

ISBN : 2461 - 0739



CONFERENCE PROGRAMS AND ABSTRACT

**INTERNATIONAL CONFERENCE
FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY 2018**

OCTOBER 30-31, 2018

*Palembang, Province of South Sumatera
Indonesia*

Organized By :



Collaborate With :





FOREWORD FROM GENERAL CHAIR 2nd FIRST 2018 INTERNATIONAL CONFERENCE

Welcome to 2nd FIRST 2018, It is with a great pleasure that we extend our warm welcome to all the participants of the 2nd FIRST 2018 International Conference, Forum in Research, Science, and Technology. This conference is held for second times and organized by State Polytechnic of Sriwijaya. The first conference in the series was held in State Polytechnic of Sriwijaya, Palembang, South Sumatera, Indonesia on October 18-19, 2016. It is a good collaboration of State Polytechnic of Sriwijaya, University of Cologne, University of Sunderland, International Islamic University Malaysia, and Politeknik Seberang Perai Malaysia. The 2nd FIRST 2018 International Conference has attracted 109 participants from 6 countries.

The 2nd FIRST 2018 particularly encouraged research students and developing academics to present and to discuss new and current work in the field of 3 Tracks, including Engineering and Science (Track 1), Computer Science and ICT (Track 2), and Social Science (Track 3). 109 selected papers were presented from 137 peer reviewed paper by reviewers drawn from the scientific committee, external reviewers and editorial board.

Finally, as the General Chair of the Conference, I would like to express my deep appreciation to all members of the Steering Committee, Technical Program Committee, Organizing Committee and Reviewers who have devoted their time and energy for the success of the event.

In the end, I hope you enjoy the conference and the beauty of Palembang.

Dr.Ir. Rusdianasari, M.Si.
General Chair of 2nd FIRST 2018



FOREWORD FROM DIRECTOR OF STATE POLYTECHNIC OF SRIWIJAYA

Dear all participants, welcome to Palembang, Indonesia. It is my great pleasure to have all of you who have come from many parts of the world, to join the 2nd FIRST 2018 International Conference, Forum in Research, Science, and Technology. This conference is initiated and organized by State Polytechnic of Sriwijaya in collaboration with State University of Cologne, University of Sunderland, International Islamic University Malaysia, and Politeknik Seberang Perai Malaysia.

It is also my great pleasure to see that this conference is an effective media to link the researchers from many parts of the world. The theme for the 2nd FIRST 2018 is “Applied Technology for Sustainable Development in Supporting Prosperous Human Existence”. It is expected it will be worthwhile platform for researchers to present their finding in the areas on multidisciplinary of Engineering and Science (Track 1), Computer Science and ICT (Track 2), and Social Science (Track 3). It has also provided an opportunity for the professionals and researchers to learn and share about the latest development and research in those 3 tracks.

Finally, on behalf of the conference committee, I would like to express my gratitude and great appreciation towards all of the authors, reviewers, and participants for the great contribution to ensure the success of this event.

Dr. Ing. Ahmad Taqwa, M.T.
Director of State Polytechnic of Sriwijaya

Organizing Committee

International Advisory Committee

Prof. Erry Yulian Triblas Adesta, International Islamic University, Malaysia
Prof. Dr. Rahmat Budiarto, Al Baha University, Saudi Arabia
Assoc. Prof. Dr. Augustus E. Osseo-Asare University of Sunderland, United Kingdom
Prof. Dr. Werner Rammensee, Cologne University, Germany
Prof. Badri Munir Sukoco, SE.,MBA.,Ph.D, Universitas Airlangga Indonesia

Steering Committee

Prof. Muhammad Nizam, Ph.D, Universitas Sebelas Maret, Indonesia
Prof. Dr. Mohammad Yeakub Ali, International Islamic University Malaysia
Assoc. Prof. Ahmad Hoirul Basori, King Abdulaziz University, Saudi Arabia
Mohammad Hossein Anisi, University of Essex, UK
Dr. Zulhadi Zakaria, Politeknik Seberang Perai, Malaysia
Dr. Ing. Ahmad Taqwa, M.T, Politeknik Negeri Sriwijaya, Indonesia
Prof. Dr. Ir. Siti Nurmaini, Universitas Sriwijaya, Indonesia
Assoc. Prof. Pindo Tutuko, Ph.D University of Merdeka, Malang, Indonesia
Dr. Dodik Siswantoro S.E., M.Sc. Acc, Universitas Indonesia
Dr. Irwan Meilano ST,M.Sc, ITB, Indonesia
Dr. Gancar Candra Premananto, SE., M.Si., Universitas Airlangga
Munawar A. Riyadi, Universitas Diponegoro, Semarang, Indonesia
Ir. Amrifan Saladin Mohruni Ph.D, Universitas Sriwijaya, Indonesia
Dr. RD. Kusumanto, MM, Politeknik Negeri Sriwijaya, Indonesia
Dr. H. Nandan Limakrisna, Ir., M.M., CQM, Universitas Persada Indonesia
Irsyadi Yani, ST., M.Eng. PhD, Universitas Sriwijaya, Indonesia
Dr. Yohandri Bow, M.S, Politeknik Negeri Sriwijaya, Indonesia
Dr. Yuli Yetri, M.Si, Politeknik Negeri Padang
Dr. Eng. Tresna Dewi, M.Eng., Politeknik Negeri Sriwijaya, Indonesia
Dr. Maya Fitri Oktarini S.T., M.T., Universitas Sriwijaya, Indonesia
Ir. Indra Chandra Setiawan, M.T., PT. Toyota Motor Manufacturing, Indonesia

