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CONTENTS

Foreword

Professor Hans Georg von Schnering celebrates his 75th birthday

Reinhard Nesper and Yuri Grin

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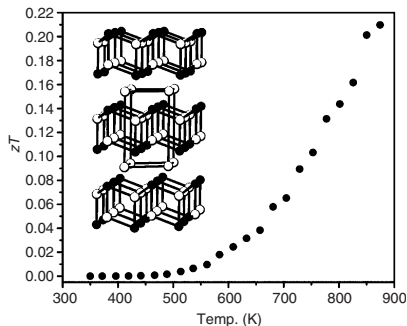
Special Section:

Dedicated to the occasion of the 75th birthday of Prof. Hans Georg von Schnering

Thermoelectric properties and microstructure of Mg_3Sb_2

Cathie L. Condon, Susan M. Kauzlarich, Franck Gascoin and G. Jeffrey Snyder

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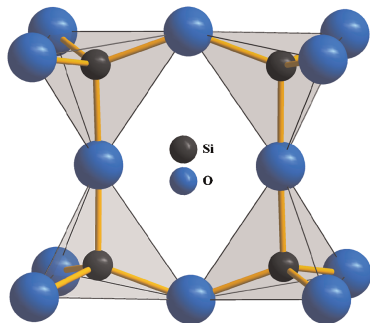


Dimensionless figure of merit for Mg_3Sb_2 hot pressed and sintered at 873 K. The inset illustrates the crystal structure of Mg_3Sb_2 along the [100] direction (white = Mg, black = Sb).

The lanthanoid(III) chloride *cyclo*-tetrasilicates $\text{M}_6\text{Cl}_{10}[\text{Si}_4\text{O}_{12}]$ ($\text{M} = \text{Sm}, \text{Gd-Dy}$): Synthesis, structure and IR investigations

Ingo Hartenbach, Stefan Jagiella and Thomas Schleid

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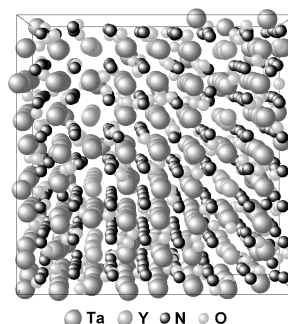


Cyclo-oxotetrasilicate unit in $\text{M}_6\text{Cl}_{10}[\text{Si}_4\text{O}_{12}]$.

A density-functional and molecular-dynamics study on the physical properties of yttrium-doped tantalum oxynitride

H. Wolff, H. Schilling, M. Lerch and R. Dronskowski

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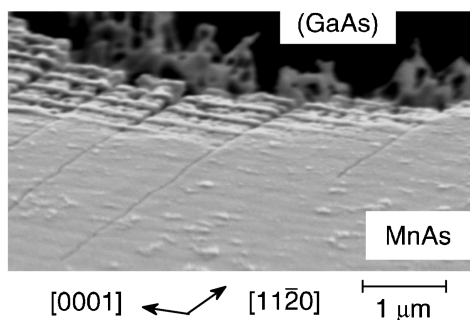


Structural result of a room-temperature molecular-dynamic simulation of a supercell of $\text{Y}_{0.125}\text{Ta}_{0.875}\text{O}_{0.875}\text{N}_{0.125}$.

Fabrication of MnAs microstructures on GaAs(001) substrates and their electrical properties

Y. Takagaki, E. Wiebicke, L. Däweritz and K.H. Ploog

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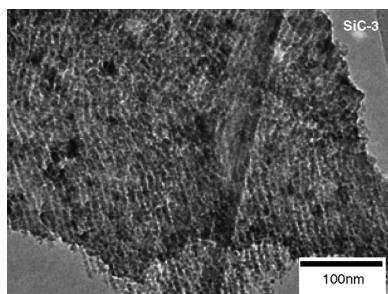


Surface of a partly etched MnAs film grown on a GaAs(001) substrate.

Thermal stability of high surface area silicon carbide materials

Piotr Krawiec and Stefan Kaskel

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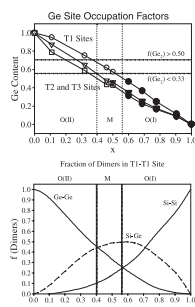


The synthesis of mesoporous silicon carbide by chemical vapor infiltration of dimethyl dichlorosilane into mesoporous silica SBA-15 and subsequent dissolution of the silica matrix was used for the preparation of mesoporous SiC with high specific surface areas up to $830\text{ m}^2\text{ g}^{-1}$ and pore sizes between 2 and 10 nm.

