

Table of Contents

Preface

Chapter 1: Materials for Functional and Special Applications

Investigation of Electromechanical Properties of CF Monolayer T.H. Dinh, H.L. Nguyen, T.Q. Tran and V.T. Do	3
Microwave Absorption Performance of Durian-Husk-Derived Carbon Nanomaterials Q.D. Tran, X.Q. Pham, T.T. Nguyen, D.V. Le, N.L. Nguyen, N.H. Ngo, T.A. Vu, V.H. Nguyen, V.T. Nguyen and T.A.X. Chu	9
Selective Carbon Monoxide-Gas-Sensing Properties over CuO/Rb₂CO₃ Nanohybrid Structure M.H. Nguyen, V.H. Nguyen, T.H. Pham, D.H. Phung and M.H. Nguyen	17
Study of Localization-Delocalization Transition of Light in Photonic Moiré Lattices Fabricated with Saturable Nonlinear Materials T.D. Ngo, C.C. Duong, L.T. Nguyen, T.L. Nguyen, D.A.Q. Nguyen and V.H. Nguyen	29
Spatial Solitons in Moiré Photonic Lattices in Cubic-Quintic Competing Nonlinear Material T.L. Nguyen, T.D. Nguyen, T.H. Tran, T.D. Ngo, D.T. Do and V.H. Nguyen	35

Chapter 2: Materials and Technologies for Energy Conversion and Energy Storage

Effect of Am-241 Irradiation on ZnO Crystallinity with Different Annealing Temperature R.M. Amelia, S. Rahastama and M. Musyarofah	45
Addressing of Aluminum Anode Based Battery Challenges: Electrochemical Effect of Zn-Mn Electrodeposition S. Nur'aini, W. Widiyastuti, T. Nurtono and H. Setyawan	53
Oil Palm Empty Fruit Bunch (OPEFB) Activated Carbon as Promising Electrode Materials for Battery Y.M. Pangestu Utomo, R. Risnawati, F.M. Rohimsyah, M. Tominaga, F. Kurniawan, W. Astuti, A.I. Ismail and Y. Triana	61

Chapter 3: Corrosion Performance and Functional Coatings of Structural Materials

Corrosion Performance of Steel Bar Embedded in Seawater Mixed Mortar with Batching Plant Waste P. Astuti	79
Stress Corrosion Cracking of Brass in Chloride Solution S. Hastuty, Y.A. Ramadhan, F.K. Nadhor, M. Awwaluddin, F. Triawan and F. Mahmuddin	93
Development of Low-Thermal Emissivity Coating Using Aluminum Particles W. Kitisatorn and P. Pongmuksuan	105

Chapter 4: Strength of Materials and Structural Mechanics

Study of Surface Damage of Train Wheels Using Finite Element Method E. Phongphinitana, N. Lakong, R. Jerapong, N. Oonsudklong, J. Boonprakong, A. Bonnet and P. Promdirek	113
Molecular Dynamics Study on the Mechanical Properties of BCC Carbon Steel R. Budiantono, W.J. Sari, G.K. Sunnardianto, M.H. Mahyuddin and A.G. Saputro	119
Finite Element Study for Vibration of Annular Plates Resting on Concentric Ring Support Y. Narita and F. Mahmuddin	137