

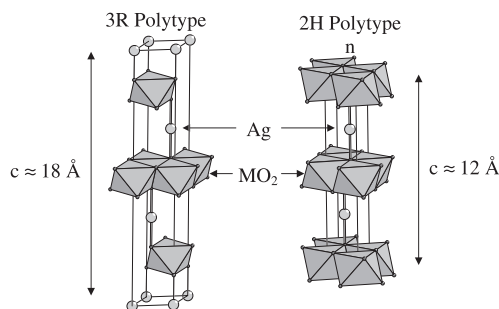
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Regular Articles

Topotactic synthesis, structure and magnetic properties of a new hexagonal polytype of silver cobaltate(III) $\text{AgCoO}_{2+\delta}$

Hervé Muguerra, Claire Colin, Michel Anne, Marc-Henri Julien and Pierre Strobel

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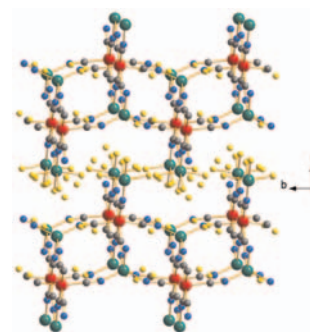
Comparison of the structures of high-temperature AgCoO_2 (left, 3R structure) and of new $\text{AgCoO}_{2+\delta}$ (IE) (right, 6H structure). The latter is obtained topotactically from $\text{Na}_{0.7}\text{CoO}_2$ by ion exchange in molten nitrates. Detailed studies showed that $\text{AgCoO}_{2+\delta}$ (IE) is slightly over-stoichiometric in oxygen ($\delta=0.06$).

Regular Articles—Continued

Porous framework of $T_2[\text{Fe}(\text{CN})_6] \cdot x\text{H}_2\text{O}$ with $T = \text{Co}, \text{Ni}, \text{Cu}, \text{Zn}$, and H_2 storage

M. Avila, L. Reguera, J. Rodríguez-Hernández, J. Balmaseda and E. Reguera

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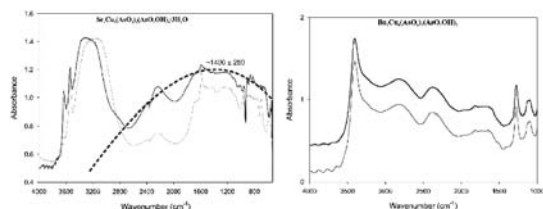


Structure of stacked layers for $\text{CO}_2[\text{Fe}(\text{CN})_6] \cdot x\text{H}_2\text{O}$.

Synthesis, crystal structure, infrared and Raman spectra of $\text{Sr}_4\text{Cu}_3(\text{AsO}_4)_2(\text{AsO}_3\text{OH})_4 \cdot 3\text{H}_2\text{O}$ and $\text{Ba}_2\text{Cu}_4(\text{AsO}_4)_2(\text{AsO}_3\text{OH})_3$

Tamara Đorđević and Ljiljana Karanović

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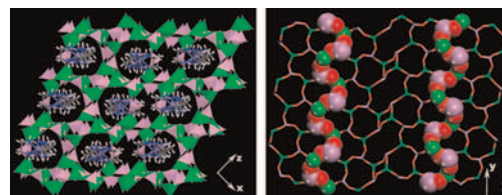


The two new compounds, $\text{Sr}_4\text{Cu}_3(\text{AsO}_4)_2(\text{AsO}_3\text{OH})_4 \cdot 3\text{H}_2\text{O}$ (**1**) and $\text{Ba}_2\text{Cu}_4(\text{AsO}_4)_2(\text{AsO}_3\text{OH})_3$ (**2**), were synthesized under hydrothermal conditions. They represent previously unknown structure types and are the first compounds synthesized in the systems $\text{SrO}/\text{BaO}-\text{CuO}-\text{As}_2\text{O}_5-\text{H}_2\text{O}$. Their crystal structures were determined by single-crystal X-ray diffraction [space group $C2/c$, $a=18.536(4)\text{Å}$, $b=5.179(1)\text{Å}$, $c=24.898(5)\text{Å}$, $\beta=93.67(3)^\circ$, $V=2344.0(8)\text{Å}^3$, $Z=4$ for **1**; space group $P4_2/n$, $a=7.775(1)\text{Å}$, $c=13.698(3)\text{Å}$, $V=828.1(2)\text{Å}^3$, $Z=2$ for **2**]. Vibrational spectra (FTIR and Raman) of both compounds are described. The spectroscopic manifestation of the very short hydrogen bond, where the donor and acceptor are crystallographically different in **1**, and ABC-like spectra in **2** were discussed.

