

Contents

Preface	ix
Introduction	xi
GEOPOLYMERS AND OTHER INORGANIC POLYMERS	
Geomaterial Foam to Reinforce Wood E. Prud'homme, P. Michaud, C. Peyratout, A. Smith, S. Rossignol, E. Joussein, and N. Sauvat	3
Effect of Curing Conditions on the Porosity Characteristics of Metakaolin-Fly Ash Geopolymers Tammy L. Metroke, Michael V. Henley, and Michael I. Hammons	11
New Insights on Geopolymerisation using Molybdate, Raman, and Infrared Spectroscopy C. H. Rüscher, E. Mielcarek, J. Wongpa, F. Jirasit, and W. Lutz	17
Transformation of Polysialate Matrixes from Al-Rich and Si-Rich Metakaolins: Polycondensation and Physico-Chemical Properties Elie Kamseu and Cristina Leonelli	35
Effect of High Tensile Strength Polypropylene Chopped Fiber Reinforcements on the Mechanical Properties of Sodium Based Geopolymer Composites Daniel R. Lowry and Waltraud M. Kriven	47
Properties of Basalt Fiber Reinforced Geopolymer Composites E. Rill, D. R. Lowry, and W. M. Kriven	57

Novel Applications of Metal-Geopolymers	69
Oleg Bortnovsky, Petr Bezucha, Petr Sazama, Jiří Dědeček, Zdena Tvarůžková, and Zdeněk Sobalík	
Making Foamed Concretes from Fly Ash Based on Geopolymer Method	83
Nhi Tuan Pham and Hoang Huy Le	
Preparation of Electrically Conductive Materials Based on Geopolymers with Graphite	91
Z. Černý, I. Jakubec, P. Bezdička, L. Šulc, J. Macháček, J. Bludská, and P. Roubíček	
Effect of Synthesis Parameters and Post-Cure Temperature on the Mechanical Properties of Geopolymers Containing Slag	101
Tammy L. Mirocke, Brian Evans, Jeff Eichler, Michael I. Hammons, and Michael V. Henley	
COMPUTATIONAL DESIGN, MODELING, SIMULATION AND CHARACTERIZATION	
Electronic Structure and Band-Gaps of Eu-Doped LaSi₃N₅ Ternary Nitrides	109
L. Bencó, Z. Lences, and P. Sajgalik	
First Principle Molecular Dynamic Simulations of Oxygen Plasma Etching of Organosilicate Low Dielectric Materials	119
Jincheng Du and Mrunal Chaudhari	
Kinetic Monte Carlo Simulation of Cation Diffusion in Yttria-Stabilized Zirconia	127
Brian Good	
Dynamic Neutron Diffraction Study of Thermal Stability and Self-Recovery in Aluminium Titanate	139
I. M. Low and Z. Oo	
NANOLAMINATED TERNARY CARBIDES AND NITRIDES	
Titanium and Aluminium Based Compounds as a Precursor for SHS of Ti₂AlN	153
L. Chlubný, J. Lis, and M. M. Bućko	
Investigations on the Oxidation Behavior of Max-Phase Based Ti₂AlC Coatings on γ-TiAl	161
Maik Fröhlich	

Study of High-Temperature Thermal Stability of Max Phases in Vacuum	171
I. M. Low, W. K. Pang, S. J. Kennedy, and R. I. Smith	
Detection of Amorphous Silica in Oxidized Maxthal Ti_3SiC_2 at 500–1000°C	181
W. K. Pang, I. M. Low, J. V. Hanna, and J. P. Palmquist	
Author Index	191