On the distribution of tetrelide atoms (Si, Ge) in $\text{Gd}_5(\text{Si}_x\text{Ge}_{1-x})_4$

Sumohan Misra and Gordon J. Miller

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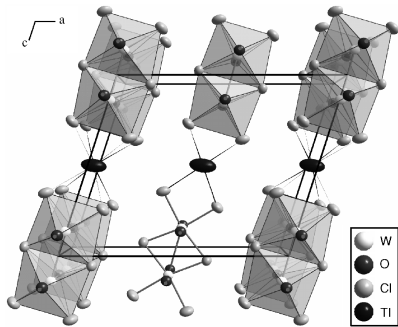


The Ge occupation in each T site in $\text{Gd}_5(\text{Si}_x\text{Ge}_{1-x})_4$ is studied as a function of Si concentration, x . The different crystal structures are related to the fractions of Ge-Ge (solid), Si-Ge (dashed) and Si-Si (solid) dimers at the T1-T1 sites.

$M_{1-x}[\text{W}_2\text{O}_2\text{X}_6]$ with $M = \text{K}^+, \text{Ti}^+, \text{Ag}^+, \text{Hg}^{2+}, \text{Pb}^{2+}$; $X = \text{Cl}, \text{Br}$ —A class of mixed valence tungsten (IV,V) compounds with layered structures, W-W bonds and high conductivity

Johannes Beck, Christian Kusterer, Rolf-Dieter Hoffmann and Rainer Pöttgen

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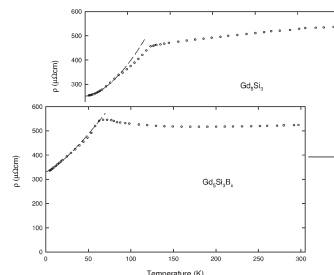


WOCl_3 has a particular reactivity to form non-stoichiometric quaternary compounds $M_{1-x}[\text{W}_2\text{O}_2\text{Cl}_6]$ with mono and divalent cations. The compounds exhibit temperature independent paramagnetism and high electrical conductivity.

Mn_5Si_3 -type host-interstitial boron rare-earth metal silicide compounds RE_5Si_3 : Crystal structures, physical properties and theoretical considerations

Jérôme Roger, Mouna Ben Yahia, Volodymyr Babizhetskyy, Joseph Bauer, Stéphane Cordier, Roland Guérin, Kurt Hiebl, Xavier Rocquefelte, Jean-Yves Saillard and Jean-François Halet

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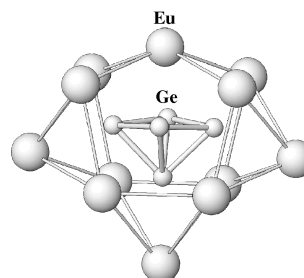


Incorporation of boron in vacant octahedral sites of the Mn_5Si_3 -type phase Gd_5Si_3 modifies its resistivity properties.

Barrelane-like germanium clusters in Eu_3Ge_5 : Crystal structure, chemical bonding and physical properties

Sergij Budnyk, Franz Weitzer, Christof Kubata, Yurii Prots, Lev G. Akselrud, Walter Schnelle, Kurt Hiebl, Reinhard Nesper, Frank R. Wagner and Yuri Grin

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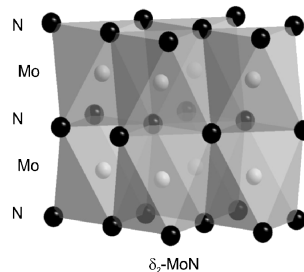


Main building blocks of the crystal structure Eu_3Ge_5 are $[\text{Ge}_3]^{6-}$ cluster anions surrounded by Eu^{2+} cations. The nearly tetragonal-pyramidal shape is suggested by the interatomic distances. Contrary to that, the bonding analysis with the ELF reveals only two- and three-bonded germanium atoms forming a strongly distorted [111]-barrelane-like cluster.

Synthesis and characterisation of hexagonal molybdenum nitrides

Alexey Yu. Ganin, Lorenz Kienle and Grigori V. Vajenine

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Hexagonal $\delta_2\text{-MoN}$ with the NiAs-type crystal structure.

Continued

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