General Chair

Dr.Ir.Rusdianasari, M.Si, Politeknik Negeri Sriwijaya, Indonesia

General co-Chairs

Carlos R. Sitompul, S.T.,M.T., Politeknik Negeri Sriwijaya, Indonesia
Ir. Jaksen M. Amin, M.Si, Politeknik Negeri Sriwijaya, Indonesia
Dr.Rita Martini, SE.,M.Si.,Ak.,CA, Politeknik Negeri Sriwijaya, Indonesia

Publication Chairs

Deris Stiawan, M.Kom, Ph.D., Universitas Sriwijaya, Indonesia

Desloehal Djumrianti, S.E., MIS., Ph.D, Politeknik Negeri Sriwijaya, Indonesia

Ade Silvia Handayani, S.T., M.T, Politeknik Negeri Sriwijaya, Indonesia

Technical Program Chairs

Muhammad Abu Bakar Sidik, S.T., M.Eng., Ph.D, Universitas Sriwijaya, Indonesia

Reza Firsandaya Malik, S.T., M.T., Ph.D, Universitas Sriwijaya, Indonesia

Nyayu Latifah, S.T., M.T, Politeknik Negeri Sriwijaya, Indonesia

Dr. Herlambang Saputra, S.Pd., M.Kom., Politeknik Negeri Sriwijaya, Indonesia

Finance Chairs & Treasurer

Dr. Marieska Lupikawati, S.E., M.M, Politeknik Negeri Sriwijaya, Indonesia

Public Relation Chairs

Ir. Irawan Rusnadi, M.T. , Politeknik Negeri Sriwijaya, Indonesia

Drs Zakaria MPd., Politeknik Negeri Sriwijaya, Indonesia

Dra. Tiur Simanjuntak, M.Ed.M, Politeknik Negeri Sriwijaya, Indonesia

Sukandar S.Si.,M.T,Ph.D., Institut Teknologi Bandung, Indonesia

Dr. GK Marriappen, Politeknik Seberang Perai, Malaysia

Dr. Sari Lestari Zainal Ridho, SE., M.Ec, Politeknik Negeri Sriwijaya, Indonesia

Dr. Lambok Vera R Pangaribuan, S.E., M.Si, Ak, Politeknik Negeri Sriwijaya, Indonesia

Dr. Ir.Leila Kalsum, M.T, Politeknik Negeri Sriwijaya, Indonesia

Dr. Martha Aznury, M.Si., Politeknik Negeri Sriwijaya, Indonesia

Dr. Ir. Abu Hasan, M.Si., Politeknik Negeri Sriwijaya, Indonesia

Dr. Leily Nurul Komariah, S.T., M.T., Universitas Sriwijaya, Indonesia

Prof. Anton Satria Prabuwono, Ph.D., King Abdulaziz University

Irfan Syamsuddin, S.T, PG.Dipl.BEC, M.Com.ISM, Ph.D., Politeknik Negeri Ujung Pandang

Ahmad Hoirul Basori, B.Sc.,Ph.D., King Abdulaziz University, Saudi Arabia

Dr. Ermatita, M.Kom., Universitas Sriwijaya, Indonesia

Dr. Muhammad Syafrullah, M.Kom., M.Sc., Universitas Budi Luhur, Jakarta, Indonesia

Anton Yudhana, S.T., M.T., Ph.D., Universitas Ahmad Dahlan, Yogyakarta, Indonesia

Zulfatman, Ph.D., Universitas Muhammadiyah Malang, Malang, Indonesia

Mochammad Facta, S.T., M.T., Ph.D., Universitas Diponegoro, Semarang, Indonesia

Imam Much Ibnu Subroto, S.T., M.Sc., Ph.D., Universitas Islam Sultan Agung, Semarang,

