

Table of Contents

Preface

Chapter 1: Strength of Materials and Structural Mechanics

Molecular Dynamics Study on the Mechanical Properties of BCC Carbon Steel R. Budiantono, W.J. Sari, G.K. Sunnardianto, M.H. Mahyuddin and A.G. Saputro	3
Finite Element Study for Vibration of Annular Plates Resting on Concentric Ring Support Y. Narita and F. Mahmuddin	21

Chapter 2: Corrosion Performance of Structural Metals

Corrosion Performance of Steel Bar Embedded in Seawater Mixed Mortar with Batching Plant Waste P. Astuti	33
Stress Corrosion Cracking of Brass in Chloride Solution S. Hastuty, Y.A. Ramadhan, F.K. Nadhor, M. Awwaluddin, F. Triawan and F. Mahmuddin	47

Chapter 3: Green Building Materials

Diagonal Shear Strength of Masonry Wall Using Mortar Joints Mixed with Rubber Tire Crumbs and Fly Ash R. Faizah, S. Yadi, E. Saputra, T.R. Saputra and Z.M. Ihza	61
Strength and Durability of Paving Block with Seawater and POFA (Palm Oil Fuel Ash) A. Dasar, D. Patah, M.A. Caronge, F. Mahmuddin and A. Apriansyah	69
The Impact of Fly Ash and Sea Sand on Strength and Durability of Concrete D. Patah, A. Dasar, F. Fakhrudin, B. Shintarahayu and A. Apriansyah	81
Formulation of a Mixture of Nutmeg Shell Waste with Coarse Aggregate for Optimal Compressive Strength Values in Lightweight Concrete B. Budiman and F. Mahmuddin	93

Chapter 4: Composites

On the Buckling Behavior of DLP 3D Printed PLA with AgNO₃ Addition I.K.A. Laksemana, M.A. Muflikhun, M. Handayani, Y.D. Rahmayanti, F. Mahmuddin and F. Triawan	103
Exploring the Effects of Composition and Thickness Variations on Polyurethane Density in Fishing Vessel Hatches as an Insulation Material: A Comprehensive Study S. Samuel, T. Tuswan, R.H. Kuncarajati, S. Jokosisworo, P. Manik and M. Muryadin	115
Unveiling the Potential of Waste Materials: Investigating the Novel Approach of Using Scrap Fabric-Inner Tubes Composites for Sound Absorption M. Muslimin, I.A. Rangkuti, S. Mulyono, V.N. Garjati, D. Lugyana and M.M. Azam	123
Utilization of Recycle LDPE (r-LDPE) Plastic and Galangal Stem Fiber for the Development of 3D Printing Filaments M. Muslimin, S.C.N. Syifa, E.S. Nugroho, L. Dhiya, M.M. Azam, F. Triawan and W.M. Wan Muhamad	135

Chapter 5: Mineral Mining and Processing

Fractionation Studies to Increase the Ni Grade of Sapolite Ores from the Wolo Mine Area, Kolaka Regency of Southeast Sulawesi, Indonesia M. Munahrudin, S. Sufriadin and I. Nur	147
---	-----