

Table of Contents

Preface

Chapter 1: Structural Metallic Materials

Comparative Evaluation of Zinc Coatings on Mild Steel: Microstructure and Corrosion Resistance F.Z. Lemmadi, I. Hamdi and F. Chabane	3
Mechanical Characterization of SMAW and TIG Welded Joints Using Machine Learning Techniques P. Satyanarayana Raju, G. Veerendra Kumar and A. Gopichand	11

Chapter 2: Materials and Technologies in Construction

Recyclability, Water Absorption and Durability of Unstabilized Clay Brick Reinforced with Straw S.O. Odeyemi, T.O. Omole, M.A. Adisa, M.A. Olawale and S.A. Alabi	21
Mechanical Behavior of Fiberglass-Reinforced Cementitious Composites at Low Fiber Concentrations D. Ferreira dos Santos and P. Bachmeyer de Meirelles	37
Experimental and Numerical Study of Flexural Strength of Kenaf Fibre-Reinforced Concrete Beams I.S. Ayeni, O.O. Popoola and J.F. Ekundayo	45
The Application of Base Isolation System as Earthquake Resisting Technology on Mulya Medika Hospital, Samarinda A.Y. Pratama and I. Ariani	61
Design and Performance Evaluation of HVAC Systems with Thermal Load and Duct Sizing Considerations Theater Buildings F. Yulia, P.M. Dana, Y. Bram, K.D. Lokollo and R.W.W. Partakusuma	73

Chapter 3: Energy Storage, Batteries, and Power Systems

Electrosynthesis of NaBH₄ from NaBO₂ for Hydrogen Storage A. Nur, A. Jumari, E.R. Dyartanti, M.D. Supardan, N. Nazriati, F.Y. Arrazy, R.N. Said, C.M.P. Pradana and R.D.B. Saputra	87
The Morphological Structure Analysis of Precursor and Active Cathode Material NMC-811 with Variations in Reaction Time, Holding Time, and Temperature A. Purwanto, A.S. Sucahyo, A. Kurniasari, F.S. Malinda and M.R. Utama	95
Smart Standalone PV-Based Street Lighting for Rural Areas in Wonogiri Regency I. Inayati, A. Ramelan, M. Nizam and M.R. Aulia Putra	103

Chapter 4: Aerodynamic Design

Numerical Analysis of a Five-Bladed Axial Fan Using Computational Fluid Dynamics (CFD): A Comparative Study for Aerodynamic Design Optimization M.A. Suleiman and F. Szodrai	111
Numerical Study of the Aerodynamics Stability of STU.1.M Drone at the Steady State Conditions S.S. AL-Mukhtar, M.A. Abdulwahid and A.M.A. Morad	129