Solvothermal synthesis and structure of a novel 3D zincophosphite $[\text{Co}(\text{en})_3][\text{Zn}_4(\text{HPO}_3)_5(\text{H}_2\text{PO}_3)]$ containing helical chains

Jian Qiao, Lirong Zhang, Li Liu, Yang Yu, Minghui Bi, Qisheng Huo and Yunling Liu

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A new three-dimensional zincophosphite containing left-handed and right-handed helical chains has been solvothermally synthesized using $\text{Co}(\text{en})_3\text{Cl}_3$ as the structure-directing agent.

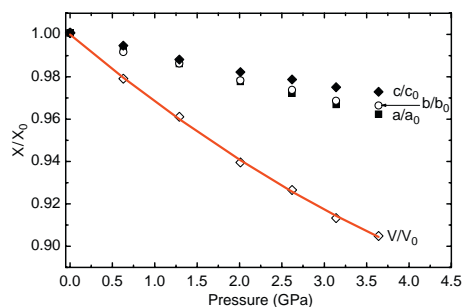
Continued

High-pressure single-crystal X-ray diffraction of Ti_2SeO_4

Andrzej Grzechnik, Tomasz Breczewski and

Karen Friese

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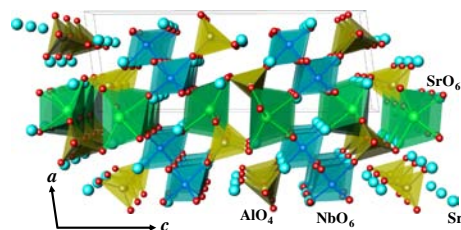


Pressure dependence of normalized lattice parameters and unit-cell volumes in Ti_2SeO_4 ($Pm\bar{c}n$, $Z=4$). The solid line is the Murnaghan equation of state.

$\text{Sr}_4\text{AlNbO}_8$: A new crystal structure type determined from powder X-ray data

Eungje Lee and Seung-Tae Hong

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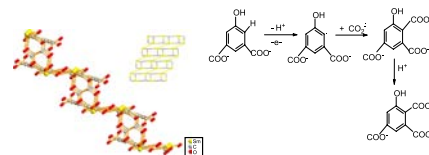


The crystal structure type of $\text{Sr}_4\text{AlNbO}_8$ is new, and may be described as a three-dimensional polyhedral network resulting from the corner-sharing of NbO_6 and SrO_6 octahedra and AlO_4 tetrahedra. Also, the other strontium atoms (Sr_2 , Sr_3 , and Sr_4) occupy the larger cavities surrounded by oxygen atoms.

In-situ carboxylation and synthesis of two novel Sm(III) coordination polymers assembled from 5-hydroxyisophthalate and nitrate, chloride in hydrothermal reaction

Yan Huang, Bing Yan and Min Shao

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Hydrothermal reactions of $\text{Sm}(\text{NO}_3)_3 \cdot 6\text{H}_2\text{O}$ or $\text{SmCl}_3 \cdot 6\text{H}_2\text{O}$ with 5-hydroxyisophthalic acid (H_2hip) have given rise to two different kinds of Sm(III) coordination polymers. Single-crystal X-ray analyses reveal that compound **1** features a novel 2D stair-like structure with oxalate and a new organic ligand, 6-hydroxy-1,2,4-benzenetricarboxylate, while compound **2** gives the normal product and displays a novel 2D layer structure. Oxalate ligands have been formed via the in-situ reductive coupling of CO_2 molecules released from the decomposition of 5-hydroxyisophthalate ligands with the reduction of NO_3^- and the new organic ligands have been formed via the in-situ carboxylation under the presence of NO_3^- .

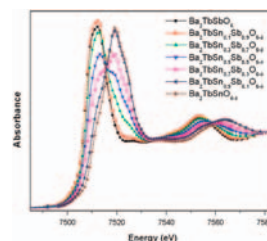
Phase and valence transitions in $\text{Ba}_2\text{LnSn}_x\text{Sb}_{1-x}\text{O}_{6-\delta}$ ($\text{Ln} = \text{Pr}$ and Tb)

Paul J. Saines, Brendan J. Kennedy, Margaret M.

Elcombe, Hugh H. Harris, Ling-Yun Jang and

Zhaoming Zhang

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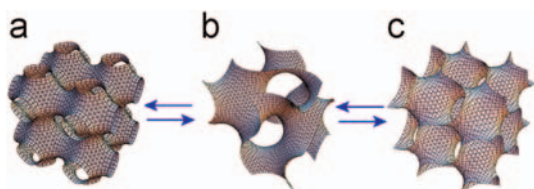


Powder diffraction and spectroscopic techniques have been used to investigate the series $\text{Ba}_2\text{LnSn}_x\text{Sb}_{1-x}\text{O}_{6-\delta}$ ($\text{Ln} = \text{Pr}$ or Tb). It was found that increased Sn^{4+} doping leads to oxidation of the Ln^{3+} cations to Ln^{4+} . The X-ray absorption near-edge structure of the Ln L_{III} -edge indicates that this oxidation state change occurs gradually such that there are few oxygen vacancies present.

