

Table of Contents

Preface

Chapter 1: Functional Materials and Special Technologies

A Comparative Study of the Reinforcing Effect of Bauxite Residue in Pentaerythritol and Expandable Graphite Based Intumescent Systems A.I. Arogundade, P.S.M. Megat Yussof, F. Ahmad and I.D. Muhammad	3
Hydrothermal Synthesis of SnO₂ Doped NiO Nanoparticles for Acute Detection of Ethanol Gas A.A. Kulkarni, G.H. Jain, R.P. Patil, M.K. Deore, G.E. Patil and S.D. Shinde	13

Chapter 2: Carbon Capture and Storage

Assessment of Caprock Integrity Utilising Rock Failure Prediction Methodology for Carbon Capture and Storage (CCS): A Review N.N.S. Suhaidi, F.F. Kaylyn and N. Ismail	37
Role of Lorenz Coefficients in Carbon Capture and Storage Dynamics: A Case Study of the Air Benakat Formation R. Ramadhan, M. Abdurrahman, A. Arsad and V. Napitupulu	49

Chapter 3: Applied Biotechnologies

Bioremediation of Crude Oil Emulsion in Seawater Using <i>Chlorella</i> sp. I.H. Yunos, M.S. Mohd Syukri, M.A. Mohd Ibrahim and N. Abdullah	61
Exploring the Impact of Metal Oxide Nanocatalysts on Biodiesel Production: A Review Z.A. Sayhood and Z.T. Alismaeel	71

Chapter 4: Technologies in Petroleum Engineering

Optimizing Fines Mitigation: Evaluating the Effect of Clay on Sand Agglomeration for Enhanced Sand Control D. Kamat and I.M. Saaid	89
Exploratory Analysis of a Green Resin with Carbon Nanotubes for Chemical Sand Consolidation J.D. Santos, I.M. Saaid, M.J.L. Cabiguen and L.C. Manalo	101

Chapter 5: Green Building Materials

Mechanical Performance of Various Typha-Lime Concretes: Influence of Binder Type and Binder/Aggregate Ratio I. Diaw, M. Faye, S. Hans, F. Sallet and V. Sambou	117
Predicting the Compressive Strength of Mortar Incorporating Bentonite Using Artificial Neural Networks M.A.T. Khatib, M.M.M. Altamami, M.F. Hamid and M. Alhawati	125
Laboratory Evaluation of Sustainable Asphalt Mixture with Different Types of Solid Waste Material Using Modified Asphalt Binder (SBS) M. Hamid Abd and I.A. Obaid	139