

## Table of Contents

|                                                                                                                                                                                                                                                            |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Experimental Investigation of Machining Time and Optimization of Machining Parameters Using RSM and Genetic Algorithm (GA) on 2205-Duplex Stainless Steel</b><br>M. Gopal, E.M. Gutema and Y. Solomon                                                   | 1   |
| <b>Equilibrium and Kinetic Analysis on Cadmium Ion Sequestration from Aqueous Environment by Impregnated Chicken Feather Alkaline Biosorbent</b><br>A.A. Adeyi, M.C. Uzoukwu, L.T. Popoola, A.S. Yusuff, E. Bernard, A.A. Pam, A.T. Ogunyemi and A. Hamisu | 15  |
| <b>Testing, Evaluating and Simulate the Performance of the Newly Designed Drum for a Sunflower Threshing Machine</b><br>K.A.M. Ali, W.Y. Zong, L.N. Ma, G.G. Abd El-Wahhab and M. Li                                                                       | 29  |
| <b>Mixed Convective Heat Transfer in a Lid-Driven Concentric Trapezoidal Enclosure: Numerical Simulation</b><br>O.A. Olayemi, K. Al-Farhany, S.E. Ibitoye and A.M. Obalalu                                                                                 | 43  |
| <b>Comparative Study of a Pumping System Using Conventional and Photovoltaic Power in the Algerian Sahara (Application to Pastoral Wells)</b><br>R. Zegait, M.R. Bentraia, H. Bensaha and M. Azlaoui                                                       | 63  |
| <b>Analysis and Evaluation of a Three-Stage Anaerobic Digestion Plant for Management of Biodegradable Municipal Solid Waste</b><br>E.K. Orhorhoro, E.E. Lindsay and J.O. Oyejide                                                                           | 75  |
| <b>Design and Development of a Measurement System Dedicated to Estimate the Junction Temperature of Insulated Gate Bipolar Transistor Modules</b><br>B. Lamuadni, R. El Bouayadi, A. Amine and D. Zejli                                                    | 89  |
| <b>Mitigation of Reactive Power and Harmonics in a Case of Industrial Customer</b><br>D.B. Aeggegn, A.O. Salau, Y.W. Gebru and T. Agajie                                                                                                                   | 107 |
| <b>Optimal Design and Techno-Economic Analysis of a Grid-Connected Photovoltaic and Battery Hybrid Energy System</b><br>T. Adefarati, G. Sharma, A.K. Onaolapo, A. Njepu, K.T. Akindeji, S.O. Oladejo, G.D. Obikoya and I. Adeyanju                        | 125 |
| <b>Welding Defects Detection in Radiographic Images Using an Improved Denoising Technique Combined with an Enhanced Chan-Vese Model</b><br>R. Abdelkader, N. Ramou and M. Khorchef                                                                         | 155 |
| <b>New Mobile Cloud Computing Approach Based Multi-Agent System For OWL-S Services</b><br>S. Hamida and O. Kazar                                                                                                                                           | 173 |
| <b>Demand Forecasting Application with Regression and IoT Based Inventory Management System: A Case Study of a Semiconductor Manufacturing Company</b><br>A. El Jaouhari, Z. Alhilali, J. Arif, S. Fellaki, M. Amejwal and K. Azzouz                       | 189 |
| <b>Effect of Agricultural Mechanization on Production and Farmers Economy in Nigeria: A Case Study of Lagos State</b><br>K.O. Olatunji, O. Ogunkunle, O.A. Adisa and A. Taiwo                                                                              | 211 |