Uncontrollable expansion of $\text{PbZn}_{1/3}\text{Nb}_{2/3}\text{O}_3$ - PbTiO_3 perovskite \Rightarrow pyrochlore transition during spark plasma sintering: Mechanism proposal using infinite periodic minimal surfaces

T. Hungria, A. Castro, M. Alguero and J. Galy

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The explosive phenomenon observed during the sintering of PZN-PT phase using spark plasma sintering is directly linked to the perovskite \Rightarrow pyrochlore phase transition and the volume increase related to the role of the Pb lone pairs. Infinite periodic minimal surfaces have been used to describe the structures and the phase transition.

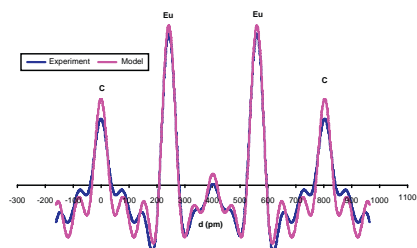
Synthesis and characterisation of a novel europium-based graphite intercalation compound

Nicolas Emery, Claire Hérold, Christine Bellouard,

Pierre Delcroix, Jean-François Marêché and

Philippe Lagrange

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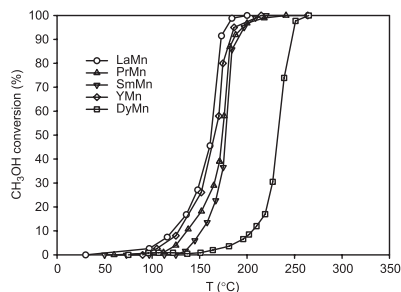


1D electronic density profiles along the c -axis of Li_xEuC_4 .

Effect of the rare earth in the perovskite-type mixed oxides $AMnO_3$ ($A = Y, La, Pr, Sm, Dy$) as catalysts in methanol oxidation

B. Levasseur and S. Kaliaguine

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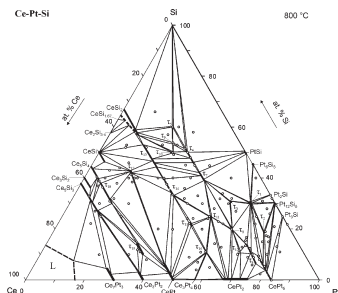


Perovskite-type mixed oxides $AMnO_3$ (with $A = Y, La, Pr, Sm, Dy$) with high specific surface area were prepared by reactive grinding. The influence of the rare earth on the two kinds of oxygen in the perovskite structure ($\alpha-O_2$ and $\beta-O_2$) was correlated with a variety of intrinsic properties of the A -site cation. Moreover, the catalytic performance of the samples for methanol oxidation was evaluated.

On the system cerium–platinum–silicon

Alexander Gribanov, Andriy Grytsiv, Esmaeil Royanian, Peter Rogl, Ernst Bauer, Gerald Giester and Yurii Seropegin

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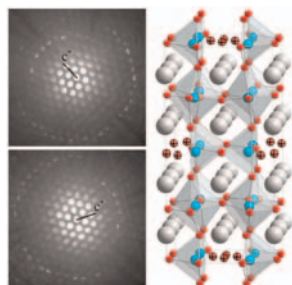


Phase relations in the ternary system Ce–Pt–Si have been established for the isothermal section at 800 °C based on X-ray powder diffraction, metallography, SEM and EMPA techniques on about 120 alloys. Nineteen ternary compounds were observed.

Crystal structure of $La_{0.4}Sr_{0.6}CoO_{2.71}$ investigated by TEM and XRD

C. Gspan, W. Grogger, B. Bitschnau, E. Bucher, W. Sitte and F. Hofer

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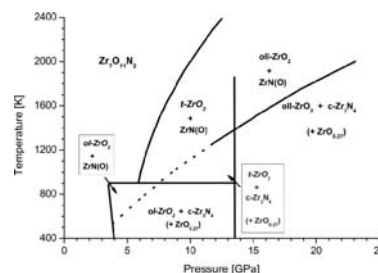


Two adjacent domains show different orientation of the c -axis of the tetragonal unit cell in the according convergent beam electron diffraction patterns.

High-pressure high-temperature behavior of nitrogen-doped zirconia

T. Locherer, D. Frost and H. Fuess

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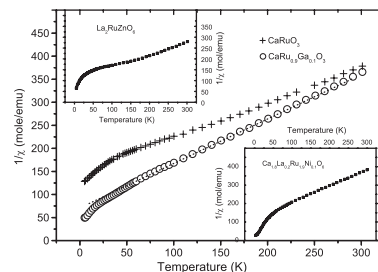


Draft for the decomposition reaction phase diagram of $Zr_7O_{11}N_2$ according to theoretical and experimental results.

