

Table of Contents

Preface

Materials Science and Engineering: invited papers

Effect of Residual Aluminum Thickness on Microstructure and Strength of Friction Stir Spot Welded Aluminum Alloy/Copper Lap Joint M. Watanabe and S. Sasako	3
Effect of Low-Temperature Aging on Thermally-Induced Phase Transformation of NiTi Wire with a Wide Range of Grain Sizes Z.H. Zhao, J.P. Lin, J.Y. Min, Y. Hou and B. Sun	9
Rotational-Moulded Building Blocks for the Circular Economy S.P. Cestari, P. Martin, P. Hanna, M. Kearns and L.C. Mendes	17
Multi-Material Composition Optimization vs Software-Based Single-Material Topology Optimization of a Rectangular Sample under Flexural Load for Fused Deposition Modeling Process V. Hassani, H.A. Mehrabi, C. Gregg, R.W. O'Brien, I.F. Ituarte and T. Tjahjowidodo	23

Chapter 1: Properties and Processing Technologies of Steel and Alloys

Influence of Welding Speed on Hard-facing Deposited by MIG Welding A. Chanchana, M. Sriswat, R. Sangkatip, W. Obrom and P. Panawan	47
Effects of Nozzle and Roll on Surface Condition of Al-1%Si Strip Cast Using Vertical type High Speed Twin Roll Caster T. Haga, T. Okada, S. Nishida and H. Watari	53
Casting of Thin Aluminum Alloy Rod Using Twin Wheel Caster Equipped with Rotating Side Dam Plates T. Haga, N. Okuda, H. Watari and S. Nishida	61
Gravity Casting and Hot Forging of Al-Mg Alloy and Al-Mg Alloy with Fe Added T. Haga, T. Sugishita, H. Fse, H. Watari and S. Nishida	69

Chapter 2: Corrosion Behaviour and Corrosion Protection

Gravimetric and Data Analysis of the Protection Performance of Plant Extracts on Plain Carbon Steel in Dilute H₂SO₄ Solution R.T. Loto, C.A. Loto, J. Okeniyi, E.I. Agobe and A. Opeoluwa	79
Corrosion of Aluminum Metal Matrix Composites: A Review of the Effect of Manufacturing Processes, Processing Routes and Secondary Phases R.T. Loto and A. Adeleke	89
RETRACTED: Corrosion Inhibition Effect of Neem Leaf Oil Distillates on Low Carbon Steel in Dilute HCl and NH₄Cl Acid Media R.T. Loto and K. Akpanyung	101

Chapter 3: Polymers and Composites

Mechanical Properties of SiC/Gr Reinforced Hybrid Aluminum Composites after Heat Treatment D. Rahmalina, H. Sukma, A. Rokhim and A. Suhadi	111
Preparation and some Physical Characterization of Rice Starch - Carboxymethyl Cellulose as Hemostatic Film A. Ruksanti, B. Mahapram, S. Thiansem, R. Koonawoot and S. Punyanitya	117
Experimental Investigation of Mechanical Properties and Effect of Porosity on Epoxy Granite Composite S. Nallusamy, M.R. Narayanan, K. Sujatha and R.S. Rekha	123

Preparation and Characterization of Electrosprayed Nanoparticles containing Ethyl Maltol Flavor M. Eltayeb	131
--	-----

Chapter 4: Building Materials and Structural Elements

Analysis of the Shear Behavior of Fiber-Reinforced Foam Concrete Beams Using Non-Linear Finite Element Method N. Helmi, M. Afifuddin and M. Hasan	139
Experimental Investigation on Unconfined Compressive Strength of Cemented Soils Admixed with Saturated GAC A. Uchaipichat	145
Comparison of Flexural Behaviour of Composite FRP with UHPC I-Beam Using Finite Element Analysis S.S. Saidin, A. Jamadin, S.A. Kudus and N. Mohd Amin	151
Strength of Polypropylene Fiber Reinforced Cement Mortar Composites with Variable Water/Cement Ratio N.D. Nikoloutsopoulos, S.P. Nikolopoulou and Z.G. Pandermarakis	157
Compressive Strength of Ultra High Performance Concrete (UHPC) Containing Palm Oil Mill Effluent (POME) T.K.A. Abdul Razak, S.A. Kudus, A. Jamadin and N.H. Suliman	165