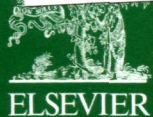


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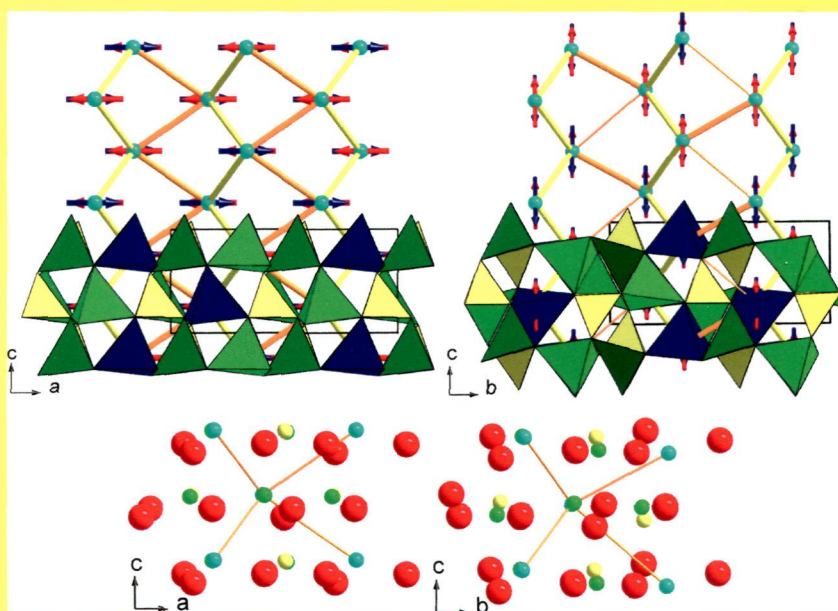
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IN THIS ISSUE:

**Magnetic structures of β_1 -Li₂CoSiO₄ and γ_0 -Li₂MnSiO₄:
Crystal structure type vs. magnetic topology**



Maxim Avdeev, Zakiah Mohamed and Chris D. Ling

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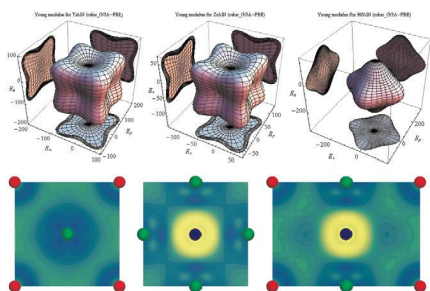
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Regular Articles

Electronic structures, elastic properties, and minimum thermal conductivities of cermet M_3AlN

Jin Wang, ZhiQian Chen, ChunMei Li, Feng Li and ChaoYin Nie

page 1

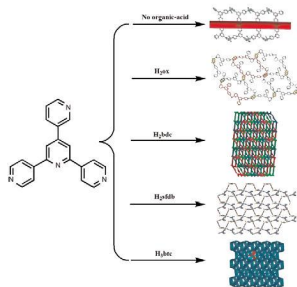


1. Young's moduli of anti-perovskite Ti_3AlN , Zr_3AlN , and Hf_3AlN in full space.
2. Electron density differences on crystal planes (1 0 0), (2 0 0), and (1 1 0) of anti-perovskite Zr_3AlN .

Synthesis, crystal structures and luminescent properties of zinc(II) metal–organic frameworks constructed from terpyridyl derivative ligand

Xiao-Le Yang, Yi-Qing Shangguan, Huai-Ming Hu, Bing Xu, Bao-Cheng Wang, Juan Xie, Fei Yuan, Meng-Lin Yang, Fa-Xin Dong and Gang-Lin Xue

page 13



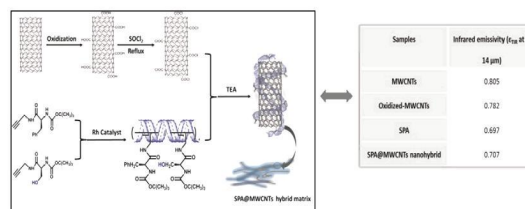
Five new Zn(II) metal–organic frameworks based on dicarboxylate and terpyridyl derivative ligands have been synthesized by hydrothermal reactions, giving networks from 1D to 3D structures. The thermal stability and luminescent property have been investigated.