Interatomic versus intraatomic Ru interactions in perovskites

Sangwon Kim, Ronald I. Dass and John B. Goodenough

Page 2989

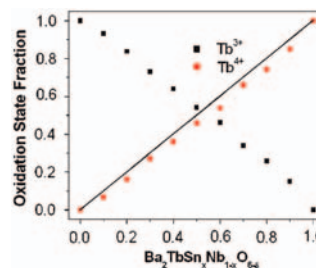


The competition between interatomic Ru–O–Ru interactions responsible for itinerant-electron ferromagnetism in $SrRuO_3$ and intraatomic spin–orbit coupling that suppresses some Ru–O–Ru magnetic interactions in $CaRuO_3$ so as to prevent long-range magnetic order has been further tested by investigating the double perovskites La_2RuZnO_6 , La_2RuCoO_6 , La_2TiCoO_6 , and the solid solution $Ca_{2-2x}La_{2x}Ru_{2-x}Co_xO_6$ ($0.0 \leq x \leq 1.0$).

Phase and valence transitions in $Ba_2LnSn_xNb_{1-x}O_{6-\delta}$

Paul J. Saines, Brendan J. Kennedy, Bernt Johannessen and Sarah Poulton

Page 2994

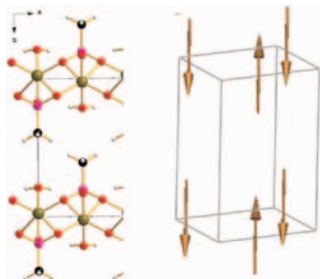


The series $Ba_2LnSn_xNb_{1-x}O_{6-\delta}$ ($Ln = Pr$ and Tb) has been investigated using powder diffraction and spectroscopic techniques. Similarly to the analogous Sb^{3+} containing compounds it was found that Sn^{4+} doping leads to the gradual oxidation of the Ln^{3+} cations to the Ln^{4+} state. Quantitative analysis of the Ln L_{II} -edge absorption spectra indicates that few or no oxygen vacancies are present.

Continued

Neutron powder diffraction study of the layer organic–inorganic hybrid iron(II) methylphosphonate-hydrate, Fe[(CD₃PO₃)(D₂O)]

Philippe Léone, Carlo Bellitto, Elvira M. Bauer, Guido Righini, Gilles André and Françoise Bourée
Page 3005

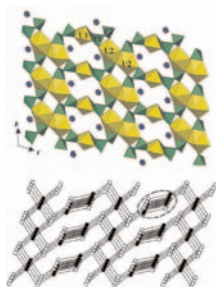


Crystal structure and magnetic structure of Fe[(CD₃PO₃)(D₂O)].

Crystal chemistry of anhydrous Li uranyl phosphates and arsenates. I. Polymorphism and structure topology:

Synthesis and crystal structures of α -Li[(UO₂)(PO₄)], α -Li[(UO₂)(AsO₄)], β -Li[(UO₂)(AsO₄)] and Li₂[(UO₂)₃(P₂O₇)₂]

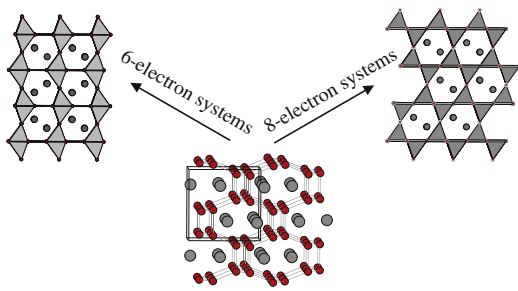
Evgeny V. Alekseev, Sergey V. Krivovichev, Thomas Malcherek and Wulf Depmeier
Page 3010



Polyhedral and topological presentation of Li₂[(UO₂)₃(P₂O₇)₂] crystal structure.

High-pressure modifications of CaZn₂, SrZn₂, SrAl₂, and BaAl₂: Implications for Laves phase structural trends

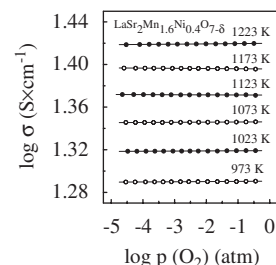
Subhadeep Kal, Emil Stoyanov, Jean-Philippe Belieres, Thomas L. Groy, Rolf Norrestam and Ulrich Häussermann
Page 3016



CeCu₂-type polar intermetallics can be transformed to Laves phases upon simultaneous application of pressure and temperature. The observed structures are controlled by the valence electron concentration.

High-temperature transport properties, thermal expansion and cathodic performance of Ni-substituted LaSr₂Mn₂O_{7- δ}

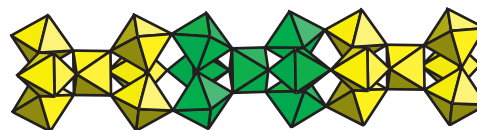
A.A. Yaremchenko, D.O. Bannikov, A.V. Kovalevsky, V.A. Cherepanov and V.V. Kharton
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The substitution of manganese with nickel in Ruddlesden–Popper-type LaSr₂Mn₂O_{7- δ} , where the solubility limit corresponds to approximately 25% Mn sites, increases phase stability at elevated temperatures and thermal expansion, and decreases unit cell volume and total conductivity. The Seebeck coefficient and conductivity of LaSr₂Mn_{1.6}Ni_{0.4}O_{7- δ} , analyzed in the oxygen partial pressure range 10⁻¹⁵–0.3 atm at 600–1270 K, display that the electronic transport is n-type and occurs via a small polaron mechanism.

