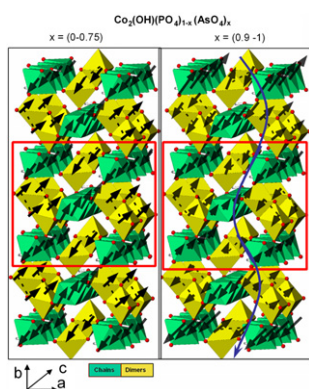


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Regular Articles

Heat capacity and neutron diffraction studies on the frustrated magnetic $\text{Co}_2(\text{OH})(\text{PO}_4)_{1-x}(\text{AsO}_4)_x$ [$0 \leq x \leq 1$] solid solution

I. de Pedro, J.M. Rojo, J. Rodríguez Fernández, J. Sanchez Marcos, M.T. Fernández-Díaz and T. Rojo
page 1

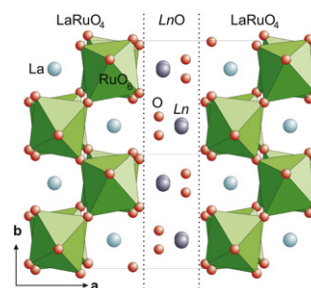


Magnetic structures of $\text{Co}_2(\text{OH})(\text{PO}_4)_{1-x}(\text{AsO}_4)_x$ [$0 \leq x \leq 1$]. The ordering of the magnetic moments of Co^{2+} is in *c* direction for the two crystallographic positions (dimers and chains) in all compounds. The unit cell is surrounded by a red line.

Regular Articles—Continued

Single crystalline and rare earth substituted La_2RuO_5 investigated by x-ray diffraction and EXAFS spectroscopy

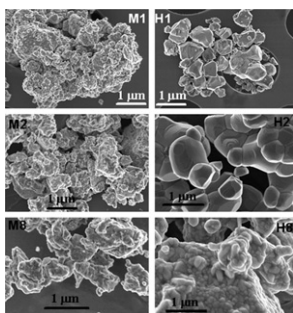
S. Riegg, A. Reller and S.G. Ebbinghaus
page 17



The crystal structure of $\text{La}_{2-x}\text{Ln}_x\text{RuO}_5$ ($\text{Ln} = \text{Pr}, \text{Nd}, \text{Sm}, \text{Gd}, \text{Dy}$) is shown viewed along the *c*-axis. The alternating stacking of LaRuO_4 and LnO layers leads to the formation of zig-zag layers of corner sharing RuO_6 octahedra. The La sites in the LaRuO_4 layers are represented by light blue spheres, while the La/Ln sites in the LnO layers are colored dark blue. EXAFS investigations reveal a cationic ordering with roughly 65% of the substituting Ln ions occupying the LnO layers.

Room temperature mechanosynthesis of the $\text{La}_{1-x}\text{Sr}_x\text{MnO}_{3\pm\delta}$ ($0 \leq x \leq 1$) system and microstructural study

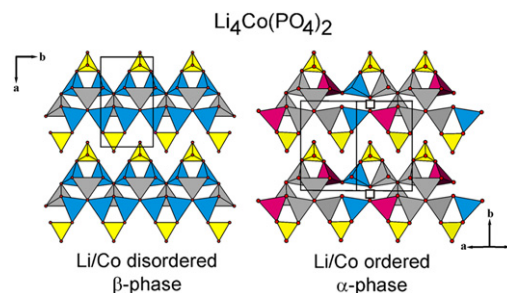
M.J. Sayagués, J.M. Córdoba and F.J. Gotor
page 11



SEM micrographs corresponding to milled (M) and Heated (H) samples: $\text{LaMnO}_{3\pm\delta}$ (M1 and H1) $\text{La}_{0.75}\text{Sr}_{0.25}\text{MnO}_{3\pm\delta}$ (M2 and H2), and $\text{SrMnO}_{3\pm\delta}$ (M8 and H8).

