S. Johnsen, C. Stiewe, T. Dasgupta, E. Mueller and B.B. Iversen  
*page 1172*



Spinodal decomposition in the GeTe-SnTe-PbTe system demonstrated by SEM and EXS images.

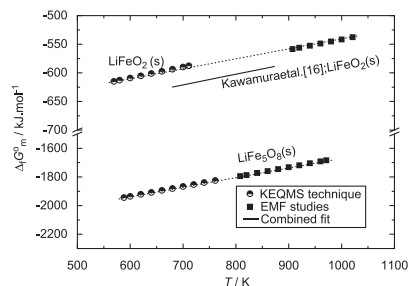
**Crystal structure, characterization and thermoelectric properties of the type-I clathrate Ba<sub>8-y</sub>Sr<sub>y</sub>Al<sub>14</sub>Si<sub>32</sub> (0.6 ≤ y ≤ 1.3) prepared by aluminum flux**

John H. Roudebush, Eric S. Toberer, Håkon Hope, G. Jeffrey Snyder and Susan M. Kauzlarich  
*page 1176*



The inorganic type-I clathrate phase with nominal composition Ba<sub>7</sub>Sr<sub>1</sub>Al<sub>14</sub>Si<sub>32</sub> has been prepared by Al flux. Single crystal diffraction at 90 and 12 K reveal that the framework is fully occupied with the cation sites nearly fully occupied. The lattice thermal conductivity is low thereby suggesting further optimization of the carrier concentration will lead to a high *zT*.

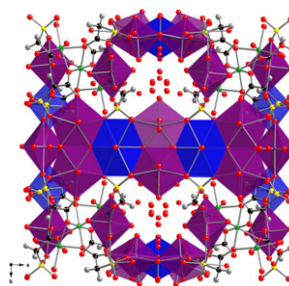
**Thermodynamic studies on lithium ferrites**  
 S.K. Rakshit, S.C. Parida, Y.P. Naik, Ziley Singh Chaudhary and V. Venugopal  
*page 1186*



Comparison of  $\Delta_r G_m^{\circ}(T)$  of lithium ferrites determined using different techniques.

**Uranyl carboxyphosphonates that incorporate Cd(II)**

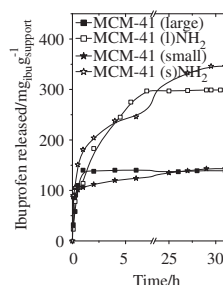
Andrea N. Alsobrook, Evgeny V. Alekseev, Wulf Depmeier and Thomas E. Albrecht-Schmitt  
*page 1195*



A view of part of the cubic structure of Cd<sub>2</sub>[(UO<sub>2</sub>)<sub>6</sub>(PO<sub>3</sub>CH<sub>2</sub>CO<sub>2</sub>)<sub>3</sub>O<sub>3</sub>(OH)(H<sub>2</sub>O)<sub>2</sub>] · 16H<sub>2</sub>O.

**Effect of amine functionalization of spherical MCM-41 and SBA-15 on controlled drug release**

A. Szegedi, M. Popova, I. Goshev and J. Mihály  
*page 1201*

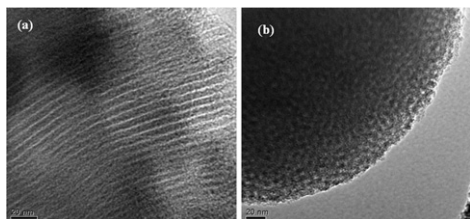


Ibuprofen delivery from the parent and amino-modified spherical MCM-41 materials with 100 nm (small) and 500 nm (large) particle sizes.

## Periodic mesoporous organosilicas with co-existence of diurea and sulfanilamide as an effective drug delivery carrier

Surendran Parambadath, Vijay Kumar Rana, Santha Moorthy, Sang-Wook Chu, Shin-Kyu Park, Daewoo Lee, Giju Sung and Chang-Sik Ha

page 1208

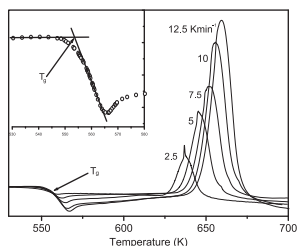


We report the synthesis of new periodic mesoporous organosilicas (PMOs) with the co-existence of diurea and sulfanilamide-bridged organosilica that are potentially useful for controlled drug release system.

