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CONTENTS

Thermal stability of high surface area silicon carbide materials

Piotr Krawiec and Stefan Kaskel

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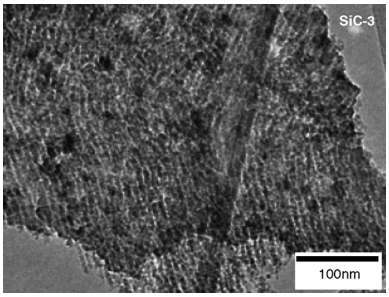

The synthesis of mesoporous silicon carbide by chemical vapor infiltration of dimethyl dichlorosilane into mesoporous silica SBA-15 and subsequent dissolution of the silica matrix was used for the preparation of mesoporous SiC with high specific surface areas up to $830\,m^2\,g^{-1}$ and pore sizes between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

On the distribution of tetrelide atoms (Si, Ge) in $Gd_5(Si_xGe_{1-x})_4$

Sumohan Misra and Gordon J. Miller

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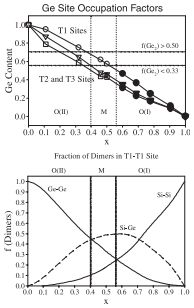

The Ge occupation in each T site in $Gd_5(Si_xGe_{1-x})_4$ is studied as a function of Si concentration, x. The different crystal structures are related to the fractions of Ge–Ge (solid), Si–Ge (dashed) and Si–Si (solid) dimers at the T1–T1 sites.

$M_{1-x}[W_2O_2X_6]$ with $M = K^+$, Tl^+, Ag^+, Hg^{2+}, Pb^{2+}; X = Cl, 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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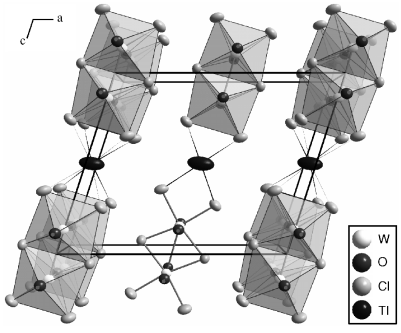

$WOCl_3$ has a particular reactivity to form non-stoichiometric quaternary compounds $M_{1-x}[W_2O_2Cl_6]$ with mono and divalent cations. The compounds exhibit temperature independent paramagnetism and high electrical conductivity.

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

Jérome 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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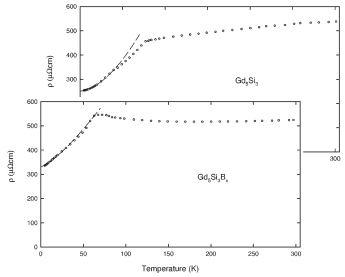

Incorporation of boron in vacant octahedral sites of the Mn_5Si_3-type phase Gd_5Si_3 modifies its resistivity properties.

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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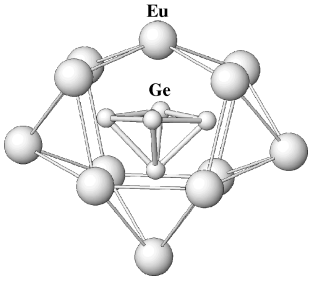

Main building blocks of the crystal structure Eu_3Ge_5 are $[Ge_5]^{6-}$ cluster anions surrounded by Eu^{2+} cations. The nearly tetragonal-pyramidal shape is suggested by the interatomic distances. Contrary to that, the bonding analysis with the ELF reveals only two- and three-bonded germanium atoms 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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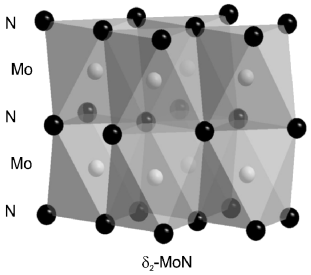

δ_2-MoN

Hexagonal δ_2-MoN with the NiAs-type crystal structure.

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