

Table of Contents

Preface

Chapter 1: Materials for Electronics

Optical and Electrical Characterization of Polymer Dispersed Nematic Liquid Crystals S. Mani, M. Pradhan, P. Rai, S. Khosla and P. Sarawade	3
Suppress Short Channel Effects on Split Channel-Cylindrical GAA TFET Using Buried Oxide Layer P. Dhake, J. Ghosh, M. Joshi, R. Mathew and A. Beohar	15
Spray Pyrolyzed Praseodymium Doped SnO₂ Thin Film with Fast Response to LPG: Analysis Based on Microstructural Features S. Deepa, P.K. Krishnan and B. Thomas	23
Solvent Effects on the UV-Visible Absorption and Emission of Tris[4-Diethylamino)Phenyl]amine S. Singh, A. Singh Nain and A. Kumar	37

Chapter 2: Materials Processing

Analysis of the Influence of Build Plate Pre-Treatment and Process Parameters on the Bonding of Additively Manufactured Parts of TiAl₆V₄ to the Build Plate C. Bay, A. Mahr, A. Hofmann, C. Wienert and F. Döpfer	49
Laser Metal Deposition (LMD) Toolpaths with Adaptive Capability for Complex Repairs and Coating Geometries I. Ortiz, P. Alvarez and M.A. Montealegre	59
Innovative Method of Embedding Optical Fiber inside Titanium Alloy Utilizing Friction Stir Forming H.M. Tabatabaei, T. Ohashi and T. Nishihara	67
Towards a Model-Based Approach for the Optimization of the Mechanical and Economical Properties of Laser-Based Plastic-Metal Joints J.M. Berges, K. van der Straeten, G. Jacobs and J. Berroth	75
Center Line Globular Structure of Strip Cast Using High Speed Twin Roll Caster T. Haga	81
Investigation of End Milling Process by Machine Tool Equipped with an Idling-Stop Function in a Feed Driving System Y. Mizuguchi, T. Hirogaki and E. Aoyama	87
Finite Element Modeling of Upper Ball Joint in a Two-Step Hot Forging Process N. Siripath, S. Suranuntchai and S. Sucharitpwatskul	95
Casting of Wire Using Twin Wheel Caster with Melt Holding Nozzle T. Haga, N. Okuda, H. Watari and S. Nishida	103

Chapter 3: Technologies of Welding Production

Optimization of Resistance Spot Welding Parameters in a Shop Floor Environment to Achieve Desired Spot Size in Low Carbon Steel Sheet J. Bagali, N.V. Nanjundaradhya and R.S. Sharma	111
Optimization of Process Variables for Prediction of Penetration Depth of HSLA Steel Welds Using Response Surface Methodology D. Pathak, D. Kumar, R.P. Singh and V. Balu	119
Microstructural and Mechanical Properties of Dissimilar Aluminium Alloys by Friction Stir Welding K. Sekar and P. Vasanthakumar	129

Analysis of Thermal Fields, Weld Strength and Microstructural Studies of Friction Stir Dissimilar Weldments of AA6082 and AA7075 M.V.A. Ramakrishna and K. Srinivas	139
Mechanical and Metallurgical Characteristics of Rotary Friction Welded Low Carbon Steel Plate/Rod Joints T. Dhamotharakannan, P. Sivaraj, M. Seeman and V. Balasubramanian	153

Chapter 4: Building Materials

Pervious Concrete Utilized as a Base Slab of Pavement Edge Drains J. Endawati and A. Febriansya	163
Experimental Study on Multi-Segmented Circular or Non-Circular Pipes to Determine the Pipe Stiffness D. Chelot and P. Upadhyaya	171
Coal Ash and Rice Husk Ash Binder for Manufacturing Hollow Blocks Z.S. Culilang	179
Flexural Behaviors of Modified Recycled Aggregate Concrete Reinforced with Pultruded GFRP S. Ismail and M. Ramli	189