An unusual hybrid fluoride featuring a [V₇F₂₇]⁶⁻ chain motif based on a pyrochlore-like building unit

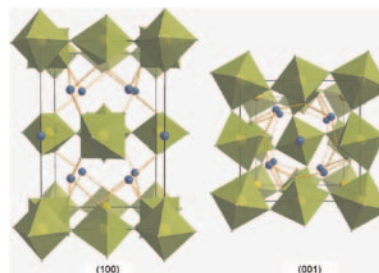
David W. Aldous, Alexandra M.Z. Slawin and Philip Lightfoot
Page 3033



A unique chain-structure vanadium(III) fluoride [C₄H₁₂N₂]₃[V₇F₂₇]⁶⁻, based on a pyrochlore-like building unit, has been prepared solvothermally. Despite antiferromagnetic interactions, no long-range magnetic order occurs above 2 K, suggesting possible frustration.

An ab initio study of possible pathways in the thermal decomposition of NaAlH₄

J.G.O. Ojwang, Rutger van Santen, Gert Jan Kramer and Xuezhi Ke
Page 3037

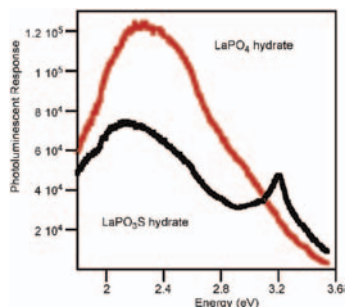


Projections of the Na₅Al₃H₁₄ structure. Na atoms are represented by small spheres. The polyhedra represents the AlH₆ moiety.

A simple aqueous metathesis reaction yields new lanthanide monothiophosphates

Nathan J. Takas, Lauren E. Slomka, Xiaocheng Yang, Nancy Giles and Jennifer A. Aitken

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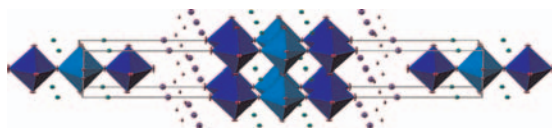


This paper describes the synthesis and characterization of two, new rare earth monothiophosphate materials, $\text{LaPO}_3\text{S} \cdot x\text{H}_2\text{O}$ and $\text{NdPO}_3\text{S} \cdot y\text{H}_2\text{O}$. Each of these was found to exist in a phase similar to the orthophosphate mineral, rhabdophane. The monothiophosphate hydrates displayed broad photoluminescence in the visible under excitation by a 325 nm laser.

Structural and magnetic characterisation of Aurivillius material $\text{Bi}_2\text{Sr}_2\text{Nb}_{2.5}\text{Fe}_{0.5}\text{O}_{12}$

E.E. McCabe and C. Greaves

Page 3051

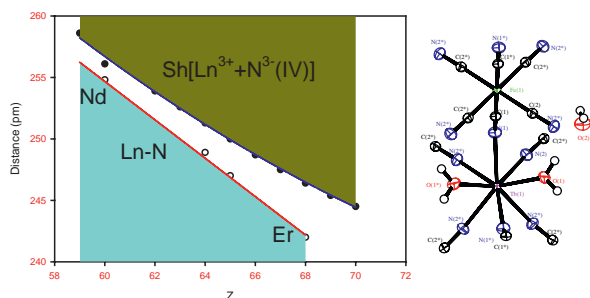


We report here the synthesis and characterisation of the Aurivillius material $\text{Bi}_2\text{Sr}_2\text{Nb}_{2.5}\text{Fe}_{0.5}\text{O}_{12}$. Combined Rietveld refinements using NPD and XRPD data have been used to investigate the structure and suggest that the material shows significant cation ordering as well as some local structural distortions. $\text{Bi}_2\text{Sr}_2\text{Nb}_{2.5}\text{Fe}_{0.5}\text{O}_{12}$ is paramagnetic in the temperature range studied.

Crystallographic and infrared spectroscopic study of bond distances in $\text{Ln}[\text{Fe}(\text{CN})_6] \cdot 4\text{H}_2\text{O}$ ($\text{Ln} = \text{lanthanide}$)

Xianju Zhou, Wing-Tak Wong, Michèle D. Faucher and Peter A. Tanner

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Crystallographic and FTIR data for $\text{Ln}[\text{Fe}(\text{CN})_6] \cdot 4\text{H}_2\text{O}$ enable the changes in $\text{Ln}-\text{O}$, $\text{Ln}-\text{N}$, $\text{C}\equiv\text{N}$ and $\text{Fe}-\text{C}$ distances to be determined and modeled across the lanthanide series.

