

Table of Contents

Preface

Chapter 1: Material Processing and Forming Technologies

Inline Semisolid Rolling of Al-5%Mg Strip Cast Using Twin Roll Caster T. Haga, H. Ochi, H. Fuse, H. Watari and S. Nishida	3
Semisolid Forging of Al-10%Mg T. Haga, H. Ochi, H. Fuse, H. Watari and S. Nishida	9
Microstructure on Inner Surface of Cell Walls inside Aluminum Alloy Foam Fabricated via Semi-Solid Route S. Takamatsu, N. Tsuchida and S. Suzuki	15

Chapter 2: Materials for Opto- and Microelectronics

Study on Film Morphology of Liquid Droplet Evaporation in Confined Space W.X. Wu, J.K. Chen, W. Chen and Z.P. Yin	27
Voltage-Induced Director Orientations in IPS-Liquid Crystal Cells with Different Electrode Structures R. Suryantari and C.Y. Huang	33
Optical Absorption and Bandgap Modulation in Diamond-Like Carbon Films for Anti-Reflection T. Srisantirut, W. Pengchan and T. Phetchakul	39
Effect of Channel Length Variation on the Electrical Conductivity of Passivated Back-Gated Graphene Field-Effect Transistor (GFET) Using Silvaco TCAD Tools H. Guzali, N.I. Ayob, A.A. Md Ralib, M.A. Md Zawawi, C.R. Che Hak and Z. Ahmad	47
The Heat Dissipation Effect of Liquid Cooling Heat Sink Based on Triply Periodic Minimal Surface Structure S.K. Liao, J.Z. Zhang, H.Y. Li and C.H. Kuo	57

Chapter 3: Bio-Based Materials

Study on the Properties of Water Bamboo Shoot Shell as Bio-Based Flame Retardant and its Epoxy Composite Application C.L. Chiang and W.R. Zheng	67
Thermal and Rheological Properties of Hemp Fiber/Polybutylene Succinate (PBS) Composites L. Techawinyutham and S. Mo-on	73
Additive Manufacturing of HDPE Composites Reinforced with Alkali-Treated Saccharum Munja Fibers: Processing, Characterization, and Properties N.K. Arya and A. Singh	81
Hemp Fiber Derived Cellulose Separator Modified with Sodium Alginate for Stabilizing Zinc Anode S. Natheetumrong, D. Aht-Ong and P. Pattananuwat	89
Hybrid Reinforcement Effects of Water Hyacinth Fibers and Powder on the Mechanical Properties of Epoxy-Based Composites K. Pansod, N. Sumrith and J. Wongsu	95
High-Speed Impact and Fracture Performance of Sustainable Banana Fibre-Graphite Epoxy Composites for Protective Structural Applications A.R. Othman, A.H. Hilmi, A.R. Abdul Hamid and S.A. Azman	101
Processing and Drying Characteristics of Duckweed as a Candidate Bio-Based Material for Composites W. Eawboonyanurak, W. Kunthawongse, P. Sutakhote and J. Priyadumkol	107

Sustainable Epoxy Composites Reinforced with Water Hyacinth Powder: Effects on Mechanical Properties	
N. Sumrith and C. Ngaowthong	113
Preparation of Sugarcane Bagasse-Derived Cellulose Nanofibers via Deep Eutectic Solvent and Chemical Oxidation	
Y.F. Shih, T.Y. Pan, T.Y. Lu, T.H. Huang, C.W. Chang and Y.H. Chung	121
Effect of Welding Energy on Three Different Interlayers on the Strength of Ultrasonic Welded Bamboo Strips	
P. Sawangbunditkun, I. Preechawuttipong and R. Peyroux	129
LCA Comparison of Traditional and Bio-Based Epoxy Resin for Aerospace Composite Materials	
A. Bologna, R. Dinu, A. Mija and A.M. Grande	135