Table of Contents

Preface, Committees

Microstructure

J.C. Kuai, C.R. Jiang and J.W. Wang

Chapter 1: Properties of Engineering Materials, Production and Processing Technologies

Moisture Effects on Patch Bonded Composite Repairs K.J. Wong, X.J. Gong, S. Aivazzadeh and M.N. Tamin	3
Comparative Investigation on the Failure Modes of Natural Kenaf/Epoxy Reinforced Composite Hexagonal Tubes M.F.M. Alkbir, S.M. Sapuan, A.A. Nuraini and M.R. Ishak	7
Research on DC Breakdown and Flashover Characteristics of PI with Different Femperature	
Γ.Y. Niu, J.X. Wu, Y.W. Li, D.S. Xu, L. Li, L.J. Wang, R. Zhang, K. Chen, L. Zhang and H. Zhang	11
Effect of Magnetic Field Strength on Carbide Precipitation Behavior in W ₆ Mo ₅ Cr ₄ V ₃ High Speed Steel during Medium Temperature Tempering Y. Wu, Z.W. Zhang, Q. Wang, N. Xiao and X. Zhao	15
The Influence of High-k Material/SiO ₂ Gate Stacks on Direct Gate Tunneling Current of Cylindrical Surrounding-Gate MOSFETs F.A. Noor, C. Bimo and Khairurrijal	19
Experimental Study on the Plant Dye Sensitized TiO ₂ Electrode P.Y. Xu, M. Mu, Y.Q. Li and S.H. Zhang	23
Effect of Glycidyl Methacrylate (GMA) Content on Grafting Yield and Mechanical Properties of GMA Grafted Poly(Lactic Acid) Prepared by Melt Mixing Method Γ.C. Nguyen, R. Chaiwat and Y. Ruksakulpiwat	27
The Konjac/Chitosan Microspheres Prepared by Emulsion Crosslinking Method L.L. Wang, J. Huang, D.C. Lai and C.Y. Leng	32
Thermomechanical Characterization of Blended Biomass-Coal Ash Waste Materials Γ.W. Samadhi, W. Wulandari, F.G. Gumilar and K.F. Ramadani	38
The Improve of Accelerated Carbonation on Engineering Properties of Basic Oxygen Furnace Slag C.C. Chen, C.S. Chen, J.Y. Jhan and M.S. Ko	42
Predicting the Duration of Manufacturing Process with Two Complement Materials H.H. Huang	46
Influence of Surfacing Current on Microstructure and Wear Resistance of Fe60 Alloy Surfacing Coating	
B. Chen, Y. Li, P.X. Zhu, H.J. Fan, C. Tang and X. Jin Synthesis and Characterization of Different Transition Metal-Alginate Based	51
Heterogeneous Catalyst for Esterification Reaction F.L. Pua, K.T. Looi, S.G. Krishnan and S. Nabihah	57
Development of Magnesium-Silicate-Hydrate Cement by Pulverized Fuel Ash T.T. Zhang, Y.N. Du, Y.J. Sun, Z.M. He and Z.L. Wu	61
Facile Synthesis and Characterization of Fe-Co Nanoparticles Supported Silica Rice Husk J. Andas, R.A. Rosdi and N.I. Mohd Anuar	66
Characterization of Langkawi Black Sand for the Recovery of Titanium N. Begum, N. Khuzaima, F.F. Ching, M.F. Bari and S. Rezan	70
Chapter 2: Design and Preparation of Thin Films	

Forming Mechanism of Composite Abrasive Grains in Oxide Film on ELID Wheel and its

77

Mathematical Model of the Influence of Chemisorption Process on Electrophysical Parameters of Nanosized ZnO Films I.A. Shipulin, E.G. Zamburg and O.A. Ageev	82
Esterification of Rice Straw Cellulose Using Microwave Heating for Plastic Film Preparation P. Chaiworn and U. Ratanakamnuan	86
Hardness and Texture Evolution of Sputtered TiN Thin Films with Different Thicknesses on Ti6Al4V Substrate N. Xiao, B. Yang, F.F. Du, Y. Wu, X. Zhao and G.W. Qin	91
An Effect of Coating Parameters to Dry Film Thickness in Spray Coating Process M. Choikhrue, S. Prombanpong and P. Sriyotha	95
Chapter 3: Design and Testing of Concrete Structures	
Compressive Strength Effects on Flexural Behavior of Steel Fiber Reinforced Concrete S.J. Jang, G.Y. Jeong, M.H. Lee, K. Rokugo and H.D. Yun	101
Experimental and Theoretical Analysis of I-Pillars of Noise Barriers Made of Prestressed Steel Fiber Concrete, Prestressed Concrete and Reinforced Concrete with Footings Length of 600 mm	
J. Čech, J. Kolísko, P. Tej, P. Pokorný and A. Kohoutková	105
Control of Drying Shrinkage of Magnesium Silicate Hydrate Gel Cements T.T. Zhang, X.M. Liang, M. Lorin, Z.L. Wu, C. Cheeseman and L. Vandeperre	109