

Table of Contents

Preface

v

Chapter 1: Steel and Alloys

Microstructure and Fatigue Life of Surface Modified PBF-LB Manufactured Maraging Steel	
T. Rautio, M. Jaskari, M. Hietala and A. Järvenpää	3
Multi Objective Parametric Optimization of Ultrasonic Vibration Assisted Turning on Ti6AL4V Alloy	
V.K. Pasam, G. Kartheek, S. Rankireddy and L. Dumpala	11
The Effect of Laser Heat Treatment and Severe Shot Peening on Laser Powder Bed Fusion Manufactured AISI 316L Stainless Steel	
M. Hietala, T. Rautio, M. Jaskari, T. Gundgire and A. Järvenpää.....	17
Effect of Roll Load on Microstructure of Roll Cast Al-10%Mg Strip	
T. Haga, K. Yamazaki, H. Watari and S. Nishida	25
Casting of Thin Aluminum Alloy Wire Using a Single Wheel Caster	
T. Haga, M. Makita, H. Watari and S. Nishida.....	33
Tool Surface Degradation and Adhesion in Aluminium Forging	
J. Peddinghaus, H. Paschke, K. Brunotte and B.A. Behrens	41
Metal-Containing Diamond-Like Carbon Coatings with Increased Temperature Stability for Wear Protection of Nitrided Hot Forging Dies	
B.A. Behrens, G. Bräuer, K. Brunotte, J. Peddinghaus, M. Rothgänger, J. Uhe, C. Kipp and M. Siegmund.....	51

Chapter 2: Functional Ceramics and Glasses

Physical and Luminescence Properties of Europium Ions Doped Barium Tellurite Glass	
S. Qureshi, P. Bhardwaj and G.F. Ansari	63
Physical and Optical Properties of Lead-Tungsten-Tellurite Glasses	
G.F. Ansari, S. Patidar, R. Pandey and R. Kumar	71
Impedance Spectroscopy Analysis of $(1-x)\text{Ba}_{0.06}(\text{Na}_{1/2}\text{Bi}_{1/2})_{0.94}\text{TiO}_3\text{-}x\text{NaTaO}_3$ Ceramics	
S. Rajwar, S.K. Pandey and S.K. Roy	77
Fragility and Modified Gibbs-DiMarzio Relation Verification in Chalcogenide Materials	
N.D. Patel, V.H. Mistry, T.L. Shanker Rao and T. Shanker Rao	85
Structure, Microstructure, and Dielectric Properties of $\text{Bi}_{0.5}(\text{Na}_{0.78}\text{K}_{0.22})_{0.5}\text{TiO}_3$ Lead-Free Ceramic	
R.K. Singh, M. Kumar and S.K. Roy.....	91
Effect of Milling on Dielectric Properties of PZT	
S. Pandey, S. Chaudhuri, R.K. Singh and S.K. Roy	99

Dielectric and Mechanical Properties of PZT Incorporated PVDF Nanocomposites Prepared by Solution Casting Method

S. Lakra, S.K. Mukherjee, S.K. Roy and M. Kumar 107

Chapter 3: Biomedical Materials

Mechanical Design Optimization of Capsaicin Extract-Loaded Topical Films Using Design of Experiments Approach

J. Suksaeree, C. Monton and W. Pichayakorn 117

Pectin/PVA-Borax Hydrogel with Self-Healing Ability

N. Nichakornpong, P. Potiyaraj and M. Okhawilai 123

Chapter 4: Nanomaterials

Parametric Study of the Galvanic Reaction Parameters on the Synthesis of 1-Dimensional Cu-Ag Nanostructures

M.K.J. Exconde and M.D.L. Balela 131

Keyword Index 139

Author Index 141