

Table of Contents

Preface, Committees

Chapter 1: Applied Material Science, Technologies of Processing and Synthesis

Microstructure and Tribological Properties of Sub-Microcrystalline Carbon Steel Produced by Severe Plastic Deformation	3
H. Kato, K. Yamashita, E. Sentoku and Y. Todaka	
Production of Biodiesel from Palm Stearin Using Solid Catalyst Assisted with Co-Solvent	9
W. Songoen, V. Punsuvon, W. Arirop and A. Timyamprasert	
The Synthesis and Photocatalytic Performance of Samarium Doped Mesoporous Titania	15
J.W. Shi, D.D. Ma and Y.J. Zou	
The Effect of Shot-Peening on Thermal Residual Stress around the Singular Point of Cu-Low Alloy Rail Steel in Welded Joints	20
A. Wisessint, S. Boonrod and K. Chaiprasert	
Characterization of Dental Metal-Ceramic Interfaces of Heat Pressed Ceramics on Co-Cr Frameworks Obtained with Different Technologies	25
L. Porojan, M. Bîrdeanu, C. Savencu and S. Porojan	
Synthesis of Supplement Based on Calcium Hydrosilicate for Dry Mixes	31
V. Loganina, I.S. Pyshkina and G.V. Martyashin	
Heat Treatment, Mechanical Properties and Microstructure of T-Joint Steel Arc Welded	36
Y. Purwaningrum, D. Darmawan and P.L.T. Kusuma	
Constitutive Model for Densification Kinetics of Copper Powder	41
Y.H. Kang and S.J. Lee	
Removal of Cu²⁺ from Aqueous Water by Adsorption onto the Efficient and Recyclable Durian Shell-Derived Activated Carbon	46
L.G. Bach, D.V.N. Vo, T.D. Nguyen, V.T.T. Ho and V.T. Tran	
High Photocatalytic Activity of Oliver-Like BiVO₄ for Rhodamine B Degradation under Visible Light Irradiation	52
H.V. Nguyen, T.V. Thuan, D.T. Sy, T.D. Nguyen, D.V.N. Vo and L.G. Bach	
Preparation and Characterization of Advanced PtRu/Ti_{0.7}Mo_{0.7}O₂ Catalysts for Direct Methanol Fuel Cells	57
V.T.T. Ho, L.G. Bach and D.V.N. Vo	
Synthesis the New Nanostructure Ti_{0.7}Ir_{0.3}O₂ via Low Temperature Hydrothermal Process	64
T.T. Huynh, A.V. Nguyen, H.Q. Pham, L.G. Bach and V.T.T. Ho	
A Novel Benzo[d,e]Chromene for Organic Light Emitting Diodes (OLEDs)	71
B. Somchob, S. Sahasithiwat and R. Jitchati	
Analysis of the Structures and Thermal Properties of Hexanediamine Adipate and Pentanediamine Adipate	76
X.W. Yang, X.M. Hao, J.M. Wang, Y.B. Liu and H.L. Kang	
Synthesis the New Nanostructure Ti_{0.7}W_{0.3}O₂ via Low Temperature Solvothermal Process	84
T.T. Huynh, H.Q. Pham, A.V. Nguyen, L.G. Bach, S.T. Nguyen and V.T.T. Ho	
The Comparison of Surface Modification Methods of the Heavy Metals Adsorption of Activated Carbon from Rice Husk	91
H.T. Ma, V.T.T. Ho, N.B. Pham, L.G. Bach and D.T. Phan	
Antibacterial Properties, Shore Hardness and Chemical Resistance of Epoxy Coatings Containing Finely Ground Secondary Raw Materials for Hygienic Plants	97
J. Hodul, J. Hodná and R. Drochytka	

Chapter 2: Design and Research in Mechanical Engineering

Design of a 2.4GHz-Microstrip Line Filter Using the Semicircle Defected Ground Structure	105
P.C. Chen, C.L. Pan, T.Y. Lai and T.U. Lin	

The Problems of Measuring Profile and Roughness of Turbine Blades S. Egorov, A. Kapitanov, D. Loktev, S. Fedorov and T. Egorova	110
Ubiquitous Materials for the Logistic Information System S.Y. Lee	117
Issues about the Determination of a Mechanical Model for Masonry Analysis C. Cusano and C. Cennamo	121
A New Framework for Myocardium Constitutive Parameters Estimation Y.Q. Li and Z.Q. Huang	128
Design of an Ideal Low Pass Microstrip Line Filter Using the Defected Ground Structure P.C. Chen, C.L. Pan, J.D. Huang and S.H. Hong	133
Three-Dimensional Finite Element Analysis of Dental Implant Threads A. Yodrux, N. Yodpijit and M. Jongprasithporn	138
Controlling Chaotic Dual-Ring Erbium-Doped Fiber Laser by Modulating or Shifting the Loss S.L. Yan	147
An Efficient Optoelectronic System for Remote Salinity Water Sensing L.R. Villarreal Jiménez, A.J. Rodríguez Rodríguez, S.U. Enríquez Sías, C. Elizondo González, H.G. Barrón González, M.J. Erro Betrán, W.E. Rodríguez Rodríguez and R.F. Domínguez Cruz	152
Analysis of Primary Short Circuited Melted Mark Evidence Identification in Electrical Fire Case E.X. Li, N. Xu, N. Li, H. Ma, J.B. Shi and M. Zhao	161
Dynamic Behavior of a Cracked Woven Composite Beam under Compression I. Demirci and M. Yetmez	166

Chapter 3: Transportation and Industrial Engineering

Research on Highway Intelligent Monitoring and Warning System Based on Wireless Sensor Network Z.G. Guan, Q.H. Miao, W.H. Si, J. Lu and J. Liang	173
Design of Highway Intelligent Vehicle Guidance System J. Liang, Q.H. Miao, W.H. Si and J. Lu	177
Study of Sand Production Using Geomechanical and Hydro-Mechanical Models S.T. Pham	181
Using Micro-Simulation VISSIM to Study the Effectiveness of Left-Turn Waiting Area Implementation D.Z. Sun	187