## Thermally stimulated crystallization of $(20-x)\text{LiO}_2-80\text{TeO}_2-x\text{WO}_3$ glass system

S.M. Sidel, W.A. Capanema Jr., E.B. Araujo, J.C.S. Moraes and K. Yukimitu

page 1216

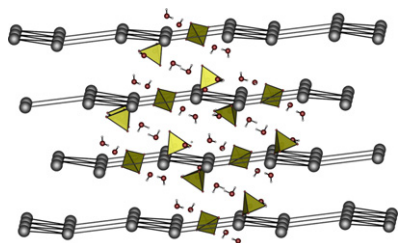


Typical DSC thermogram for TLW glasses for different heating rates with insert graphic showing as the  $T_g$  is evaluated.

## Syntheses, crystal structures and optical spectroscopy of $\text{Ln}_2(\text{SO}_4)_3 \cdot 8\text{H}_2\text{O}$ ( $\text{Ln} = \text{Ho}, \text{Tm}$ ) and $\text{Pr}_2(\text{SO}_4)_3 \cdot 4\text{H}_2\text{O}$

Karolina Kazmierczak and Henning A. Höpfe

page 1221

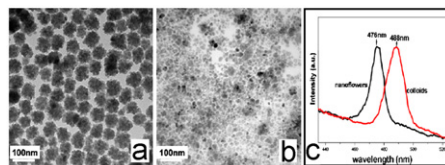


In the lanthanide sulphate octahydrates the cations form slightly undulated layers. Between the layers are voids in which sulphate tetrahedra and water molecules are located. The holmium compound exhibits an Alexandrite effect.

## Controlled synthesis of monodispersed $\text{AgGaS}_2$ 3D nanoflowers and the shape evolution from nanoflowers to colloids

Yanping Yuan, Jiantao Zai, Yuezeng Su and Xuefeng Qian

page 1227

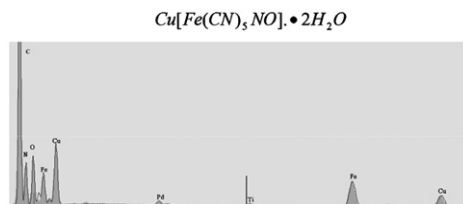


Various  $\text{AgGaS}_2$  nanocrystals with different morphologies and sizes including 3D nanoflowers (a) and colloids (b) were synthesized in mixed solvent reaction system and their PL spectra was researched (c).

## Study of carbon dioxide adsorption on a Cu-nitroprusside polymorph

R. Roque-Malherbe, C. Lozano, R. Polanco, F. Marquez, F. Lugo, A. Hernandez-Maldonado and J.N. Primera-Pedrozo

page 1236

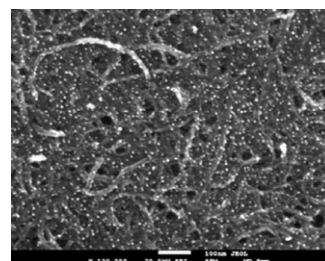


The adsorption space of a very well characterized Cu-nitroprusside polymorph, applying carbon dioxide as probe molecule, was studied.

## Selective decoration of nickel and nickel oxide nanocrystals on multiwalled carbon nanotubes

P. Martis, B.R. Venugopal, J. Delhalle and Z. Mekhalif

page 1245

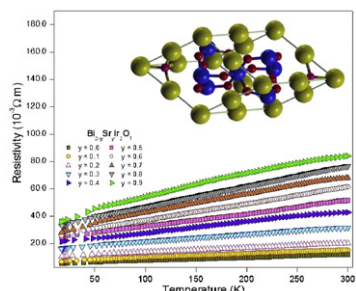


Nickel and nickel oxide nanocrystals were selectively and homogeneously decorated on multiwalled carbon nanotubes using nickel acetylacetonate, as a precursor in a simple and efficient route.