Dr. Uuf Brajawidagda, Politeknik Negeri Batam, Indonesia

Firdaus, S.T., M.Kom., Universitas Sriwijaya, Indonesia

Syarifah Putri Raflessia. S.Kom. M.T., Universitas Sriwijaya, Indonesia

Local Chairs

Firdaus, S.T., M.T., Politeknik Negeri Sriwijaya, Indonesia
Aladin SE, M.Si.,Ak ,CA, Politeknik Negeri Sriwijaya, Indonesia
M. Miftahul Amin, S.Kom., M.Eng., Politeknik Negeri Sriwijaya, Indonesia
Dr. Evada Dewata,S.E., M.Si., Ak, CA, Politeknik Negeri Sriwijaya, Indonesia
Dr. M. Syahirman Yusi., M.S., Politeknik Negeri Sriwijaya, Indonesia
Dr. Neneng Miskiyah, S.E. M.Si., Politeknik Negeri Sriwijaya, Indonesia
Dr. Periansya, M.M., Politeknik Negeri Sriwijaya, Indonesia
Dr. Markoni Badri, S.E., MBA, Politeknik Negeri Sriwijaya, Indonesia
Dr. Heri Setiawan, M.M. , Politeknik Negeri Sriwijaya, Indonesia
Ikhtison Mekongga, S.T., M.Kom., Politeknik Negeri Sriwijaya, Indonesia
Yudi Wijarnako, S.T., M.T., Politeknik Negeri Sriwijaya, Indonesia
Pridson Mandiangan, S.E., M.M., Politeknik Negeri Sriwijaya, Indonesia
Adewasti, S.T., M.Kom., Politeknik Negeri Sriwijaya, Indonesia
Firdaus, S.E., M.M., Politeknik Negeri Sriwijaya, Indonesia
Hairul, S.T., M.T.,Politeknik Negeri Sriwijaya, Indonesia
Eka Susanti, S.T., M.Kom., Politeknik Negeri Sriwijaya, Indonesia
Leni Novianti, M.Kom., Politeknik Negeri Sriwijaya, Indonesia

RUNDOWN
2nd FIRST 2018 INTERNATIONAL CONFERENCE
(FORUM IN RESEARCH SCIENCE AND TECHNOLOGY)
Horison Ultima Hotel, Palembang, South Sumatera, Indonesia
Tuesday – Wednesday, October 30-31, 2018

TUESDAY, October 30, 2018					
Horison Hotel Ultima, KERINCI Room, 3 rd Floor					
No.	Session	Person in Charge	Time Allotment	Liaison Officer	
1.	Registration	Event Section Committee	07.00 – 07.30	M.Miftakhul Amin, S.Kom., M.Eng	
2.	The Opening Ceremony	Event Section Committee	07.30 – 08.30		
	Tari Tanggai				
	Indonesian National Anthem				
	Do'a				
	Chair Report Speech				
	Speech and Opening Remarks by Director of State Polytechnic of Sriwijaya				
	Souvenirs Gift, Group Photos				
3.	Coffee Break	Event Section Committee	08.35 – 08.45		
PLENARY SESSION					
No.	Keynote Speaker	Affiliation	Time Allotment	Moderator	Liaison Officer
1.	Dr. Ing. Ahmad Taqwa, M.T.	Politenik Negeri Sriwijaya	08.45 – 09.15	Mr. Firdaus, S.T., M.T.	Dr. Eng. Herlambang, M.Kom
2.	Prof. Dr. Rahmat Budiarto	Al Baha University, Saudi Arabia	09.15 – 09.45		
3.	Prof. Dr. Werner Rammensee	Cologne University, Germany	09.45 – 10.15		
4.	Prof. Erry Yulia Tribblas Adesta	International Islamic University, Malaysia	10.15 – 10.45		
5.	Assoc. Prof. Dr. Augustus E. Osseo-Asare	University of Sunderland, United Kingdom	10.45 – 11.15	Dr. Markoni Badri, S.E., M.B.A.	M.Miftakhul Amin, S.Kom., M.Eng
6.	Prof. Badri Munir Sukoco, S.E., MBA.,Ph.D	Universitas Airlangga	11.15 – 11.45		

No.	Invited Speaker	Affiliation	Time Allotment	Moderator	Liaison Officer
1.	Assoc. Prof. Pindo Tutuko, Ph.D.	University of Merdeka Malang	11.45 – 12.30	Dr. Nurul Aryanti	Dr. Eng. Herlambang, M.Kom
2.	Ir. Indra Chandra Setiawan, M.T.	Senior Manager PT. Toyota Motor Manufacturing Indonesia			
3.	Dr. Mohammed Yahya Azahrani	Al Baha University, Saudi Arabia			
Break, Sholat Dzuhur, Lunch			12.30 – 13.15		
PARALEL SESSION					
No.	Theme	Room	Time	Moderator	Articles
1.	TRACK 1 (Electrical Engineering, Mechanical Engineering, Civil Engineering)	ROOM 1 (Leuser)	13.30 – 17.20	Agus Subriyanto, S.T., M.T. / Deris Stiawan, M.T., Ph.D./ Nyayu Latifah Husni, S.T., M.T.	22
2.	TRACK 1 (Industrial Engineering, Energy, Biology, Chemical Engineering)	ROOM 2 (Dempo I)	13.30 – 17.30	Ir. Jaksen M. Amin, M.Si. / Doeslohal Djumrianti, S.E.MIS., Ph.D / Koryati, M.Pd	23
3.	TRACK 1 (Chemical Engineering)	ROOM 3 (Dempo II)	13.30 – 17.20	Anerasari, M.B.Eng., M.Si / Dr. Welly / M.Miftakhul Amin, S.Kom., M.Eng	22
4.	TRACK 2 (Computer Science, , Computer Engineering, Information System, Informatics Management) TRACK 3 (English)	ROOM 4 (Semeru I)	13.30 – 16.40	Ummasyro, S.E. Med.M / Dr. Eng. Herlambang, M. Kom /	18
5.	TRACK 3 (Management Economics, Business Administration, Accounting)	ROOM 5 (Semeru II)	13.30 – 17.40	Dr. Jalaluddin Sayuti / Dr. Periansyah / Dr. Sari Lestari ZR	24

