

Table of Contents

Preface

High Pressure Supercritical Carbon Dioxide Separation from its Mixture with Nitrogen at Different Temperatures R.M. El-Maghraby, M. Ramzy and A.K. Aboul-Gheit	1
Decontamination of Heavy Metals from Wastewater Effluent Using Polypyrrole/Polyvinylpyrrolidone Nanoparticles S.E. Zayan, A.H. El Shazly and M.F. El-Kady	15
Anodic Aqueous Electrophoretic Deposition of Graphene Oxide on Copper Using Different Cathode Materials E. Hares, A.H. El Shazly, M.F. El-Kady, K. Madih, H. Orleans-Boham and A.Y.M. Ali	21
Characterization of the Mixing Performance of an Innovative Hepatic Sinusoids-Based Microreactor Using Villermaux-Dushman Protocol M.A. Shouman, A.H. El Shazly, M.F. El-Kady and M.N. Sabry	28
Micro-Ribbons and Micro-Wires Silica Synthesis Using Bottom-Top Technique M. Nabil and H.A. Motaweh	33
Facile Fabrication of Porous and Hydrophilic Polystyrene Membranes Using Recycled Waste M. Khaled, H. Noby, W.A. Aissa and A.H. El Shazly	39
Experimental and Theoretical Studies of Thermophysical Properties of MgO-Water Nanofluid A.Y.M. Ali, A.H. El Shazly, M.F. El-Kady, H.I. Elqady, K. Madih and E. Hares	47
A Review on Titanium Dioxide Based Nanofluids: Synthesis and Stabilizing Techniques in Both “Pure (Single System) and Mixed (Hybrid System) Base Fluids” N.M. Serour, A.H. El Shazly, D.A. El-Gayar and S.A. Nosier	53
Effect of Smart Glazing Window on Energy Consumption inside Office Building A.M. Nageib, A.M. El-Zafarany, F.O. Mohamed and M.H. El-Hefnawy	72
Electrochemical Synthesis of Silicon and Gallium Arsenide Photovoltaic Thin Films: A Critical Review and a Novel Approach A. Bakkar	84
Modeling and Optimization of Photocatalytic Degradation of Methylene Blue Using Lanthanum Vanadate M. Samy, M.G. Ibrahim, M. Gar Alalm and M. Fujii	97
Superconducting and Electrical Resistivity of HTS Bi-2223 Doped by $(\text{Cr}_2\text{O}_3:\text{SnO})_x$ Nanoparticles H. Khalil, A.E. Kashyout, O. Hemeda and T. Meaz	104
Effects of Doping on Zeta Potential and pH of Polyaniline Colloidal Suspension M. Fuseini, A.H. El Shazly and M.F. El-Kady	114
Long-Term Assessment of 1,4-Dioxane Uptake via Duckweed with Emphasis on Operational Parameters R. Osama, M.G. Ibrahim, A. Elreedy and M. Fujii	121
Effects of Air Temperature on Combustion Characteristics of LPG Diffusion Flame A.M. Salman, I.A. Ibrahim, H.M. Gad and T.M. Farag	128
Numerical Simulation for Falling Film Thickness around Horizontal Tube in MVC and MED Evaporators A.A. Ibrahim, H.E.S. Fath and M.G. Ibrahim	139
Rate of Copper Ions Removal from Copper Sulfate Solution by Cementation on Steel Turbulence Promoters Using Stirred Tank Reactor A.M. Ismail, M.S. Mansour, D.A. El-Gayar and Y.H. Farid	151
Pyrolysis of Sugarcane Bagasse: The Effects of Process Parameters on the Product Yields A.G.H. Saif, S.S. Wahid and M.R.O. Ali	159
The Effect of Using Baffles on the Rate of Mass Transfer of a Cylindrical Stirred Tank Reactor F. Shokry, D.A. El-Gayar, M.A. El-Fattah, H.A. Farag and G.H. Sedahmed	168

Experimental Study on the Desalination System Using Humidification-Dehumidification Technology	
H. Abbady, M.S. Ahmed, H. Hassan and A.S.A. Mohamed	177
Evaluation of Stainless Steel as an Electrocatalyst for Electrooxidation of Urea - Rich Wastewater	
K. Madih, A.H. El Shazly, M.F. El-Kady, A.Y.M. Ali, H.I. Elqady and E. Hares	186
Removal of Copper Ions from Wastewater by Ion Exchange Resin Using Pulsation Technique	
E.H.A. El-Halim, D.A. El-Gayar and H. Farag	191
Biochar Synthesis for Industrial Wastewater Treatment: A Critical Review	
A.G. Kumi, M.G. Ibrahim, M. Nasr and M. Fujii	202
Towards Potential Removal of Malachite Green from Wastewater: Adsorption Process Optimization and Prediction	
R.M. Ali, M.A. Hassaan and M.R. Elkatory	213
Synthesis, Characterisation, and Performance of Polyaniline (PANI) in Metals Sorption	
H. Orleans-Boham, A.H. El Shazly, M.F. El-Kady and J. Chireboah-Ansah	222
A Study on Bio-Diesel and Jet Fuel Blending for the Production of Renewable Aviation Fuel	
R.M. El-Maghraby	231