Continued

## Synthesis and structural analysis of $\text{Bi}_{2-y}\text{Sr}_y\text{Ir}_2\text{O}_7$ , a new pyrochlore solid solution

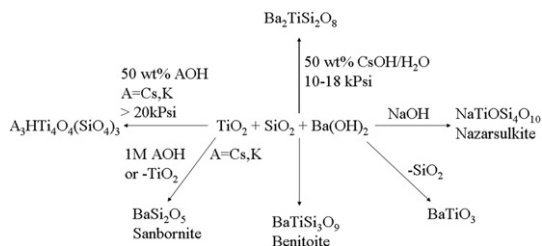
Carlos Cosio-Castaneda, Pablo de la Mora and Gustavo Tavizon  
page 1251



Electrical behavior of the  $\text{Bi}_{2-y}\text{Sr}_y\text{Ir}_2\text{O}_7$  solid solution.

## Hydrothermal synthesis of compounds in the fersite mineral family ( $\text{Ba}_2\text{TiSi}_2\text{O}_8$ )

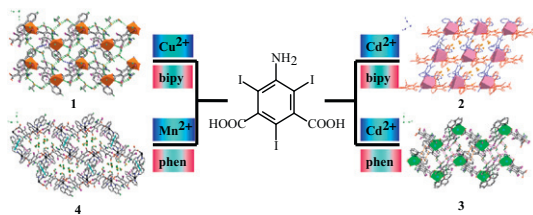
Edward E. Abbott, Matthew Mann and Joseph W. Kolis  
page 1257



Materials crystallizing from the hydrothermal  $\text{TiO}_2 + \text{SiO}_2 + \text{Ba}(\text{OH})_2$  system.

## Synthesis, crystal structures and characterization of four coordination polymers based on 5-amino-2,4,6-triiodoisophthalic acid

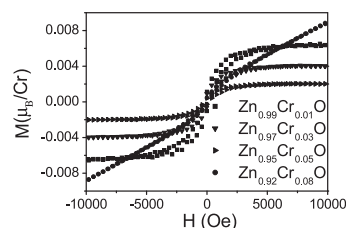
Kou-Lin Zhang, Yan Chang, Jing-Bo Zhang, Li-Min Yuan, Ye Deng, Guo-Wang Diao and Seik Weng Ng  
page 1263



The synthesis, crystal structures and characterization of one 1D homochiral coordination polymer and three achiral 1D coordination polymers with 5-amino-2,4,6-triiodoisophthalic acid ( $\text{H}_2\text{ATIBDC}$ ) are reported.

## Intrinsic ferromagnetic properties in Cr-doped ZnO diluted magnetic semiconductors

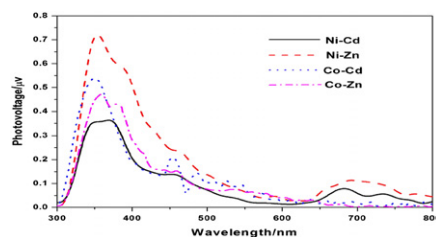
Yang Liu, Yanting Yang, Jinghai Yang, Qingfeng Guan, Huilian Liu, Lili Yang, Yongjun Zhang, Yaxin Wang, Maobin Wei, Xiaoyan Liu, Lianhua Fei and Xin Cheng  
page 1273



As can be seen from the magnetic hysteresis loops of  $\text{Zn}_{1-x}\text{Cr}_x\text{O}$  ( $x=0.01, 0.03, 0.05, \text{ and } 0.08$ ) at room temperature under 10 KOe, the samples show good high- $T_c$  ferromagnetism with Cr concentration of less than 5 at%.

## A series of $M-M'$ heterometallic coordination polymers: syntheses, structures and surface photoelectric properties ( $M=\text{Ni}/\text{Co}$ , $M'=\text{Cd}/\text{Zn}$ )

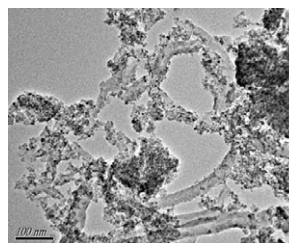
Lei Li, Shu-Yun Niu, Jing Jin, Qin Meng, Yu-Xian Chi, Yong-Heng Xing and Guang-Ning Zhang  
page 1279



Four heterometallic polymers, Ni-Cd, Ni-Zn, Co-Cd, Co-Zn, were synthesized and characterized. The photoelectric properties of heterometallic polymers were discussed by SPS. The introduction of heterometallic ions will broaden the SPS of corresponded monometallic complexes.