WEDNESDAY, October 31, 2018
Horison Hotel Ultima, GOLDEN Room, 2nd Floor

No.	Session	Person in Charge	Time Allotment	Liaison Officer
1.	Registration	Event Section Committee	07.30 – 08.00	Event Section Committee
No.	Session	Speakers	Time Allotment	Liaison Officer
1.	Materi 1: 7 Things to Do to Publish Your Paper in Accredited & International Journal (IRJBS):	M. Eko Y. Napitupulu M. Ikom	08.00 – 09.00	M.Miftakhul Amin, S.Kom., M.Eng
2.	Cofee Break		09.00 – 09.15	Event Section Committee
3.	Materi 2 : How to Write Reseach Paper	Marieska Verawaty, S.Si., M.Si, Ph.D / Deris Stiawan, M.T., Ph.D	09.15 – 12.30	Nyayu Latifah Husni, S.T., M.T.
4.	Break, Sholat Dzuhur, Lunch		12.30 – 13.30	Event Section Committee
No.	Session	Speakers	Time Allotment	Liaison Officer
1.	Couching Clinic and Workshop Session 1	Couching Clinic and Workshop Team	13.30 – 15.00	Ade Silvia Handayani, S.T., M.T.
2.	Cofee Break		15.15 – 15.30	Event Section Committee
3.	Couching Clinic and Workshop Session 2	Couching Clinic and Workshop Team	15.30 – 16.30	Dr. Sari Lestari ZR
4.	Closing		16.30 – 17.00	Dr. Marieska Lupikawaty

Theme : TRACK 1 (Electrical Engineering, Mechanical Engineering, Civil Engineering)
Room : ROOM 1 (Leuser)
Moderator : Agus Subiyanto, S.T., M.T. / Deris Stiawan, M.T., Ph.D./
Nyayu Latifah Husni, S.T., M.T.
Time : 13.30 – 18.05 WIB
Articles : 22

ID	Time	Title	Authors with affiliation and country
864	13.30 – 13.40	Coffee grouping Control System using TCS3200 Sensor based on XBEE PRO	Sarjana, Emilia Hesti, Sholihin, Halimah Tussyadyah (Politeknik Negeri Sriwijaya)
865	13.40 – 13.50	Mimo Printed Dipole Antenna For WIMAX Network Usage Application	Suzanzefi, Ciksadan, Irawan Hadi, R.A. Halimah Thusyadiyah (Politeknik Negeri Sriwijaya)
1010	13.50 – 14.00	Motion Control Analysis of a Spherical Robot as a Surveillance Robot	Tresna Dewi, Pola Risma, Yurni Oktarina, RD Kusumanto (Politeknik Negeri Sriwijaya)
1030	14.00 – 14.10	Wajanbolic Reflection Antenna For 4G Service in Urban and Sub Urban Areas	Jon Endri, Ade Silvia Handayani, Raudatul Jannah (Politeknik Negeri Sriwijaya)
1082	14.10 – 14.20	Enhancement of Navigation Systems of Mobile Robots in Gas Leakage Searching	Nyayu Latifah Husni (Politeknik Negeri Sriwijaya), Nadya Lukita(Politeknik Negeri Sriwijaya), Masayu Annisah(Politeknik Negeri Sriwijaya), Ade Silvia Hadayani(Politeknik Negeri Sriwijaya), Adella Rialita(Politeknik Negeri Sriwijaya), Siti Nurmaini (Universitas Sriwijaya), Irsyadi Yani (Universitas Sriwijaya),
1126	14.20 – 14.30	Higher Education Role in Supporting Indonesian Government Policy in Developing Renewable Energy	Ahmad Taqwa (Politeknik Negeri Sriwijaya)
1137	14.30 – 14.40	Energy Transfer Provision Based on RF-Radio Frequency as Established Solution of Learning Process Using Laptop and Wireless Projector	Suroso, Sopian Soim, Ade Silvia Handayani, Ahmad Taqwa (Politeknik Negeri Sriwijaya)
1164	14.40 – 14.50	Transmission Performance Analysis of TDMA Radio and MAC Communication of TDMA Protocol in TDMA Radio	Ferry Nando, (Nittan Valve Kabushiki Kaisha, Japan) A. Permatasari (Telecommunication Engineering, Politeknik Negeri Sriwijaya), Lindawati (Telecommunication Engineering, Politeknik Negeri Sriwijaya) , Ade Silvia Handayani (Telecommunication Engineering, Politeknik Negeri Sriwijaya)
921	14.50 – 15.00	Milling Process Prediction Model of Sugarcane Juice Using Artificial Neural Networks (ANN)	Devie Oktarini (Department of Industrial Engineering, University of Tridinanti (UTP), Amrifan Saladin Mohruni (Universitas Sriwijaya), Safian Sharif (Dept. of Materials Manuf. and Ind. Engineering, Universiti Teknologi Malaysia), Muhammad Yanis (Associate Professor in Mechanical Engineering Sriwijaya University), Madagaskar (Indonesia)

