

Table of Contents

Preface

Chapter 1: Nanocomposites and Bioceramics

The Influence of Matrix Density on The Weibull Modulus of Natural Fiber Reinforced Nanocomposites D. Wong, M. Anwar, S. Debnath, A. Hamid and I. Sudin	3
Mechanical Properties of Hydroxyapatite Ceramic Prepared from Micropowder and Nanopowder A. Raksujarit and P. Ratjiranukool	11
Preparation and Characterization of Hydroxyapatite Nanopowder from Natural Buffalo Bone P. Ratjiranukool and A. Raksujarit	17

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	25
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	31

Chapter 3: Building Materials

A New Proposed Model to Estimate Compressive Strength of Brick Masonry Prisms T.M.S. Alrudaini	41
Experimental Study on Unconfined Compressive Strength of Natural Rubber Modified Soil Cement A. Uchaipichat	49
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	55
Physico-Mechanical Characteristics of Limestone Blocks from the Republic of Moldova D.C. Albu	67

Chapter 4: Strength of Materials and Structural Integrity

An Approach in Analyzing Longitudinal Fracture of Inhomogeneous Beams with Using Generalized Viscoplastic Models V.I. Rizov	77
Inhomogeneous Beam of Circular Cross-Section with Concentric Lengthwise Cracks: A Fracture Analysis with Considering Viscoplastic Behaviour V.I. Rizov	83
A Mixed FEM for Simulating Laminated Glass Beam Stiffness and Strength D. Baraldi	89
A Test System for Plastic Metal Materials Subjected to Multi-particle Erosion via Air Ejector Z.Q. Fang, S.L. Peng and L. Zhang	95

Chapter 5: Designing of Machines and Machine Parts

Manufacturing a Model for Moving the Electrode of TIG Welding for the Rib Piper Connection

T.M.T. Uyen, N.V.H. Hai, N.M. Tai, N.M. Tai, N.M. Hoang, N.P.T. Khoa and P.Q. Anh

103