

Table of Contents

Preface

The Study of Ignition Parameters for Energy Efficient Processing of High Temperature Non-Oxide Ceramics by the Micropyretic Synthesis Route

H.P. Li 1

Self-Propagating High-Temperature Synthesis (SHS) of Advanced High-Temperature Ceramics

S.K. Mishra and L.C. Pathak 15

Densification and High Temperature Deformation in Oxide Ceramics

A.H. Chokshi 39

Mechanical, Thermal and Oxidation Behaviour of Zirconium Diboride Based Ultra-High Temperature Ceramic Composites

R. Mitra, S. Upender, M. Mallik, S. Chakraborty and K.K. Ray 55

Processing of Refractory Metal Borides, Carbides and Nitrides

L. Rangaraj, C. Divakar and V. Jayaram 69

Development of High Temperature TiB₂-Based Ceramics

G.B. Raju and B. Basu 89

Boron Rich Boron Carbide: An Emerging High Performance Material

R.M. Mohanty and K. Balasubramanian 125

High Temperature Use Fractal Insulation Materials Utilizing Nano Particles

B. Kandell 143

Nanoscale Alumina-Reinforced Aluminum Matrix Composites: Microstructure and Mechanical Properties

J.X. Han, Y.C. Chen and V.K. Vasudevan 157

Effect of Ductile and Brittle Phases on Deformation and Fracture Behaviour of Molybdenum and Niobium Silicide Based Composites

R. Mitra, K. Chattopadhyay, A.K. Srivastava, K.K. Ray and N. Eswara Prasad 179

Nitride & Oxy-Nitride Ceramics for High Temperature and Engineering Applications

S. Bandyopadhyay, S. Biswas and H.S. Maiti 193

Vapour Phase Preparation and Characterisation of SiC_f-SiC and C_f-SiC Ceramic Matrix Composites

A. Udayakumar, R. Bhuvana, S. Kalyanasundaram, J. Subrahmanyam, M. Balasubramanian and T.S. Kannan 209