Synthesis, structures and properties of the new lithium cobalt(II) phosphate $\text{Li}_4\text{Co}(\text{PO}_4)_2$

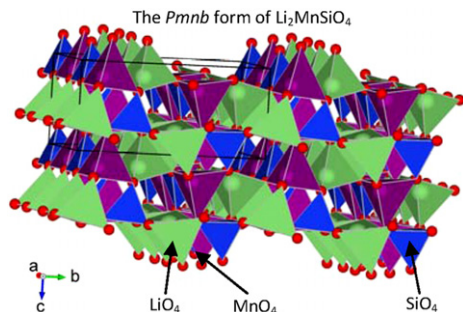
R. Glaum, K. Gerber, M. Schulz-Dobrick, M. Herklotz, F. Scheiba and H. Ehrenberg
page 26



The complex formation and decomposition behavior of $\text{Li}_4\text{Co}(\text{PO}_4)_2$ with temperature has been elucidated. The crystal structure of its α -phase was determined from single crystal data, HT-XRPD allowed derivation of a structure model for the β -phase. Both modifications belong to the Li_3PO_4 structure family.

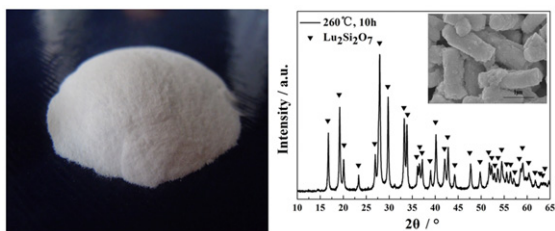
Continued

Crystal chemistry of the *Pmnb* polymorph of $\text{Li}_2\text{MnSiO}_4$
R.J. Gummow, N. Sharma, V.K. Peterson and Y. He
page 32



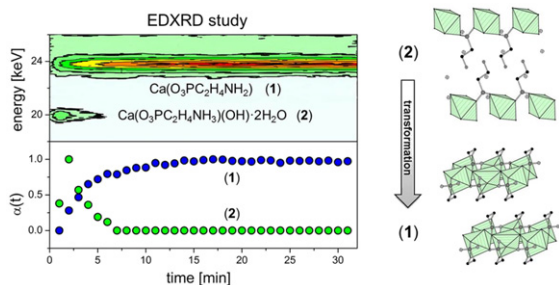
Polyhedral representation of the crystal structure of $\text{Li}_2\text{MnSiO}_4$ in the *Pmnb* space group. LiO_4 , MnO_4 and SiO_4 tetrahedra are shown in green, purple and blue, respectively.

Hydrothermal synthesis of lutetium disilicate nanoparticles
Xiaoping Tang, Yanfeng Gao, Hongfei Chen and Hongjie Luo
page 38



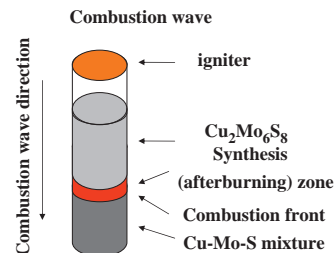
An image for the as-prepared $\text{Lu}_2\text{Si}_2\text{O}_7$ powders (left) and XRD pattern (right) (inset shows the SEM graph of powders).

High-throughput and in situ EDXRD investigation on the formation of two new metal aminoethylphosphonates – $\text{Ca}(\text{O}_3\text{PC}_2\text{H}_4\text{NH}_2)$ and $\text{Ca}(\text{OH})(\text{O}_3\text{PC}_2\text{H}_4\text{NH}_3) \cdot 2\text{H}_2\text{O}$
Corinna Schmidt, Mark Feyand, André Rothkirch and Norbert Stock
page 44



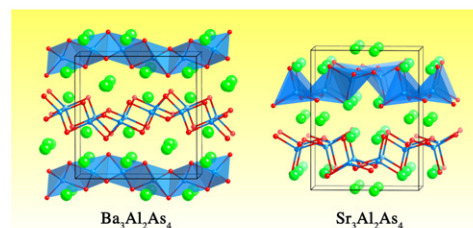
The detailed in situ energy dispersive X-ray diffraction (EDXRD) investigation on the formation of the new inorganic-organic hybrid compound $\text{Ca}(\text{O}_3\text{PC}_2\text{H}_4\text{NH}_2)$ leads to the discovery of a new crystalline intermediate phase. Both crystal structures were elucidated using X-ray powder diffraction data.

Ultra fast elemental synthesis of high yield copper Chevrel phase with high electrochemical performance
Gregory Gershinsky, Ortal Haik, Gregory Salitra, Judith Grinblat, Elena Levi, Gilbert Daniel Nessim, Ella Zinigrad and Doron Aurbach
page 50



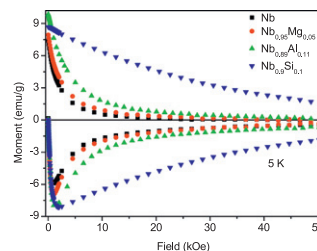
Schematic diagram of the combustion process.