Regular Articles—Continued

Optically active substituted polyacetylene@carbon nanotube hybrids: Preparation, characterization and infrared emissivity property study

Xiaohai Bu, Yuming Zhou, Tao Zhang, Yongjuan Wang, Zewu Zhang and Man He

page 23



Optically active SPA@MWCNTs nanohybrids with low infrared emissivity.

Structural variation from heterometallic cluster-based 1D chain to heterometallic tetranuclear cluster: Syntheses, structures and magnetic properties

Shu-Hua Zhang, Ru-Xia Zhao, He-Ping Li, Cheng-Min Ge, Gui Li, Qiu-Ping Huang and Hua-Hong Zou

page 30

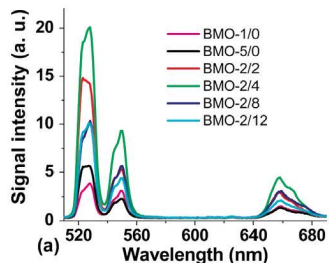


Two novel cobalt complexes have been prepared. Compound 1 consists of tetranuclear $\{Co_4^{II}Na\}$ units, which further formed a 1-D chain. Compound 2 is heterometallic tetranuclear cluster. Two complexes display dominant ferromagnetic interaction.

Continued

Understanding the infrared to visible upconversion luminescence properties of Er³⁺/Yb³⁺ co-doped BaMoO₄ nanocrystals

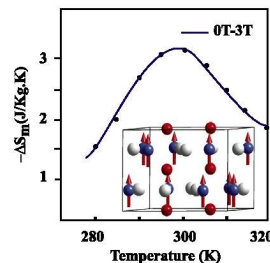
Rajesh Adhikari, Jinhyuk Choi, R. Narro-García, E. De la Rosa, Tohru Sekino and Soo Wahn Lee
page 36



Infrared to visible upconversion luminescence of Er³⁺/Yb³⁺ co-doped BaMoO₄ nanocrystals.

Toward a better understanding of the magnetocaloric effect: An experimental and theoretical study of MnFe₄Si₃

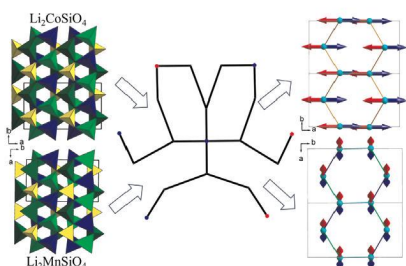
Olivier Gourdon, Michael Gottschlich, Joerg Persson, Clarina de la Cruz, Vaclav Petricek, Michael A. McGuire and Thomas Brückel
page 56



Theoretical and experimental reinvestigation of the magnetic structure of MnFe₄Si₃ for a better understanding of its large magnetocaloric effect (MCE).

Magnetic structures of β₁-Li₂CoSiO₄ and γ₀-Li₂MnSiO₄: Crystal structure type vs. magnetic topology

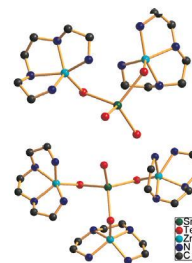
Maxim Avdeev, Zakiah Mohamed and Chris D. Ling
page 42



Despite the different crystal structures β₁-Li₂CoSiO₄ and γ₀-Li₂MnSiO₄ have similar magnetic topology and as a result adopt magnetic structure of the same type.

New μ-SnTe₄ and μ-Sn₂Te₆ ligands to transition metal: Solvothermal syntheses and characterizations of zinc tellurostannates containing polyamine ligands

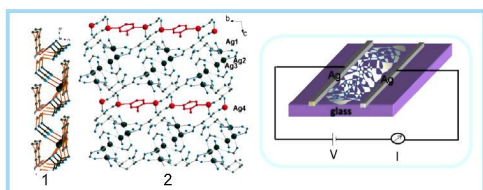
Jialin Lu, Fang Wang, Yali Shen, Chunying Tang, Yong Zhang and Dingxian Jia
page 65



Zinc tellurostannates were prepared with iodine ion assistant in polyamines, and first μ-1κ:2κ-SnTe₄, μ₃-1κ:2κ:3κ-SnTe₄, and μ-1κ:2κ-Sn₂Te₆ ligands TM centers were obtained.

