

Table of Contents

Preface

Chapter 1: Steel and Alloys

Fracture Evaluation of Anisotropically Deformed Advanced High-Strength Sheet Steel through Stress-Based Forming Limit Curves and Fracture Loci W. Polpruk, K. Chongbunwatana and S. Panich	3
Simulative Study on Anisotropic Deformation of a Large Sheet-Hydroformed Motorcycle Fuel Tank D. Kumpunya, K. Chongbunwatana, W. Polpruk and S. Panich	11
Scanning Strategy Effects on Melt Pool Dynamics and Surface Quality in Selective Laser Melting of Ti-6Al-4V K. Khemabulkul, P. Ninpetch, P. Chuchuy and P. Kowitwarangkul	19
Multi-Stage Forming Process Design through an Innovative, Iterative Full-Cycle Simulation with Automatic Springback Compensation for an Aluminum Hood Outer Panel J. Saengpetch, S. Panich, K. Suwannarod and K. Chongbunwattana	27
Study on Microstructure Evolution and Wear Resistance Properties of Laser Cladding Applied on R900A Rail Steel Y. Pukkate, H. Koiprasert, P. Sheppard, E. Viyanit and P. Lertvijitpun	35
Study of Die Deformation Influence on Part Springback of an Automotive Chassis Component P. Yindeepimol, S. Panich, S. Lolupiman and K. Chongbunwatana	43

Chapter 2: Welding

Hardness Reduction in SA-335 P11 Welds by GTAW Using Controlled Interpass Temperature and the Temper Bead Technique without Post Weld Heat Treatment T. Panlai, N. Rueangmankhong, K. Kijjanont and C. Tippayasam	53
Enhanced Weldability and Microstructural Characteristics of A536–A36 Dissimilar Joints Using Buttering and Preheating Techniques J. Palomas, W. Pattanavibool, A. Kaewvilai and C. Tippayasam	63
Development of Geopolymer-Based Weld Backing Using Recycled Industrial Waste for A36 Steel Welding Using GMAW Process P. Techapromwut, A. Kaewvilai and C. Tippayasam	73
Effect of Post Weld Heat Treatment and Filler Metal on the Microstructure, Mechanical Properties, and Corrosion Resistance of Dissimilar Welds between Carbon Steel and Stainless Steel J. Junpattanasit, J. Palomas, A. Kaewvilai and C. Tippayasam	81

Chapter 3: Polymers and Composites

Rice Husk Fiber-Based Polishing Pad for Chemical Mechanical Polishing (CMP) of Sapphire S. Duangchan, N. Bun-Athuek, M. Ketsuwan, M. Mudden, P. Khajornrungruang and K. Suzuki	91
Influence of Filler on the Interfacial Strength between TPE and PP Composites K. Noknoi, P. Kantithammakorn, W. Kitisatorn, N. Intawong and S. Patcharaphun	97
A Preliminary Investigation on Recycled PET-Derived Polyurethane Films: Role of NCO/OH Ratio in Film Development P. Thusanaphoom, K. Pokamas, T. Yingshataporn-A-Nan, T. Panyachan, N. Parneam, S.I.N. Ayutthaya, W. Chailad, S. Songsri and N. Sukhawipat	107
Structural Study of Modified-Recycled PET from Drinking Bottle Waste by Using Multifunctional Chain Extenders N. Parneam, P. Thusanaphoom, N. Sukhawipat, J. Tharajak, J. Wootthikanokkhan and S.I.N. Ayutthaya	115

Effects of Plasticizers on Physical and Mechanical Properties of Tamarind Kernel Powder-Gelatin Film	
Y. Pukdeyoung, B. Wonganu, S. Chuetor and S. Kirdponpattara	125
TiO-Chitosan Functionalized Polypropylene Nonwovens for Air Filtration Applications	
B. Techo, S. Metanawin and T. Metanawin	133
Chapter 4: Functional Materials	
Development of a Self-Healing Coating by Microencapsulation Technique	
P. Sunsarat, P. Pongmuksuwan and W. Kitisatorn	143
Development of an Electrochemical Sensor for On-Site Detection of Perfluorooctane Sulfonic Acid (PFOS)	
P. Rungsri, A. Phongphut, K. Inpor, S. Jamikorn, V. Somsongkul and C. Thanachayanont	151
Effect of Hydrazine Hydrate on Reduced Graphene Oxide for Enhanced Electrochemical Sensing of Pb(II)	
S. Chanpimai, A. Phongphut, K. Inpor, S. Jamikorn, V. Somsongkul and C. Thanachayanon	159
Study of Silver Supported on Zinc Oxide Catalyst for the Oxidation of Diesel Particulate Matter	
T. Thaisruang, A. Sawatdimongkon, B. Sawatmongkon, T. Wongchang, W. Temwutthikun, P. Promhuad and K. Theinnoi	169
Effect of Metal Cation Composition in Magnesium-Aluminum Layered Double Hydroxide during Adsorptive Removal of Cr(VI) from Aqueous Solution	
N.P. Subedi, K.N. Ghimire and S. Khanal	179