

Table of Contents

Preface

Chapter 1: Properties and Technological Features of Structural Materials

Parametric Optimization of Aluminium Alloy 1100 Friction Stir Welding Using Adapted Vertical Milling Machine T.E. Abioye and O.O. Olugbusi	3
Multi-Response Optimization of Drilling Parameters for Aluminum Metal Matrix Composite Using Entropy Weighted Grey Relational Analysis S.G. Ghalme and P. Karoleczak	17
Computer Modelling of Influence of Crystal Lattice Friction Stress on the Dislocation Annihilation Process K. Borysovska	31

Chapter 2: Hybrid Metal-Organic Frameworks and Phosphors for Opto- and Microelectronics

A Short Review on Photoluminescent Properties of Hybrid Metal Organic Framework N.M. Shaikh, G. Bagihalli and V. Adimule	47
Hybrid MOFs Supercapacitor: A Mini Review K. Sharma, T. Gupta, S. Vijayanthimala, N.R. Yogamalar and V. Adimule	57
Design, Enhanced Photoluminescence Properties of Ti Incorporated Zr-Networked 4-[Formyl (Hydroxymethylidene)-4-Sulfanyl] Benzoic Acid Metal Organic Frameworks G. Bagihalli, N. Manhas, B.C. Yallur and S. Batakurki	77
Electrochemical High-Performance Hybrid Supercapacitors of Carbon Nanosphere Doped 3D Zr (II) Linked 4-[(1E)-1-Hydroxy-3-Oxoprop-1-En-2-Yl]Sulfanyl} Benzoic Acid Metal Organic Frameworks S.S. Nandi, V. Adimule, S.S. Kerur, A. Gupta, S. Hosmane and S. Batakurki	87
Synthesis and VUV Spectral Properties of Red-Emitting $K_2Gd_{0.97}Zr(PO_4)_3:3mol\%Eu^{3+}$ Phosphor via Down-Conversion S.R. Jaiswal, P.A. Nagpure and S.K. Omanwar	101

Chapter 3: Geochemistry

Impact of Sodium Tripolyphosphate on the Rheological Properties of Dams Sediments and Friction Factor during Hydraulic Dredging of Dams B. Lakhache, L. Hammadi and L. Gaidi	111
Effect of the Chemical Modification of Diatomite/Isotactic Polypropylene Composite on the Rheological, Morphological and Mechanical Properties R. Hichem and S. Bouhelal	121