1007	15.00 – 15.10	Experimental Study of Low-Rank Coal From South Sumatra used in Humidifier and Flash Dryer	Irwin – Bizzy (Mechanical Engineering Department Sriwijaya University), Riman Sipahutar (Mechanical Engineering Department Sriwijaya University), Eddy Ibrahim (Mining Engineering Department Sriwijaya University), Muhammad Faizal (Chemical Engineering Department Sriwijaya University)
1024	15.10 – 15.20	Investigation of Finite Element Modelling on Thin-Walled Machining of Ti6Al4V using DEFORM-3D	Amrifan Saladin Mohruni (Mechanical engineering Department Faculty of Engineering Sriwijaya University), Muhammad Zahir (Mechanical Engineering Department Sriwijaya University), Muhammad Yanis (Mechanical Engineering Department Sriwijaya University), Safian Sharif (Department of Materials Manufacture and Industrial Engineering Universiti Teknologi Malaysia), Irsyadi Yani (Mechanical Engineering Department Sriwijaya University)
1031	15.20 – 15.30	Optimization of Molding Parameters for a Micro Gear with Taguchi Method	Min-Wen Wang (Mechanical Engineering Department, National Kaohsiung University of Science and Technology, Kaohsiung, Taiwan), Fatahul Arifin (Mechanical Engineering Department, National Kaohsiung University of Science and Technology, Kaohsiung, Taiwan), Thi Truc-Ngan Huynh (Industrial Engineering and Management Department, National Kaohsiung University of Applied Sciences, Kaohsiung, Taiwan)
	15.30 – 15.40		BREAK
1032	15.40 – 15.50	The effect of Air Flow Rate and Ratio between Coal and Coconut Shell on Heat Energy Produced in an Updraft Gassifier	Riman Sipahutar (Mechanical Engineering Department Sriwijaya University), Diah Kusuma Pratiwi (Mechanical Engineering Department, Engineering Faculty, Sriwijaya University), Amir Arifin ((Mechanical Engineering Department, Engineering Faculty, Sriwijaya University), Irwin Bizzy ((Mechanical Engineering Department, Engineering Faculty, Sriwijaya University)
1161	15.50 – 16.00	Toward Real Time IoT Based Paste Monitoring System for Small to Medium Enterprise (SME)	Erry YT Adesta (Department of Manufacturing and Materials Engineering, International Islamic University Malaysia (IIUM), Jalan Gombak, 53100 Kuala Lumpur, Malaysia), I Hilmy (Department of Manufacturing and Materials Engineering, International Islamic University Malaysia (IIUM), Jalan Gombak, 53100 Kuala Lumpur, Malaysia), Avicenna (Department of Manufacturing and Materials Engineering, International Islamic University Malaysia (IIUM), Jalan Gombak, 53100 Kuala Lumpur, Malaysia) and D Agusman (Jurusan TeknikMesin, FakultasTeknik, UniversitasMuhammadiyah Prof. Dr. HAMKA, Jl. Limau 2 KebayoranBaru, Jakarta Selatan, Indonesia)
1163	16.00 – 16.10	Reducing CO ₂ Emissions from Land Transport Sector in Indonesia: Case Study Automobiles Sector	Indra Chandra Setiawan (Department of Mechanical & Industrial Engineering, Faculty of Engineering, GadjahMada University, Indonesia), Indarto (Department of Mechanical & Industrial Engineering, Faculty of Engineering, GadjahMada University, Indonesia), and Deendarlianto (Department of Mechanical & Industrial Engineering, Faculty of Engineering, GadjahMada University, Indonesia)
898	16.10 – 16.20	High Quality Concrete by Using Admixture Superplasticizer and Additional Lime Off	Kosim (Politeknik Negeri Sriwijaya), Raja Marpaung (Politeknik Negeri Sriwijaya), Zainuddin (Politeknik Negeri Sriwijaya), Darma Prabudi (Politeknik Negeri Sriwijaya)
925	16.20 – 16.30	Criteria Analysis, Weight and Priority for Handling Bridges in Kudus District using	Erwin DW Prasetyo (Dinas Pekerjaan Umum dan Penataan Ruang Kabupaten Kudus, Jawa Tengah, Indonesia), Mudjiastuti Handajani (Magister Teknik Sipil Universitas Diponegoro Semarang) dan Ismiyati (Magister Teknik Sipil Universitas Diponegoro Semarang).

