

Table of Contents

Preface

Chapter 1: Advanced Materials and Chemical Engineering

Supramolecular Gels Based on Azobenzene Derivatives H.Z. Zhang	3
Graphene Based Polarization-Dependent Terahertz Photodetector Y.Z. Li	13
Synthesis of the COFs: From Design Principle to Synthetic Reactions S.D. Zhuang	21
Cobalt Molybdate Incorporated Thermoset Composites: Preparation and Characterization L. Song, M.S. Niu and Y. Wang	31
Influence Study of the Plastic Deformation Mode on the Micro-Indentation Mechanical Properties for the Pure Molybdenum J. Li, P.F. Feng, F.G. Li, Q.H. Li and L.L. Duan	39
Engineering Modified Mesoporous Silica Catalysts through Porosity and Surface Acidity Control for Selective Production of DME R. Viscardi, V. Barbarossa, R. Maggi and F. Pancrazzi	45
Improved Coating Adhesion on Polymers with Novel Laser Machining Pre-Treatment Z.D. Yang and C. Goode	51

Chapter 2: Computational Materials Science

Comparative Studies on VS₂ Bilayer and VS₂/Graphene Heterostructure as the Anodes of Li Ion Battery R.Z. Dong	61
Interaction of Viscoelastic Tube with Inner Nonuniform Coating of Variable Thickness and Rigid Cylindrical Insert K.E. Kazakov and S.P. Kurdina	67
A 3D Dynamic Molecular Dynamics Simulation Study: Diffusion of Two Types of Sphere Janus Colloidal Particles Q.L. Ma	73

Chapter 3: Building Materials and Structures

Fabrication and Characterization the Properties of Decorative Tile from White Cement and Waste Glass Powder T. Thongchai and K. Poolsawat	85
Durability and Mechanical Properties of Self-Compacting Concrete Incorporating Recovered Filler from Hot Mix Asphalt Plants and Recycled Fine Aggregate S. Ghafari, F. Moghadas Nejad and O. Corbu	95
Support Vector Machine (SVM)-Based Optimal Design Procedure of Fly Ash Blended Concrete T.W. Kim, J.Y. Lim, X.Y. Wang and Y. Han	103
R-Curve Characterization of Crumb Rubber Modified Asphalt Mixtures Incorporating Warm Mix Additive at Low Temperatures S. Ghafari and F. Moghadas Nejad	109
Progressive Collapse Resisting Capacity of RC Flat Slab Buildings with Varying Spans and Storey Heights S. Garg, V. Agrawal and R. Nagar	115
Effects of Recycled Aggregate Replacement Rate on Compression Mechanical Behavior of Concrete Based on Base Force Element Method L.P. Ying and Y.J. Peng	121

Make Full Advantage of New System - Research on the Design, Construction and Use of Low-Energy and Industrialized ICF House in Guanzhong Rural Areas of China G. Song, W.J. Chen, R. Cao and X.X. Li	127
One-Part Geopolymer Synthesis of Greek Fly Ash O.A. Panitsa, D. Kioupis and G. Kakali	135