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Comparative Study on Two-Step Fatty Acid Methyl Ester (FAME) Production from High FFA Crude Palm Oil Using Microwave Technique and Conventional Technique Preliminary Study of Rambutan (*Nephelium lappaceum*) Seed as Potential Biocoagulant for Turbidity Removal; Effect of Nanonization on Physicochemical Properties of *Centella asiatica* Powders; Chapter 3: Environmental Engineering; Carbon Dioxide Retention on Bentonite Clay Adsorbents Modified by Mono-, Di- and Triethanolamine Compounds; Leachability of Solidified Petroleum Sludge; Physical Absorption of CO₂ Capture: A Review Solubility of Carbon Dioxide in Aqueous Solutions of Piperazine (PZ) at Elevated Pressures Visible Light Photodegradation of Azo Dye by Cu/TiO₂; Photocatalytic Degradation of Diisopropanolamine in Heterogeneous Photo-Fenton System; UV/H₂O₂ Process for Removal of Total Organic Carbon from Refinery Effluent: Screening of Influence Factors Using Response Surface Methodology; Chapter 4: Process Systems Engineering; Modeling the Effect of Temperature-Induced Surface Tension Gradient in Coating Processes; Effect of Bulk Temperature and Heating Regime on Crude Oil Fouling: An Analysis A Comparison of Co-Current and Counter-Current Modes of Operation in Urea Prilling Tower Detection and Correction of Gain Mismatches of Wood-Berry Column Using Linear Residual-Input Ratio; A Taguchi-SQP Approach for Minimizing Energy per Unit Diesel Production at Crude Distillation Unit; Resilience Analysis of a Pipe Segment System Carrying Superheated Steam; Modeling of Gas Holdup and Pressure Drop Using ANN for Gas-Non-Newtonian Liquid Flow in Vertical Pipe; Application of Response Surface Methodology to Investigate CO₂ Absorption Column Temperature Rise Simulation of Hydrodynamics and Reaction Behavior in an Industrial RFCC Riser

Sommario/riassunto

Collection of selected, peer reviewed papers from the International Conference on Process Engineering and Advanced Materials 2012 (ICPEAM2012), June 12-14, 2012, Kuala Lumpur, Malaysia. The 39 papers are grouped as follows: Chapter 1: Advanced Materials Development, Chapter 2: Bioprocess and Biotechnology, Chapter 3: Environmental Engineering, Chapter 4: Process Systems Engineering

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Nota di contenuto	Physics Through the 1990s -- Copyright -- Preface -- Contents -- Executive Summary -- THE REVOLUTION IN PARTICLE PHYSICS -- WHAT WE WANT TO KNOW -- THE TOOLS OF ELEMENTARY-PARTICLE PHYSICS -- THE FUTURE OF ELEMENTARY-PARTICLE PHYSICS IN THE UNITED STATES -- RECOMMENDATIONS FOR UNIVERSITY-BASED RESEARCH GROUPS AND USE OF EXISTING FACILITIES IN THE UNITED STATES -- RECOMMENDATIONS FOR NEW ACCELERATOR FACILITIES IN THE UNITED STATES -- RECOMMENDATIONS FOR ACCELERATOR RESEARCH AND DEVELOPMENT -- RECOMMENDATIONS FOR THEORETICAL RESEARCH IN PARTICLE PHYSICS -- RECOMMENDATIONS FOR NONACCELERATOR PHYSICS EXPERIMENTS -- RECOMMENDATIONS FOR INTERNATIONAL COOPERATION IN ELEMENTARY-PARTICLE PHYSICS -- CONCLUSION -- 1 Introduction -- ELEMENTARY-PARTICLE PHYSICS -- WHAT WE KNOW -- WHAT WE WANT TO KNOW -- THE TOOLS OF

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Sommario/riassunto

Part of the Physics in a New Era series of assessments of the various branches of the field, Elementary-Particle Physics reviews progress in the field over the past 10 years and recommends actions needed to address the key questions that remain unanswered. It explains in simple terms the present picture of how matter is constructed. As physicists have probed ever deeper into the structure of matter, they have begun to explore one of the most fundamental questions that one

can ask about the universe: What gives matter its mass? A new international accelerator to be built at the European laboratory CERN will begin to explore some of the mechanisms proposed to give matter its heft. The committee recommends full U.S. participation in this project as well as various other experiments and studies to be carried out now and in the longer term.