Synthesis and structural characterization of the ternary Zintl phases $\text{AE}_3\text{Al}_2\text{Pn}_4$ and $\text{AE}_3\text{Ga}_2\text{Pn}_4$ ($\text{AE} = \text{Ca}, \text{Sr}, \text{Ba}, \text{Eu}$; $\text{Pn} = \text{P}, \text{As}$)
Hua He, Chauntae Tyson, Maia Saito and Svilen Bobev
page 59



$\text{AE}_3\text{Al}_2\text{Pn}_4$ and $\text{AE}_3\text{Ga}_2\text{Pn}_4$ ($\text{AE} = \text{Ca}, \text{Sr}, \text{Ba}, \text{Eu}$; $\text{Pn} = \text{P}, \text{As}$) crystallize in two different structures— $\text{Ca}_3\text{Al}_2\text{P}_4$, $\text{Sr}_3\text{Al}_2\text{As}_4$, $\text{Eu}_3\text{Al}_2\text{P}_4$, $\text{Eu}_3\text{Al}_2\text{As}_4$, $\text{Ca}_3\text{Ga}_2\text{P}_4$, $\text{Sr}_3\text{Ga}_2\text{P}_4$, $\text{Sr}_3\text{Ga}_2\text{As}_4$, and $\text{Eu}_3\text{Ga}_2\text{As}_4$, are isotopic with the previously reported $\text{Ca}_3\text{Al}_2\text{As}_4$ (space group *C2/c* (No. 15)), while $\text{Ba}_3\text{Al}_2\text{P}_4$ and $\text{Ba}_3\text{Al}_2\text{As}_4$ adopt a different structure known for $\text{Na}_3\text{Fe}_2\text{S}_4$ (space group *Pnma* (No. 62)). The polyanions in both structures are made up of *TrPn*₄ tetrahedra, which by sharing common corners and edges, form $^{2-}_{\infty}[\text{TrPn}_2]^{3-}$ layers in the former and $^{1-}_{\infty}[\text{TrPn}_2]^{3-}$ chains in $\text{Ba}_3\text{Al}_2\text{P}_4$ and $\text{Ba}_3\text{Al}_2\text{As}_4$.

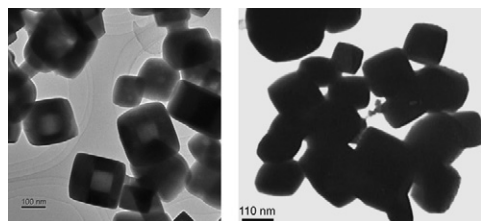
Superconductivity in quaternary niobium oxynitrides containing main group elements ($M = \text{Mg}, \text{Al}, \text{Si}$)
Y. Ohashi, S. Kikkawa, I. Felner, M.I. Tsindlekht, D. Venkateshwarlu, V. Ganesan and J.V. Yakhmi
page 66



The doped Si oxide accompanied with some amount of cation vacancy in cubic NbN lattice induces relatively large magnetic hysteresis on isothermal hysteresis loops at 5 K of the dc magnetization up to 5 T among the four niobium oxynitrides containing main group elements, $\text{Nb}_{1.00}(\text{N}_{0.98}\text{O}_{0.02})$; $(\text{Nb}_{0.95}\text{Mg}_{0.05})(\text{N}_{0.92}\text{O}_{0.08})$; $(\text{Nb}_{0.89}\text{Al}_{0.11})(\text{N}_{0.84}\text{O}_{0.16})$, and $(\text{Nb}_{0.87}\text{Si}_{0.09}\square_{0.04})(\text{N}_{0.87}\text{O}_{0.13})$.

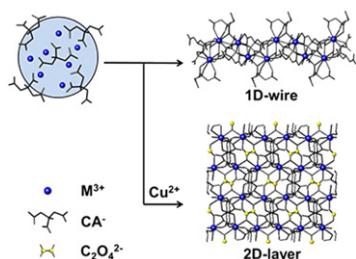
Effect of solvents on morphologies of PbTe nanostructures: Controllable synthesis of hollow and solid PbTe nanocubes by a solvothermal method

Wenzhong Wang, Lijuan Wang and Qing Zhou
page 72



A facile solution-phase route has been developed to synthesize hollow and solid PbTe nanocubes. The possible growth mechanism of hollow and solid PbTe nanocubes was discussed in detail.

