

# Table of Contents

## Chapter 1: Energy Engineering

<b>Simulation and Economic Analysis of a Mobilized Thermal Energy Storage System for Mediterranean Climate Buildings: Case Study</b> J. Rishmany, C. Lahoud, R. Imad and M. Daaboul	3
<b>Optimizing Power Quality in Hybrid Renewable Energy Systems through Advanced Intelligent Control Techniques</b> H. Kumawat, P. Tundwal and V. Dave	13
<b>Optimizing Grid-Interfaced Rooftop Solar Plant Installation for Sustainable Energy Generation</b> P. Tundwal, H. Kumawat and V. Dave	25

## Chapter 2: Sustainable Approaches in the Development of Urban Drainage Systems

<b>Exploring Environmental Sustainability Research Using Experimental Methods -Taking the Vegetated Swales Facility</b> F.M. Chang and Y.P. Wu	37
<b>The Concept of Optimizing the Environment and Moving towards Sustainable Development Goals with Green Infrastructure</b> F.M. Chang	43
<b>Laboratory Evaluation of Load-Bearing Behavior and Drainage Ability of Pervious Concrete Pavement</b> T.K. Lam, D.T. Nguyen, V.A. Ngo, H.P.D. Ninh and T.P. Huynh	49

## Chapter 3: Water Treatment and Distribution

<b>Assessing Rainwater Harvesting Potential in Seawater-Based Communities Using the Case Study of Poblacion Sitangkai, Philippines</b> M.F.Y. Lacsado and D.B. Montecastro	57
<b>Water Supply for Lawas Community: Investigating Demand and Enhancing Distribution Efficiency</b> Z.E.S. Lah and N. Bolong	75
<b>Bacterial Strain Identification from Drinking Water in Water Treatment Systems</b> M. Salisu Muhammad, M.H.D. Othman, M.H. Puteh, N.A.N. Nik Malek, A.R. Saidin, A.B.M. Yusof, R. Kamaludin, S. Maryam, S. Ojo, C.M. Liew, A.P. Parvin and N. Huda	83

## Chapter 4: Seismic Design of Buildings and Environmental Geology

<b>Analysis of Soil Fertility and Heavy Metals Contamination on Post- Mining Laterite Nickel Southeast Sulawesi, Indonesia</b> A. Tonggiroh, H. Pachri and M. Mustafa	99
<b>Evaluation of the Seismic Performance of a High-Rise Building in Lima, Peru, Using the FEMA 440 and SEOAC Methodologies</b> A.N. Lucana, R.M. Delgadillo and J.R. Casas	113