## Synthesis of carbon nanotube/anatase titania composites by a combination of sol-gel and self-assembly at low temperature

Changyuan Hu, Rongfa Zhang, Junhuai Xiang, Tingzhi Liu, Wenkui Li, Mingsheng Li, Shuwang Duo and Fei Wei  
page 1286



MWCNT/anatase  $\text{TiO}_2$  composites have been prepared by a combination of a sol-gel method and a self-assembly technique in one step at low temperature without high temperature calcination.

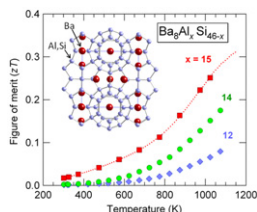


## Phase stability and chemical composition dependence of the thermoelectric properties of the type-I clathrate

### $\text{Ba}_8\text{Al}_x\text{Si}_{46-x}$ ( $8 \leq x \leq 15$ )

Naohito Tsujii, John H. Roudebush, Alex Zevalkink, Catherine A. Cox-Uvarov, G. Jeffery Snyder and Susan M. Kauzlarich

page 1293

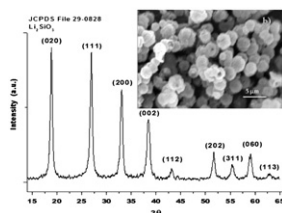


$\text{Ba}_8\text{Al}_x\text{Si}_{46-x}$  is found to crystallize in the type-I clathrate structure without framework deficiency for  $8 \leq x \leq 15$ . Thermoelectric figure of merit reaches  $zT=0.24$  for  $x=15$  at 1000 K, and calculation predicts  $zT \sim 0.7$  for a lower carrier concentration.

## Surfactant-assisted hydrothermal crystallization of nanostructured lithium metasilicate ( $\text{Li}_2\text{SiO}_3$ ) hollow spheres: (I) Synthesis, structural and microstructural characterization

J. Ortiz-Landeros, M.E. Contreras-García, C. Gómez-Yáñez and H. Pfeiffer

page 1304

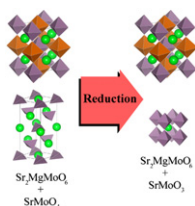


$\text{Li}_2\text{SiO}_3$  was synthesized using a hydrothermal process in the presence of different surfactants.  $\text{Li}_2\text{SiO}_3$  powders were composed of uniform micrometric particles with a hollow sphere morphology and nanostructured walls.

## Role of $\text{SrMoO}_4$ in $\text{Sr}_2\text{MgMoO}_6$ synthesis

S. Vasala, H. Yamauchi and M. Karppinen

page 1312

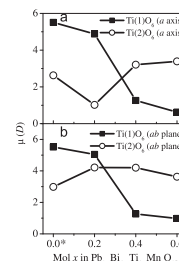


$\text{SrMoO}_4$  is formed at low temperatures during the synthesis of  $\text{Sr}_2\text{MgMoO}_6$ , which prevents the volatilization of Mo from typical precursor mixtures of this promising SOFC anode material.  $\text{SrMoO}_4$  is insulating and it is often found as an impurity in  $\text{Sr}_2\text{MgMoO}_6$  samples. It is however readily reduced to highly conducting  $\text{SrMoO}_3$ . Composites of  $\text{Sr}_2\text{MgMoO}_6$  and  $\text{SrMoO}_3$  show increased electrical conductivities compared to pure  $\text{Sr}_2\text{MgMoO}_6$  under the reductive operation conditions of an SOFC anode.

## Aurivillius phases of $\text{PbBi}_4\text{Ti}_4\text{O}_{15}$ doped with $\text{Mn}^{3+}$ synthesized by molten salt technique: Structure, dielectric, and magnetic properties

Zulhadjri, B. Prijamboedi, A.A. Nugroho, N. Mufti, A. Fajar, T.T.M. Palstra and Ismunandar

page 1318

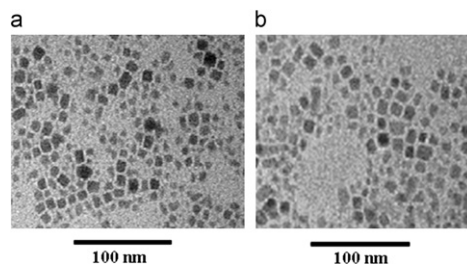


The dipole moment of  $\text{TiO}_6$  dependence of  $x$  in  $\text{Pb}_{1-x}\text{Bi}_{4+x}\text{Ti}_{4-x}\text{Mn}_x\text{O}_{15}$  ( $0 \leq x \leq 0.6$ ): (a) along  $a$ -axis and (b) on the  $ab$  plane. This figure indicated that polarization in the  $ab$ -plane contribute to the total polarization.