Electrical conductivity and luminescence properties of two silver(I) coordination polymers with heterocyclic nitrogen ligands

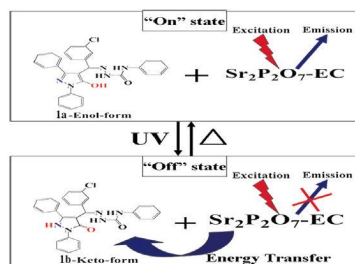
Abhinandan Rana, Swapan Kumar Jana, Tanusri Pal, Horst Puschmann, Ennio Zangrando and Sudipta Dalai
page 49



Two new 1D and 3D coordination polymers of Ag(I) have been synthesized and characterized by X-ray analysis. The electrical, luminescence and thermal properties have been studied.

Modulation of a solid-state reversible fluorescent photoswitching based on a controllable photochromic pyrazolones

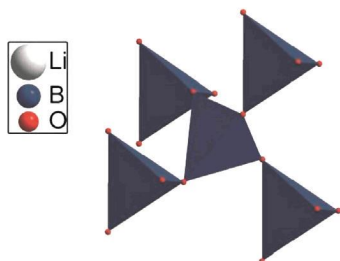
Hu Liu, Jixi Guo, Dianzeng Jia, Mingxi Guo, Fuhe Le, Lang Liu, Dongling Wu and Feng Li
page 73



A novel fluorescence photoswitching system based on doping inorganic fluorescence dye into photochromic pyrazolones was constructed successfully. Its fluorescence emission could be efficiently modulated by the photoisomerization of pyrazolones.

Hydrothermal phase stability study of $\text{Li}_2\text{B}_4\text{O}_7$

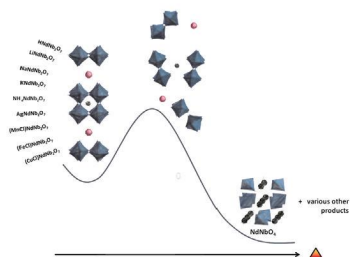
Jeffrey J. Graham, J. Matthew Mann, Timothy W.C. Zens and John W. McClory
page 79



Every boron in lithium γ -metaborate is tetrahedrally coordinated with oxygen, and each tetrahedron is linked to four other tetrahedrons, creating a strong B-O lattice surrounding the lithium atoms.

Synthesis and thermal stability studies of a series of metastable Dion–Jacobson double-layered neodymium-niobate perovskites

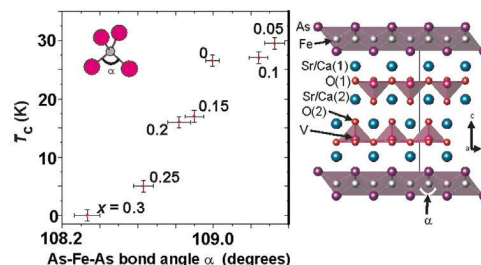
Elisha A. Josepha, Sara Farooq, Cinnamon M. Mitchell and John B. Wiley
page 85



A new series of topochemically-prepared metastable neodymium-containing layered perovskites are studied.

Control of the superconducting properties of $\text{Sr}_{2-x}\text{Ca}_x\text{VO}_3\text{FeAs}$ through isovalent substitution

Alex J. Corkett, David G. Free, Simon J. Cassidy, Silvia Ramos and Simon J. Clarke
page 91

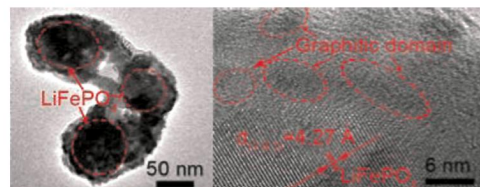


Superconducting transition temperature is controlled by structural parameters in $\text{Sr}_{2-x}\text{Ca}_x\text{VO}_3\text{FeAs}$.

Rapid Communications

Encapsulation of LiFePO_4 by in-situ graphitized carbon cage towards enhanced low temperature performance as cathode materials for lithium ion batteries

Bin Yao, Zhaojun Ding, Jianxin Zhang, Xiaoyu Feng and Longwei Yin
page 9



A novel structured LiFePO_4/C composite was prepared by a facile solid state route, in which nanosized LiFePO_4 spheres were encapsulated by in-situ graphitized carbon cages.

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