**substance:** boron compounds, general properties

**property:** general papers on icosahedral boron-rich solids

Structures of boron and some boron-rich compounds [69S1, 69S2]

Boron and boron-rich compounds [99W]

Icosahedral boron-rich solids [87E2].

Icosahedral borides and amorphous boron. [92G].

Icosahedral boron rich solids as very high temperature semiconductors [87E2].

Icosahedral boron-rich solids as refractory semiconductors [87E1].

Quasiamorphous semiconductors [89G2].

Metallic-covalent bonding conversion in aluminum-based and boron-based icosahedral cluster solids [97K1].

On the sensitivity of spectroscopic and electrical investigations of structural and preparatory influences on the properties of icosahedral boron-rich solids [91W2].

Interrelation between icosahedral aluminium-based quasicrystals and boron-rich solids [95K].

**Preparation and structure**

Crystal growth of icosahedral B12 compounds from high-temperature metal solutions [90H2].

Ion implantation in boron: remarkable stability of covalent structures based on icosahedra [91S].

Structure, defects and properties of some refractory borides [85L].

Preparation of icosahedral boride semiconductors [87A].

Modeling of the structure of amorphous semiconductors [87G1].

Investigations on the ternary system Al-B-C [99H].

Growth of icosahedral boron-rich clusters at high pressure in [98M].

High-pressure, high-temperature synthesis of superhard α-rhombohedral boron-rich solids in the B-C-N-O system [98H].

**Electronic properties**

Symmetry analysis of the electronic structure of polyhedron clusters M_{12} (I_h), M_{12} (O_h) and M_{60} (I_h) [91W1].

Semiconductors with complex lattice and the amorphization problem in [87G2].

Quasiamorphous semiconductors (in russian) [89G1].

The dynamic effective charges of icosahedral boron by the Bond-Charge Model [96S1].

On the electronic properties of icosahedral quasicrystals [96W1].

Electronic structures of icosahedral boron solids [90H1].

An isotopic disorder as a possible cause of the intrinsic electronic localization in some materials with narrow electronic bands [84B].

Mössbauer study of boron-rich phases doped with Fe [91G].

A study of negative force constants, contribution of the Jahn-Teller effect [97S4].

Jahn-Teller effect of the B_{12} icosahedron and its general influence on the valence band structures of boron-rich solids [90F, 90W, 91F].
Superconductivity and magnetism of the pseudoternary rare earth boride systems \( R(\text{Rh}_{1-x}\text{Co}_x)\text{B}_4 \) (\( R = \text{Lu, Er, Ho} \)) [87K].
Bipolaron formation in icosahedral and octahedral borides [98E].
Solid state properties determined by electronic states in icosahedral clusters of group III elements [99K].

**Impurities and defects**

Detection possibility of doping atoms (C and Al) in \( \text{B}_{12} \)-based solid clusters by high-resolution electron microscopy [99O].

**Lattice properties**

The basis functions and the matrix representations of the single and double icosahedral point group [92S1].
On the normal vibrations of the icosahedral boron molecule \( \text{B}_{12} \) [92S2].
Vibrations of regular boron icosahedra [86B].
The polar vibrations and the effective charges of the icosahedral boron solids [96S2].
The IR and Raman activities of the icosahedral molecule [96S1].
Vibrational properties of boron and boron-rich compounds [86W].
Structure and bulk modulus of high-strength boron compounds [97L].
Central and noncentral forces on the lattice dynamics of boron-rich solids [97S2].
Origin of the homology of lattice vibrations of icosahedral structures [86R].
The effects of special geometries of boron-rich crystals on the lattice dynamics [99S].

**Transport properties**

Energy transfer processes in non-ohmic hopping conductivity in a strong electric field [83B].
Electronic transport in icosahedral boron-rich solids [87E3].
Pair breaking in semiclassical singlet small-bipolaron hopping [96E].
Bipolarons in boron icosahedra [87H2, 87H3].
Bipolarons in boron-rich icosahedra [87H1].
Electron transport in boron-rich borides [87G3].

**Optical properties**

Optical properties of large and small polarons and bipolarons [93E].
Optical properties of quasicrystalline approximant boron-rich solids [93H].
Structure-modulated reflectivity spectra of icosahedral boron-rich solids [96W2].

**Further properties**

Thermal properties of boron, boron carbides, \( \text{B}_{12}\text{As}_2 \) and \( \text{YB}_{66} \) [86T].
The elastic properties and the mechanical stability of boron-rich solids [97S3].
The rotation-induced relaxation mechanism for strains: application to boron-rich crystals [97S1].

**Applications**

Thermistor properties of boron and its compounds [80G].
Boron-based high temperature thermoelectric materials [83R, 84S].
High-temperature thermoelectric energy conversion I [84W2].
High-temperature thermoelectric energy conversion. II Materials survey [84W1].
Boron-rich solids: A chance for high-efficiency high-temperature energy conversion [95W].
References:


