

Table of Contents

Preface

Chapter 1: Ceramics

The Effect of Rare-Earth Dopants on Dielectric Behavior and Energy Storage Performances of NBST-Based Relaxor Ferroelectric Ceramics

X.J. Meng and Y. Yuan 3

Microwave Sintering Modification of 85M₇Z₃CLT Microwave Dielectric Ceramics

L. Zhao, G.Y. Li, J.F. Liu, X.F. Cai, Q. Hu, Y.Y. Hu and Y.L. Jiang 13

Chapter 2: Functional Materials

Development of Silver Nanoparticles Enriched N-Dodecanoic Acid as Energy Storage Material for Thermal Management of Electronic Systems

L. Swetha, R. Parameshwaran and D. Sandip 23

Development and Characterization of Ni-Cobalt Oxide Coatings for Functional Applications

A.R. Shashikala and B.S. Sridhar 33

Study on the Influence of Curing Regime on the Microstructural and Mechanical Properties of Alkali-Activated Concrete with Coarse Recycled Aggregates

M.D. Ikramullah Khan, V. Vinayaka Ram and R. Parameshwaran 41

Chapter 3: Lubricants

Effect of Stress during Press-Fitting on Tribological Behavior of Self-Lubricating Composite Liners in Spherical Plain Bearings

H.T. Chen, L.L. Zhu, X.R. Huang, J.J. Zhang and C.L. Hu 55

Effect of Micro-Dimples on Lubrication in Ironing of Stainless Steel

K. Kitamura, T. Makino and M. Nawa 63

Graphene Nano-Lubricant for the Improved Rolling Contact Fatigue (RCF) Life of AISI 4140 Steel under Rolling with Slip Conditions

M.R. Ranju and D. Kesavan 71

Use of Liquid Lubricant with Glass Microspheres in Suspension to Permanently Improve the Tribological Behavior of PPS

S. García Carrasco, S. Sánchez-Caballero, M.Á. Sellés Cantó, S. Montava-Jordà and A.d.l. Calle Salas 79

Development of Oil Free Lubricants for Cold Rolling of Low-Carbon Steel

L. Jacobs, D. Rèche, A. Bán, V. Colla, O. Toscanelli, M. Raulf, M. Schlupp, B. Smeulders, M. Cook and W. Filemon 87

Effects of Various Cooling and Lubrication Methods on the Tool Life and Hole Quality of Deep Drilled Small Holes in AISI 304L

J.M. Scholey, K.K. Wika, A. Wright and T.S. Sihra 97

Enhancing Machinability of Nimonic 90 Alloy by Micro-Texturing Based Solid Lubricant on AlTiN Coated Carbides: A Sustainable Approach towards Commercialization

G. Kumar, S. Ghosh and P.V. Rao 107

Temperature Sensing in Cold Forging with Thermochromically Enhanced Lubrication Systems

C. Kuhn and P. Groche 117

About the Possibility to Assess Cutting Fluids Efficiency Using an Instrumented Tribological Approach

V. Burnichon, C. Courbon, F. Salvatore, M.A. Cruz Gracia, U. Masciantonio and J. Rech 125

Enhancement of Mixed-Lubrication Models for Cold Rolling

L. Jacobs, V. Pater and M. de Rooij 133