High-throughput and microwave investigation of rare earth phosphonatoethanesulfonates— $\text{Ln}(\text{O}_3\text{P}-\text{C}_2\text{H}_4-\text{SO}_3)$

($\text{Ln} = \text{Ho, Er, Tm, Yb, Lu, Y}$)

Andreas Sonnauer and Norbert Stock

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$\text{Ln}^{3+} : \text{H}_2\text{L} : \text{NaOH}$	1:1:0	1:1:1	1:1:2	1:1:3	1:1:4	1:1:5	1:1:6	1:1:7
$\text{Ho}(\text{CH}_3\text{CO}_2)_3$	●	●	●	●	●	●	●	●
$\text{Er}(\text{NO}_3)_3$	○	●	●	●	●	●	●	●
$\text{Tm}(\text{NO}_3)_3$	○	●	●	●	●	●	●	●
YbCl_3	○	●	●	●	●	○	●	●
LuCl_3	●	●	●	●	●	●	●	●
$\text{Y}(\text{NO}_3)_3$	○	○	●	●	○	○	●	●

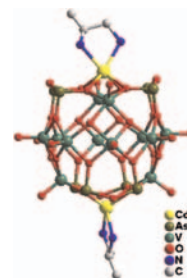
● $\text{Ln}(\text{O}_3\text{P}-\text{C}_2\text{H}_4-\text{SO}_3)$ ● $\text{Ln}(\text{OH})_3$
 ● unknown product ● X-ray amorphous ○ no precipitate

A high-throughput and microwave investigation of the System $\text{LnX}_3/\text{H}_2\text{O}_3\text{P}-\text{C}_2\text{H}_4-\text{SO}_3/\text{NaOH}/\text{H}_2\text{O}$ led to six new compounds $\text{Ln}(\text{O}_3\text{P}-\text{C}_2\text{H}_4-\text{SO}_3)$ with $\text{Ln} = \text{Ho, Er, Tm, Yb, Lu, Y}$.

The first di-cadmium-substituted vanadoarsenate derived from $\alpha\text{-}\{\text{As}_8\text{V}_{14}\text{O}_{42}\}$ shell

Dan Zhao, Shou-Tian Zheng and Guo-Yu Yang

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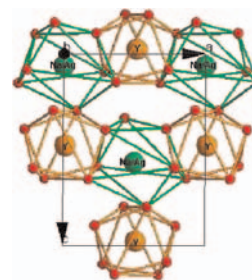


A new Cd-substituted vanadoarsenate $[\text{Cd}(\text{enMe})_3]_2\{\alpha\text{-}[(\text{enMe})_2\text{Cd}_2\text{As}_8\text{V}_{12}\text{O}_{40}(0.5\text{H}_2\text{O})]\} \cdot 5.5\text{H}_2\text{O}$ was hydrothermally synthesized and characterized by EA, IR, TGA, UV-Vis, XRD, magnetic measurement and single crystal structural analysis. This compound exhibits the first di-Cd-substituted vanadoarsenate derived from $\alpha\text{-}\{\text{As}_8\text{V}_{14}\text{O}_{42}\}$ shell.

Structure and luminescence properties of silver-doped $\text{NaY}(\text{PO}_3)_4$ crystal

M. El Masloumi, V. Jubera, S. Pechev, J.P. Chaminade, J.J. Videau, M. Mesnaoui, M. Maazaz and B. Moine

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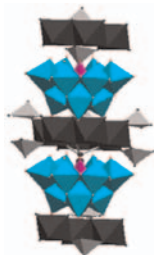


The presence of only one Ag^+ luminescence centre is the result from the perfect isolation ($\text{Ag}^+-\text{Ag}^+ = 5.90 \text{ \AA}$) of each oxygenated silver site (AgO_8 polyhedra) sharing two faces and one corner with three yttrium polyhedra.

Continued

Optimum conditions for intercalation of lacunary tungstophosphate(V) anions into layered Ni(II)–Zn(II) hydroxyacetate

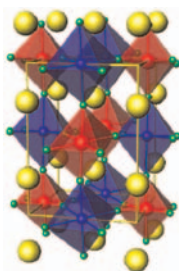
M. Angeles Ballesteros, M. Angeles Ulibarri, Vicente Rives and Cristobalina Barriga
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Optimum conditions for intercalation of Keggin-type anions in Ni, Zn hydroxysalts have been identified. Lacunary species are formed via partial depolymerization of the starting anion. The thermal decomposition of the intercalated phases has been also studied.