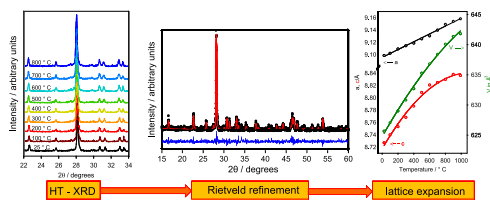
New metal-organic frameworks of $[M(C_6H_5O_7)(C_6H_6O_7)(C_6H_7O_7)(H_2O)] \cdot H_2O$ ($M = La, Ce$) and $[Ce_2(C_2O_4)(C_6H_6O_7)_2] \cdot 4H_2O$
Sheng-Feng Weng, Yun-Hsin Wang and Chi-Shen Lee
page 77



$[M(C_6H_5O_7)(C_6H_6O_7)(C_6H_7O_7)(H_2O)] \cdot H_2O$ ($M = La$ (**1a**), Ce (**1b**)) and $[Ce_2(C_2O_4)(C_6H_6O_7)_2] \cdot 4H_2O$ (**2**)—with 1D and 2D structures were synthesized and characterized.

Thermal expansion of $Ba_2ZnSi_2O_7$, $BaZnSiO_4$ and the solid solution series $BaZn_{2-x}Mg_xSi_2O_7$ ($0 \leq x \leq 2$) studied by high-temperature X-ray diffraction and dilatometry

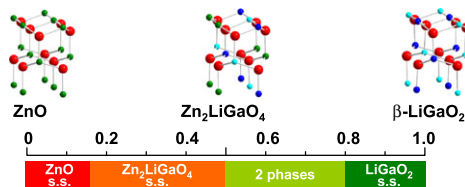
Marita Kerstan, Matthias Müller and Christian Rüssel
page 84



XRD-patterns of $Ba_2ZnSi_2O_7$ were recorded at different temperatures (left). For each XRD-pattern a Rietveld-refinement was performed, the image in the middle shows the XRD-pattern measured at room temperature (circles), the Rietveld calculation (red line) and the difference between them (blue line). The lattice parameters derived hereof were plotted against the temperature and fitted to a polynomial (right picture). From those polynomials the lattice expansion was calculated.

Structural variation and optical properties of ZnO - $LiGaO_2$ pseudo-binary system

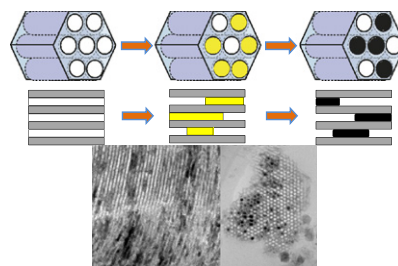
Takahisa Omata, Masao Kita, Kosuke Tachibana and Shinya Otsuka-Yao-Matsuo
page 92



The structure of ZnO varied upon alloying with $LiGaO_2$.

Highly ordered magnetic mesoporous silicas for effective elimination of carbon monoxide

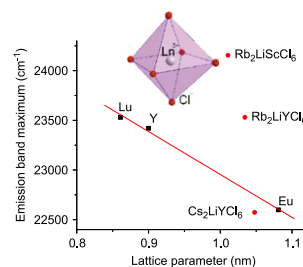
Jiho Lee and Jeong Ho Chang
page 100



Strategy for the preparation of highly abundant Fe nanoparticle embedded MS catalyst by hydrogen reduction process and HR-TEM images of cross-sectional and top view.

Luminescence of the elpasolite series $M_2^I M^{II} MCl_6$ ($M^I = Cs, Rb$; $M^{II} = Li, Na$; $M = Lu, Y, Sc, In$) doped with europium using synchrotron radiation excitation

Peter A. Tanner, Chang-Kui Duan, Guohua Jia and Bing-Ming Cheng
page 105



Luminescence of Eu^{3+} and Eu^{2+} in elpasolite hosts under synchrotron radiation is observed and assigned.

Continued

Corrigendum

Corrigendum to “Oxygen excess in the “114” cobaltite hexagonal structure: The ferrimagnet $\text{CaBaCo}_4\text{O}_{7.50}$ ”

[*J. Solid State Chem.* **184** (2011) 2588–2594]

V. Pralong, V. Caignaert, T. Sarkar, O.I. Lebedev,

V. Duffor and B. Raveau

page 109

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