## Dye-coated europium monosulfide

Srotoswini Kar, Norman R. Dollahon and Sarah L. Stoll

page 1324

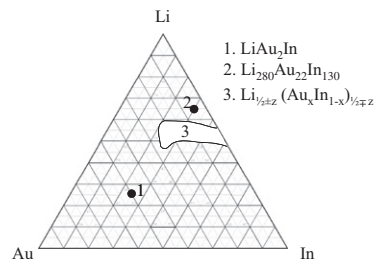


EuS nanoparticles a. before coating and b. after coating.

## New real ternary and pseudoternary phases in the Li-Au-In system

G.S. Dmytriv, V.V. Pavlyuk, H. Pauly, J. Eckert and H. Ehrenberg

page 1328

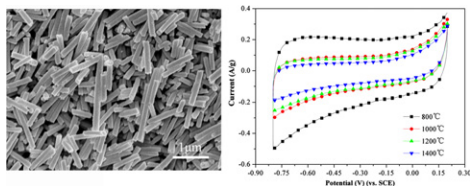


Two real ternary compounds (1: Heusler phase, 2:  $n=6$  variant of a cubic  $n \times n \times n$  W-type superstructure) together with one pseudoternary compound (3: Zintl phase with its broad homogeneity range).

Continued

## Fabrication of TiN nanorods by electrospinning and their electrochemical properties

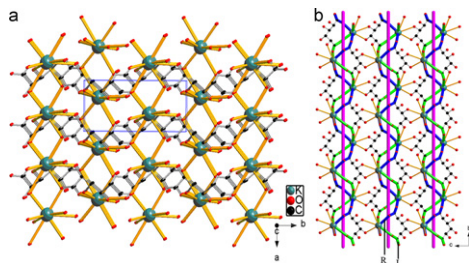
Dongfei Sun, Junwei Lang, Xingbin Yan, Litian Hu and Qunji Xue  
page 1333



TiN nanorods were prepared using electrospinning followed by thermolysis under different atmospheres. Electrochemical properties of the TiN nanorods showed strong dependence on the nitridation temperature.

## Two new frameworks of potassium saccharate obtained from acidic and alkaline solution

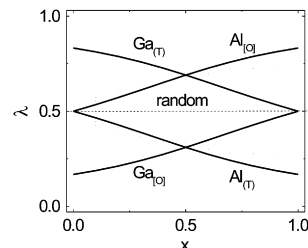
Yao-Kang Lv, Yun-Long Feng, Ji-Wei Liu and Zhan-Guo Jiang  
page 1339



Two K(I) complexes based on D-saccharic acid ( $H_2sac$ ),  $[K(Hsac)]_n$  (**1**) and  $[K_2(sac)]_n$  (**2**) were obtained and characterized. Electrochemical studies indicate the potential use of **2** in Ni–MH battery.

## Mechanochemical–thermal preparation and structural studies of mullite-type $Bi_2(Ga_xAl_{1-x})_4O_9$ solid solutions

K.L. Da Silva, V. Sepelák, A. Düvel, A. Paesano Jr., H. Hahn, F.J. Litterst, P. Heitjans and K.D. Becker  
page 1346



Mullite-type  $Bi_2(Ga_xAl_{1-x})_4O_9$  mixed crystals ( $0 \leq x \leq 1$ ) prepared by a combined mechanochemical–thermal route possess a non-random distribution of  $Ga^{3+}$  and  $Al^{3+}$  cations over the sites of tetrahedral (T) and octahedral [O] coordination, characterized by the preference of  $Ga^{3+}$  ( $Al^{3+}$ ) for tetrahedral (octahedral) sites.

## Corrigendum

### Mechanochemical–thermal preparation and structural studies of mullite-type $Bi_2(Ga_xAl_{1-x})_4O_9$ solid solutions

Yan Wang, Bo Zou, Li-Na Xiao, Ning Jin, Yu Peng, Feng-Qing Wu, Hong Ding, Tie-Gang Wang, Zhong-Min Gao, Da-Fang Zheng, Xiao-Bing Cui and Ji-Qing Xu  
page 1353

### Author inquiries

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