		AHP and Promethee II methods	
997	16.30 – 16.40	A Scouring Patterns Around Pillars of Sekanak River Bridge	Achmad Syarifudin (Civil Engineering department, Universitas Bina Darma, Palembang), Dewi Sartika (Balai Besar Wilayah Sungai Sumatera VIII, Ministry of Public Works and Housing Settlement, Indonesia)
1022	16.40 – 16.50	Irrigation Maintenance Priority Analysis (Case Study: Irrigation Areas in Salatiga City)	Hendarto Efendi (Public Works and Spatial Planning Department of Salatiga City, Central Java, Indonesia), Sri Sangkawati (Master in Civil Engineering Diponegoro University Semarang, Indonesia), Pranoto Samto Atmodjo (Master in Civil Engineering Diponegoro University Semarang, Indonesia)
1034	16.50 – 17.00	The Influence of Temperature Changes on Performance Latson (AC-WC) Plastic Waste with the Marshall Method	Mahmuda (Civil Engineering Departement, Sriwijaya State Polytechnic,Indonesia), Sumiati (Civil Engineering Departement, Sriwijaya State Polytechnic,Indonesia), Puryanto (Civil Engineering Departement, Sriwijaya State Polytechnic,Indonesia) and M. Prawira. W (Civil Engineering Departement, Sriwijaya State Polytechnic,Indonesia)
1084	17.00 – 17.10	Utilization of Local Material of South Sumatra for Porous Asphalt Type AC-WC to Improve Security Levels of Road and Environmentally Friendly	Amiruddin (State Polytechnic of Sriwijaya, Indonesia), Ibrahim (State Polytechnic of Sriwijaya, Indonesia), I Sulianti (State Polytechnic of Sriwijaya, Indonesia) and Agus Subrianto (State Polytechnic of Sriwijaya, Indonesia)
1162	17.10 – 17.20	Tracing the City Pattern of Netherlands and Indonesia using Depth Calculation and Connectivity	Pindo Tutuko (Department of Architecture, University of Merdeka Malang, Indonesia), Nurhamdoko Bonifacius (Department of Architecture, University of Merdeka Malang, Indonesia), Dani Yuniawan (Department of Industrial Engineering, University of Merdeka Malang, Indonesia Department of Industrial Engineering, University of Merdeka Malang, Indonesia), Adisti Safrilia (Department of Architecture, University of Merdeka Malang, Indonesia), Nurhamdoko Bonifacius (Department of Architecture, University of Merdeka Malang, Indonesia), Mochamad Rizqi Junianto (Master Program, Department of Architecture, University of Merdeka Malang, Malang 65146, Indonesia), Reynold Johan Aleksander Telsoni (Master Program, Department of Architecture, University of Merdeka Malang, Malang 65146, Indonesia)

Theme : TRACK 1 (Industrial Engineering, Energy, Biology)
Room : ROOM 2 (Dempo I)
Moderator : Ir. Jaksen M. Amin, M.Si. / Doeslohal Djumrianti, S.E.MIS., Ph.D / Koryati, M.Pd
Time : 13.30 – 17.35 WIB
Articles : 23

ID	Time	Title	Authors with affiliation and country
778	13.30 – 13.40	IoT Technology Monitoring, Controlling and Data Logging for ATS on Grid Connected Solar-Wind Hybrid System	Budiman (Applied Master of Renewable Energy Engineering, Renewable Energy Engineering Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara Bukit Besar, Palembang, South Sumatera Indonesia 30139), Ahmad Taqwa (Electrical Engineering, Electronics Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara Bukit Besar, Palembang, South Sumatera Indonesia 30139), RD.Kusumanto (Electrical Engineering, Electronics Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara Bukit Besar, Palembang, South Sumatera Indonesia)
783	13.40 – 13.50	Design of Mini Horizontal Wind Turbine for Low Wind Speed Area	Agum Try Wardhana (Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang, 30139, Indonesia) ¹ , Ahmad Taqwa (Electrical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, 30139, Indonesia), Tresna Dewi (Electrical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, 30139, Indonesia).
877	13.50 – 14.00	A Micro Hydro Pelton Turbine Prototype (Review of the effect of water debit and nozzle angle to rotation and pelton turbine power)	Septa Eka Lesmana (Applied Master of Renewable Energy Engineering, State Polytechnic of Sriwijaya, Palembang 30139, Indonesia), Leila Kalsum (Chemical Engineering Department, Renewable Energy Engineering, State Polytechnic of Sriwijaya, Palembang 30139, Indonesia), and Tri Widagdo (Mechanical Engineering Department, State Polytechnic of Sriwijaya, Palembang 30139, Indonesia).
922	14.00 – 14.10	Optimalization of Antimicrobial Production from Endophytic Fungus Sporothrix sp. LBKURCC43 by Modifying Carbon and Nitrogen Sources of Fermentation Media	Abdul Rohman Wali (Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Riau), Nursyirwani (Department of Marine Sciences, Faculty of Fishery and Marine Sciences, Universitas Riau), Saryono (Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Riau)
929	14.10 – 14.20	Achievement Analysis of One Cylinder Diesel Engine Using Virgin Coconut Oil Biodiesel	Burhan Yuliansyah (Applied Master of Renewable Energy Engineering Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia), Triwidagdo (Mechanical Engineering Department Politeknik Negeri Sriwijaya Palembang 30139,Indonesia), Abuhasan (Chemical Engineering Department Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia)
980	14.20 – 14.30	Optimization of Monocrystalline Solar Panels Using Reflector Scanning Technology	Fiqri Al Faruqi (Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia), RD. Kusumanto (Electrical Engineering Department, Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia), and Abu Hasan (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia).
988	14.30 – 14.40	Performance Test of Pelton Micro-Hydro Turbine With The Variations of Nozzle Output Angle, Blades	Echa Okdinata (Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang, Indonesia), Abu Hasan (Chemical Engineering Department, Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Indonesia), and Carlos Sitompul (Electrical Engineering Department, Politeknik Negeri Sriwijaya, Indonesia)

