

## CONTENTS

<b>Contributing Authors .....</b>	<b>ix</b>
<b>Preface.....</b>	<b>xv</b>
<b>Acknowledgment.....</b>	<b>xvii</b>
Boron Carbide/Boron Carbide-Carbon Nanofibers Laminates with Weak Interfaces.....	1
<i>N. Orlovskaya, M. Lugovy, V. Slyunyayev, V. Subbotin, F. Liang, J. Gou, J. Kuebler and T. Graule</i>	
All Ceramic Cantilever Sensors with Boron Carbide Layer: Advantages and Dimensional Limitations .....	13
<i>M. Lugovy</i>	
Raman Effect in Boron and Boron-Rich Compounds.....	29
<i>H. Werheit and V. Filipov</i>	
Experimentally Founded Charge Transport Model for Icosahedral Boron-Rich Solids.....	45
<i>H. Werheit</i>	
Magnetic and Thermoelectric Properties of Boron-Rich Solids .....	63
<i>T. Mori</i>	
Scratch Studies in Boron-Rich Lightweight and Ultrahigh Temperature Ceramic.....	83
<i>D. Ghosh and G. Subhash</i>	
The Electronic Properties of Metal Borides and Borocarbides: Differences and Similarities .....	95
<i>S. Lassoued, R. Gautier and J.-F. Halet</i>	
Investigation of Hard Boron Rich Solids: Osmium Diboride and $\beta$ -Rhombohedral Boron.....	115
<i>M. Hebbache and D. Živković</i>	

Elastic and Vibration Properties of Boron–Carbon Ultra Hard Materials.....	131
<i>J. E. Lowther</i>	
Processing and Properties of Ultra-Refractory Composites Based on Zr- and Hf-Borides: State of the Art and Perspectives.....	147
<i>A. Bellosi, S. Guicciardi, V. Medri, F. Monteverde, D. Sciti and L. Silvestroni</i>	
Behavior of Boron Doped Graphites and Boron Carbide under Ion Beam and Plasma Irradiation .....	161
<i>L.B. Begrambekov, O.I. Buzhinsky and A. Zakharov</i>	
Vibrational Spectroscopy of Adsorbates on the (111) and (100) Surfaces of Lanthanum Hexaboride.....	181
<i>T. Yorisaki, A. Tillekaratne, YU. Moriya, C. Oshima, S. Otani, and M. Trenary</i>	
Zirconium Dodecaboride, a Novel Superconducting Material with Enhanced Surface Characteristics .....	195
<i>M. Belogolovskii, I. Felner and V. Shaternik</i>	
Boron under Pressure: Phase Diagram and Novel High-Pressure Phase ..	207
<i>A. R. Oganov</i>	
Behavior of the Crystalline Boroncarbide Coating under Tokamak Conditions .....	227
<i>O.I. Buzhinskij and V.G. Otroshchenko</i>	
Electron Structure, Transport, and Superconducting Properties of $ZrB_{12}$ , $ZrB_2$ , $YB_6$ and $MgB_2$ .....	237
<i>V.A. Gasparov</i>	
Densification, Microstructure Evolution and Mechanical Properties of Ultrafine SiC Particle-Dispersed $ZrB_2$ Matrix Composites .....	261
<i>F. Monteverde, S. Guicciardi, C. Melandri and D.D. Fabbri</i>	
Mechanochemically Driven Syntheses of Boride Nanomaterials .....	273
<i>R.G. Blair</i>	

Vibrational Properties of $\text{Zr(Hf)B}_2\text{-SiC}$ UHTC Composites by Micro-Raman Spectroscopy .....	287
<i>M. Donohue, C. Carpenter and N. Orlovskaya</i>	
Synthesis and Sintering Strategies of Boron-Rich Solids .....	303
<i>L. Sartinska</i>	
Field-assisted Densification of Superhard $\text{B}_6\text{O}$ Materials with $\text{Y}_2\text{O}_3/\text{Al}_2\text{O}_3$ Addition.....	319
<i>M. Herrmann, J. Raethel, K. Sempf, M. Thiele, A. Bales and I. Sigalas</i>	
<b>Index .....</b>	<b>327</b>

Boron Rich Solids

Sensors, Ultra High Temperature Ceramics,  
Thermoelectrics, Armor

Orlovskaya, N.; Lugovy, M. (Eds.)

2011, XVIII, 330 p., Hardcover

ISBN: 978-90-481-9817-7