

Table of Contents

Preface

Chapter 1: Polymers, Composites and Ceramics

The Influence of Matrix Density on The Weibull Modulus of Natural Fiber Reinforced Nanocomposites	
D. Wong, M. Anwar, S. Debnath, A. Hamid and S. Izman	3
Fabrication of Poly(Vinyl) Alcohol-Cellulose Nanocrystal Hybrid Aerogel	
N. Samat, R.F. Nasrudin and N.S. Engliman	11
Mechanical Properties of Hydroxyapatite Ceramic Prepared from Micropowder and Nanopowder	
A. Raksujarit and P. Ratjiranukool	17
Synthesis and Characterization of Isothiocyanate Poly(Methyl Eugenol) and Thiosemicarbazide Poly(Methyl Eugenol)	
L. Arianie, M.I. Supriatna, N. Kazal, N. Widodo, W. Warsito and E.D. Iftitah	23
Preparation and Characterization of Hydroxyapatite Nanopowder from Natural Buffalo Bone	
P. Ratjiranukool and A. Raksujarit	33
Taguchi Analysis of Natural Frequency for Simply Supported Composite Stiffened Hypars with Perforation	
P.B. Chaudhuri, A. Mitra and S. Sahoo	39
Effective Complex Permittivity of Random Composite Media: PVDF/(Na_{1/2}Bi_{1/2})TiO₃	
A. Kumar and K. Prasad	47
Structural and Electric Properties of Ba-Fe-Ta-Na-Bi-Ti-O Ceramic System	
A. Yadav, K.P. Chandra, A.R. Kulkarni and K. Prasad	53
Evaluation of Tensile and Flexural Properties of Unidirectional Glass-Epoxy Laminate with Aluminium Oxide and Magnesium Hydroxide as Filler Materials	
S.I. Reddy, P.G. Chowdary and N. Shaik	61
Density, Hardness, and Wear Responses of Rice Husk Ash Reinforced Aluminium Composites	
Z. Seikh, M. Sekh, G. Kibria, R. Haque and S. Haidar	67
Microstructure and Mechanical Behavior of Chromium Oxide Reinforced LM26 Based Metal Matrix Composites	
T.V. Nagaraja and R. Sagar	79
Creep Analysis of Thick Walled Cylinder under Constant Internal Pressure	
S. Bansal and S.B. Singh	89
Optical, Structural and Ethanol Sensing Properties of Spin-Coated ZnO Film	
D.k. Chaudhary, M.B. Kshetri, S. Thapa and S.K. Joshi	107

Chapter 2: Materials and Technologies for Electronic Industry

Effects of Ni Content on Melting Behaviors and Wettability of SnBiAgNi Lead-Free Solder	
N. Mookam, P. Jattakul and K. Kanlayasiri	119
An Explicit Thermal Resistance Model Regarding Self-Heating Effect of AlGaN/GaN High Electron Mobility Transistor	
S. Chakraborty, J.W. Shin, W. Amir, K.Y. Shin and T.W. Kim	125

Chapter 3: Building Materials

A New Proposed Model to Estimate Compressive Strength of Brick Masonry Prisms	
T.M.S. Alrudaini	135

Experimental Study on Unconfined Compressive Strength of Natural Rubber Modified Soil Cement A. Uchaipichat	143
Uncovering the Hidden Value of Waste Cow Bones Towards their Use as a Sustainable Biofiller for Hot-Mix Asphalt Paving Applications N. Nciri, N.H. Kim, N.J. Cho, H.S. Jeong, H.J. Ji and H.S. Yang	149
Physico-Mechanical Characteristics of Limestone Blocks from the Republic of Moldova D.C. Albu	161