		Number and Water Flow Discharge to Produce The Maximum Output Power	
992	14.40 – 14.50	Minimum Power of Solar Panel Movement in Solar Tracker System Prototype	Aldony Reco Putra (Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang Indonesia), RD Kusumanto (Electrical Engineering Department, Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang, Indonesia), and Ahmad Taqwa (Electrical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, Indonesia.)
995	14.50 – 15.00	PLC Application as an Automatic Transfer Switch for On-Grid PV System; Case Study PLTS Jakabaring Palembang	Achmad Kurniawan (Politeknik Negeri Sriwijaya, Palembang, Indonesia), Ahmad Taqwa (Politeknik Negeri Sriwijaya, Palembang, Indonesia),, and Yohandri Bow (Politeknik Negeri Sriwijaya, Palembang, Indonesia)
1035	15.00 – 15.10	Automatic Cooling System For Efficiency and Output Enhancement of a Pv System Application in Palembang, Indonesia	Hadli Harahap (Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang, Indonesia), Tresna Dewi (Electrical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, Indonesia), Rusdianasari (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, Indonesia)
1053	15.10 – 15.20	Sea Salt Deposition Effect On Output And Efficiency Losses Of The Photovoltaic Installation System; A Case Study In Palembang, South Sumatera	Firdaus Setiawan (Renewable Energy Department, Politeknik Negeri Sriwijaya Palembang, Indonesia), Tresna Dewi (Electro Department, Politeknik Negeri Sriwijaya Palembang, Indonesia) and Syahirman Yusi (Bussiness Administration Department, Politeknik Negeri Sriwijaya Palembang, Indonesia)
1066	15.20 – 15.30	Effects of Direct Glass Film Installation on to Photovoltaic Solar Panel	Hendra Kusuma Negara (Applied Master of Renewable Eney Engineering, PoliteknikNegeriSriwijaya Palembang), RD. Kusumanto (Electrical Engineering Department, PoliteknikNegeriSriwijaya Palembang), Abu Hasan (Chemical Engineering Department, Gajah Mada University)
	15.30 – 15.40		BREAK
1070	15.40 – 15.50	FFA Reduction in A Waste Cooking Oil as A Raw Material For Biodiesel With Activated Coal Ash Adsorbent	Endang Susilowati (Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Indonesia), Abu Hasan (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara, Bukit Besar, Palembang), and Aida Syarif (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara, Bukit Besar, Palembang)
1087	15.50 – 16.00	Cooling Effect With Heat Sink Fan to Improve Solar Panel (Photovoltaic) Performance	Efsilon K.A. Fatoni (Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya Palembang, Indonesia), Ahmad Taqwa (Electrical Engineering Department Politeknik Negeri Sriwijaya Palembang, Indonesia), Rd. Kusumanto (Electrical Engineering Department Politeknik Negeri Sriwijaya Palembang, Indonesia)
1103	16.00 – 16.10	Effect of Reaction Temperature for Biodiesel Quality Using Microwaves Technology	RA Nurul Moulita (Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang), Rusdianasari (Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang), and Leila Kalsum(Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang)
1105	16.10 – 16.20	The Potential of Microwave in the	Sandhy Yunsari (Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Indonesia), Rusdianasari (Chemical