La³⁺ doping of the Sr₂CoWO₆ double perovskite: A structural and magnetic study

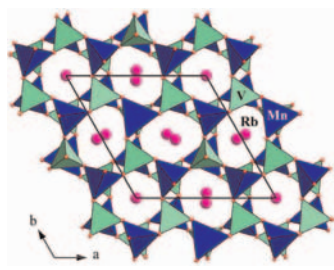
C.A. López, M.C. Viola, J.C. Pedregosa, R.E. Carbonio, R.D. Sánchez and M.T. Fernández-Díaz
Page 3095



La-doped Sr₂CoWO₆ double perovskites have been prepared in polycrystalline form by solid-state reaction. The general formula of these compounds is Sr_{2-x}La_xCoW_{1-y}Co_yO₆ ($y = x/4$). XRPD, NPD and magnetic susceptibility studies were performed. The structure of monoclinic La-doped phases contains alternating CoO₆ and (Co/W)O₆ octahedra, almost fully ordered. NPD and magnetic measurements indicate an antiferromagnetic ordering at low temperature.

Synthesis, structures and magnetic properties of the new vanadates AgMnVO₄ and RbMnVO₄

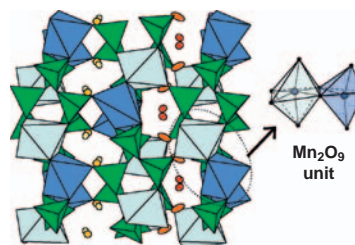
Hamdi Ben Yahia, Etienne Gaudin and Jacques Darriet
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The new vanadates AgMnVO₄ and RbMnVO₄ have been synthesized by solid state reaction. They crystallize with a maricite-type and a stuffed tridymite-type structure, respectively. Antiferromagnetic interactions were observed in both compounds.

A new lithium manganese phosphate with an original tunnel structure in the A₂MP₂O₇ family

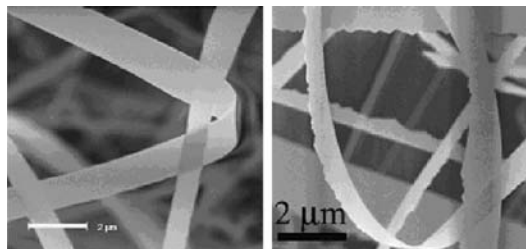
Laure Adam, Anne Guesdon and Bernard Raveau
Page 3110



The 3D structure of Li₂Mn^{II}P₂O₇ (synthesized by solid-state reaction) is built from P₂O₇ diphosphate groups sharing corners with original Mn₂O₉ units. The lithium cations sit in the tunnels of the framework on four independent sites. Magnetic measurements have been performed, showing a paramagnetic behaviour. The relationships with the other compounds of the A₂MP₂O₇ series are analysed.

Large-scale growth of millimeter-long single-crystalline ZnS nanobelts

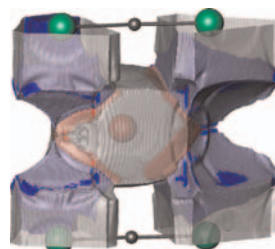
Jianye Li, Qi Zhang, Lei An, Luchang Qin and Jie Liu
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Millimeter-long single-crystalline ZnS nanobelts were grown on specific locations on a large scale. There are two kinds of nanobelts in the products—one has two smooth sides, and the other has one smooth side and one saw-teeth-like side, namely nanosaws. Mechanisms for the longitudinal direction growth of the nanobelts/nanosaws and the side saw-teeth direction growth of the nanosaws are discussed.

Chemical bonding analysis and properties of La₇Os₄C₉—A new structure type containing C- and C₂-units as Os-coordinating ligands

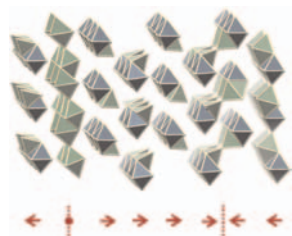
Enkhsetseg Dashjav, Yurii Prots, Guido Kreiner, Walter Schnelle, Frank R. Wagner and Rüdiger Kniep
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Polar multicenter Os–La bonding in the compound La₇Os₄C₉ is discussed in position space from a combined analysis of the electron localizability indicator (ELI-D) and the electron density. The picture shows five electron density basins (gray translucent) for atom types Os (green spheres) and La (red spheres) and only those parts (in blue colour) of 4 Os–La multicenter ELI-D basins, which are intersected by the electron density basins displayed.

Polar domains and charge-density waves in the acentric cerium(III) iron(II) sulfide $Ce_{22}Fe_{21}S_{54}$

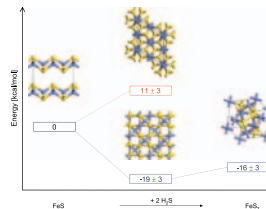
Allison M. Mills and Michael Ruck
Page 3131



Chains of $[FeS_6]$ -octahedra that are isotactically capped on one side by $[FeS_4]$ -tetrahedra dominate the acentric structure. The unit cell contains two layered domains of opposite polarity with unbalanced size ratio. Vacancies in the iron sites follow a sinusoidal occupation modulation corresponding to a frozen charge-density wave.

