## **Table of Contents**

**Preface** 

	Chapter	1:	Machines.	Mechatronics	and Automation
--	---------	----	-----------	--------------	----------------

Modularity Design of Single Point Incremental Forming Machine T.N. Nguyen, S. Antonov, T.V. Hung, T.T. Hy and H.D. Lien			
<b>Building Augmented Reality Integrated Automated Supervisory Flush Valve Testing</b>			
System N.H. Tran and X.T. Le	13		
A Research on the Separation of Sand out of Cassava Slurry by Cyclone L.K. Dien and V.D. Hai	29		
Chapter 2: Heat and Mass Transfer, Engineering Thermodynamics			
Assessment of Thermal Performance of Non-Evaporative Cooling System Assisted with TEC Models at High Temperature Climate	41		
H.H. Jabbar, M.A. Al-Tayyar, T.M. Mansoor and S.W.M. Ali  An Investigation into Burner Configuration Effects on Premixed Flame Characteristics for	41		
LPG Diluted with CO <sub>2</sub>	52		
M.A. Al-Tayyar, D. Alkhafaji and H.A.K. Shahad  CFD Assessment of the Bubble Flow in a 3D Rectangular Column	53		
M.O. Ahmed, J.I. Humadi, A.A. Aabid, O.H. Kanam, M.A. Sanam, L.I. Saeed and A.H. Ibrahim	67		
Simulation of Beef Freezing Process and Evaluation of Influencing Factors V.V. Sim, D.H. Hoang and H.T.N. Huong	83		
Chapter 3: Applied Biotechnologies			
Predesign of Rice Straw-Based Cellulose Plant with Steam Explosion Method R.P. Anugraha, N.N.K.K. Dewi, A. Fadzlina and R. Renanto	97		
Fractionation of Oil Palm Fiber Using Green Solvent for Lignin Separation Y. Yesika, T. Hudaya, K.A. Hawboldt, H. Rusli and J.N.M. Soetedjo	105		
The Study on the Effect of Acid Concentration, Temperature, and Time on the Dehydration of Xylose to Furfural in Ethanol Solvent			
J.N.M. Soetedjo, R. Gunawan, B.C.N. Tambunan, J.C. Oey and H. Rusli	117		
Chapter 4: Technologies of Modern Production			
Influence of Brick Powder with Different Replacement Ratio on Concrete Performance and its Microscopic Mechanism			
T. Li and L. Tier	129		
Modeling and Simulation of Precipitation Process of Various Salt Components during Sea Salt Production H. Santoso, C. Harris, J.R. Witono and K.C. Wanta	141		
Reviews on the Effect of Single Point Incremental Forming (SPIF) Process Parameters on Surface Roughness of Aluminum Alloy AA1050-H14 Sheet Metal T.V. Nguyen, T. Vo, N.T. Phan and L.C.K. Dinh	151		
Determination of the Optimized Parameter of the Processing of SUS 304 Sheet Material to	131		
the Formability by SPIF Technology N.T. Phan, T. Vo, L.C.K. Dinh, T.T. Trinh and V.H. Dang	163		

## **Chapter 5: Strength of Materials**

Study on Finite Element Method for Solving Stress Concentration Problem Y. Zhou, Z.J. Bai, L.F. Zeng and X. Gong	175
Discussion on Fatigue Life Analysis Methods for Connecting Bolts of the Top Cover of Water Pump Turbines	
H.B. Li, L. Chen, C.J. Li, K. Hu, L. Qiu, X. Zhang, S.Y. Chen, D.L. Wang and M.M. Yin	181