RECENT ADVANCES IN BIOENVIRONMENTAL ENGINEERING

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Recent Advances in Bioenvironmental Engineering

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CONTENTS

PREFACE ........................................................................................................ iii

CHAPTER 1
Pretreatment of Lignocellulosic Oil Palm Empty Fruit Bunch Wastes as Valuable Carbon Source for Production of Useful Cellulases Enzymes
Mohamed Ismail Abdul Karim, Faridah Yusof, Mansyia Zauri Abd. Wahid And Md. Zahangir Alam

CHAPTER 2
Utilization of Cassava Peel as Animal Feed
Parveen Jamal, Tijani Iyabo Dasola Ruqayyah, Md Zahangir Alam And Mohamed Elwathig Saedd Mirghani

CHAPTER 3
Pervaporation Process: Separation of Bioethanol From Direct Fermentation of Cassava Starch
Md. Zahangir Alam, Nassereideen A. Kabbashi And Salma Hawari

CHAPTER 4
Production of Selected Hydrolytic Enzymes from Agro-Residues
Hanzah Moh. Salleh, Md. Zahangir Alam And Aliyu Saihi

CHAPTER 5
Kinetic Studies on Biodiesel Production from Crude Palm Oil
Nassereideen Ahmed Kabbashi; Md Zahangir Alam, And Ashraf M. A. Al-Fusati

CHAPTER 6
Production of Process Water from Biologically Treated Palm Oil Mill Effluent (POME) Using Ultrafiltration Membrane
Mohammed S. Jami, Suleyman A. Mayibi, Munirat A. Idris

CHAPTER 7
Speciation of Fast and Slow Biochemical Oxygen Demand
Zaki Zainudin. Norazah Abdul Rahma2, Norizan Abdullah

CHAPTER 8
Water Sampling and Testing for Nonpoint Source Pollution Load Estimation in Malaysia
Abdullah Al Mannun

INDEX .......................................................................................................... 198
CHAPTER 6

Production of Process Water from Biologically Treated Palm Oil Mill Effluent (POME) using Ultrafiltration Membrane

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Introduction

Global water consumption has doubled every 20 years along with population growth, urbanisation and expanding economic activities and this increase has resulted in intensified pressure on water resources. The world is also facing the dilemma of the lack of access by the poor to safe drinking water. There are 884 million people, or 13% of the world population, who do not use an improved source of drinking water (WHO and UNICEF 2010). If the current trends of water demand continue, water shortages will become even more intense - approximately half of world’s population will suffer from high water scarcity in 2030. Coupled with this, climate change has emerged as a driving force in increasing stresses on water resources by changing the physical condition of water resources and water consumption patterns, which could account for about 20% of the increase in global water scarcity (UNESCO-WWAP 2009). The increasing pressures on water supply and the problems of wastewater disposal can be solved by water reuse. Palm Oil Mill Effluent (POME) is a highly voluminous liquid waste which is non-toxic, has an unpleasant smell and very polluting. There is an urgent need to find a compromising way that will enable the balance between the environmental protection and sustainable reuse of the water in POME.