High-temperature FeS–FeS₂ solid-state transitions: Reactions of solid mackinawite with gaseous H₂S

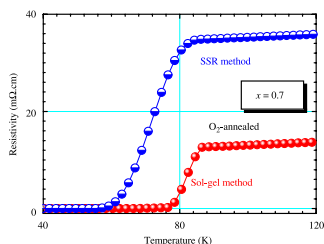
Y. Li, R.A. van Santen and Th. Weber
Page 3151



Reactions of mackinawite (FeS) with H₂S. In the absence of electron acceptors the system remains in the Fe^{2+}/S^{2-} regime and endothermic pyrrhotite phases form (upper pathway). Only in the presence of electron acceptors, FeS phases with iron or sulfur in higher oxidation states can form and FeS reacts under these conditions exothermic to pyrite (FeS₂) via greigite (Fe₃S₄) as intermediate (lower pathway).

Sol-gel synthesis, structural and superconducting properties of $(Hg_{1-y}Se_y)Sr_2(Y_{1-x}Ca_x)Cu_2O_{6+\delta}$

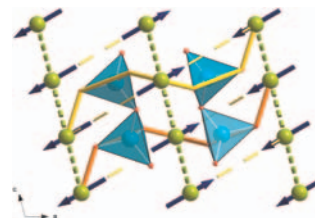
E. Kandyl
Page 3137



A series of Sr-based Hg-1212 superconducting cuprate $(Hg_{1-y}Se_y)Sr_2(Y_{1-x}Ca_x)Cu_2O_{6+\delta}$ have been synthesized using highly homogenous and reactive precursor $Sr_2(Y_{1-x}Ca_x)Cu_2O_z$ prepared by the citrate sol-gel process. The superconductor ceramics obtained from the sol-gel precursor was found to be so homogenous that the superconducting transition was steeper than the ceramic sample prepared by the solid-state reaction (SSR) method.

Magnetic ordering and spin structure in Ca-bearing clinopyroxenes $CaM^{2+}(Si, Ge)_2O_6$, $M=Fe, Ni, Co, Mn$

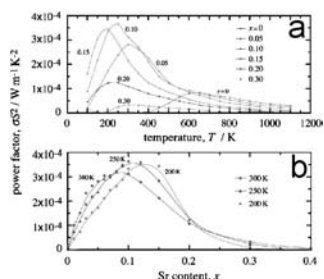
Günther J. Redhammer, Georg Roth, Werner Treutmann, Werner Paulus, Gilles André, Clemens Pietzonka and Georg Amthauer
Page 3163



The magnetic properties and magnetic spins structures of 4 members of the clinopyroxenes are determined from susceptibility measurements and neutron diffraction. The magnetic ordering is accompanied by distinct alterations in structural parameters such as unit cell dimensions and interatomic distances.

Thermoelectric properties of polycrystalline $La_{1-x}Sr_xCoO_3$

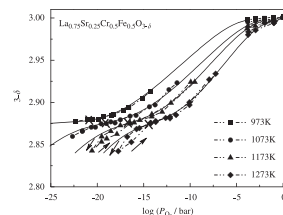
Kouta Iwasaki, Tsuyoshi Ito, Takanori Nagasaki, Yuji Arita, Masahito Yoshino and Tsuneo Matsui
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Temperature and Sr-doping level dependencies of the power factor of $La_{1-x}Sr_xCoO_3$.

Oxygen nonstoichiometry and defect structure analysis of B-site mixed perovskite-type oxide $(La, Sr)(Cr, M)O_{3-\delta}$ ($M=Ti, Mn$ and Fe)

Masatsumu Oishi, Keiji Yashiro, Kazuhisa Sato, Junichiro Mizusaki and Tatsuya Kawada
Page 3177



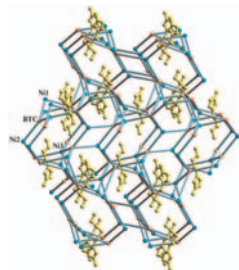
Oxygen nonstoichiometry of $(La_{0.75}Sr_{0.25})(Cr_{0.5}Fe_{0.5})O_{3-\delta}$ was plotted as the functions of partial oxygen pressure and temperature. The results were well explained by the localized electron on the Fe-sites and the equilibrium constants of the defect chemical equation were determined. A hysteresis was observed under the reducing atmospheres above 1173 K due to decomposition of Fe ions.

Note

A new 3D nickel(II) framework composed of large rings: Ionothermal synthesis and crystal structure

Ling Xu, Eun-Young Choi and Young-Uk Kwon

Page 3185



A novel 3D framework $[\text{AMI}][\text{Ni}_3(\text{BTC})_2(\text{OAc})(\text{MI})_3]$ is obtained in ionothermal system with $[\text{AMI}]^+$ incorporating in the cavities as structure directing template and BTC^{3-} showing a new coordination fashion. The 3D framework is constructed by 2D layers linked with 1D double chains. The title compound has the middle thermal stability at ca. 280 °C.

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