		manufacture of Biodiesel by Using Crude Palm Oil (CPO)	Engineering Department, Politeknik Negeri Sriwijaya, Indonesia), and A. Husaini (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Indonesia)
1116	16.20 – 16.30	Experimental Investigation Scenarios of Partial Shade On The PV (Photovoltaic) Module Application in Palembang, Indonesia	Herdian Wibowo (Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang, Indonesia), Yohandri Bow (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, Indonesia), Carlos, RS (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, Indonesia)
1129	16.30 – 16.40	Community Empowerment at Sri Tiga Village, Sumber Marga Telang Sub-District, Banyuasin Regency, The Province of South Sumatera; Technology for Green Production of Nata De Coco and Swamp Water Filtration	Marieskaverawaty (Biology Department, Faculty of Math and Natural Science, Sriwijaya University, South Sumatera, Indonesia), B. Lakitan (Faculty of Agriculture, Sriwijaya University, South Sumatera, Indonesia) and S.Herlinda (Plant Pest and Disease Department, Faculty of Agriculture, Sriwijaya University, Indonesia)
1130	16.40 – 16.50	Effect of Potential Toxic Cyanobacteria Planktothrix agardhii isolated from A Retention Pond in Palembang to Cyprinus carpio L: A Preliminary Study	R. Wulandari (Biology Department, Faculty of Math and Natural Science, Sriwijaya University, South Sumatera, Indonesia), M. Amalia (Biology Department, Faculty of Math and Natural Science, Sriwijaya University, South Sumatera, Indonesia), R. Aryawati (Marine Department, Faculty of Math and Natural Science, Sriwijaya University, South Sumatera, Indonesia), SA. Hamim (Faculty of Enggineering, University of Indo Global Mandiri, South Sumatera, Indonesia) and M. Verawaty (Biology Department, Faculty of Math and Natural Science, Sriwijaya University, South Sumatera, Indonesia)
1140	16.50 – 17.00	Analysis of Biodiesel Conversion on Raw Material Variation Using Statistical Process Control Method	Winnie Andalia (Department of Industrial Engineering Faculty of Engineering, Universitas Tridinanti, Palembang, 30129, Indonesia), I Pratiwi (Department of Industrial Engineering Faculty of Engineering, Universitas Tridinanti, Palembang, 30129, Indonesia), S Arita (Department of Chemical Engineering Faculty of Engineering, Universitas Sriwijaya, Palembang, 30139, Indonesia)
1141	17.00 – 17.10	Nitrogen Gas Production By Pressure Swing Adsorption (Psa) Method Using Carbon Molecular Sieve (Cms) As Oxygen Adsorption	Agus Manggala (Energy Engineering, Polytechnic State of Sriwijaya), A Zikri (Energy Engineering, Polytechnic State of Sriwijaya), Erlinawati (Energy Engineering, Polytechnic State of Sriwijaya), Sutini PL (Energy Engineering, Polytechnic State of Sriwijaya), M Arifin (Energy Engineering, Polytechnic State of Sriwijaya)
1142	17.10 – 17.20	Hydrogen Storage From The Result Of Reactor Ace (Aluminium Corrosion And Electrolysis) Production By Pysisorption Method	A Zikri (Energy Engineering, Polytechnic State of Sriwijaya), Erlinawati (Energy Engineering, Polytechnic State of Sriwijaya), L Trisnaliani (Energy Engineering, Polytechnic State of Sriwijaya), A Aswan (Energy Engineering, Polytechnic State of Sriwijaya), A Firdausia (Energy Engineering, Polytechnic State of Sriwijaya)
1160	17.20 – 17.30	Effectiveness of Electrocoagulation Method in Processing Integrated Wastewater Using Aluminum and Stainless Steel Electrodes	Rusdianasari (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang), Jaksen (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang), Ahmad Taqwa (Electrical Engineering Department, Politeknik Negeri Sriwijaya, Palembang), Yudi Wijarnako (Electrical Engineering Department, Politeknik Negeri Sriwijaya, Palembang)

Theme : TRACK 1 (Chemical Engineering)
Room : ROOM 3 (Dempo II)
Moderator : Aneasari, M.B.Eng., M.Si / Dr. Welly / M.Miftakhul Amin, S.Kom., M.Eng
Time : 13.30 – 17.20 WIB
Articles : 22

ID	Time	Title	Authors with affiliation and country
899	13.30 – 13.40	Potential of Clay in Coal Mining of Tanjung Enim Area As a Filler on Rubber Compound	Abu Hasan (Chemical Engineering Department, State Polytechnic of Sriwijaya Palembang Indonesia), L Kalsum (Chemical Engineering Department, State Polytechnic of Sriwijaya Palembang Indonesia), , M Yerizam (Chemical Engineering Department, State Polytechnic of Sriwijaya Palembang Indonesia), Robert Junaidi (Chemical Engineering Department, State Polytechnic of Sriwijaya Palembang Indonesia), M Taufik (Chemical Engineering Department, State Polytechnic of Sriwijaya Palembang Indonesia), M Aznury (Chemical Engineering Department, State Polytechnic of Sriwijaya Palembang Indonesia), and Fatria (Chemical Engineering Department, State Polytechnic of Sriwijaya Palembang Indonesia)
900	13.40 – 13.50	Influence The Addition of Lapindo Mud is Calcined to the Quality of Cement Podzoland by Using Electric Furnace	Robert Junaidi (teaching staff Bachelor Degree (D IV) Chemical Engineering State Polytechnic of Sriwijaya), Abu Hasan (teaching staff of Master of Applied Renewable Energy Technique of State Polytechnic of Sriwijaya), dan Mustain Zamhari (teaching staff Bachelor Degree (D IV) Chemical Engineering State Polytechnic of Sriwijaya)
959	13.50 – 14.00	An Analysis Of The Impact Of The Coal Mining Activities On The Condition Of Water Quality In The Coal Mining Areas In South Sumatra	Marhaini (Department of Chemical Engineering, Faculty of Engineering, Muhammadiyah University, Palembang, Indonesia), Legiso (Department of Chemical Engineering, Faculty of Engineering, Muhammadiyah University, Palembang, Indonesia), Heny Juniar (Department of Chemical Engineering, Faculty of Engineering, Muhammadiyah University, Palembang, Indonesia), Mubin (Department of Chemical Engineering, Faculty of Engineering, Muhammadiyah University, Palembang, Indonesia)
1014	14.00 – 14.10	Sodium silicate composite filled by zinc oxide as low resistance thermal grease	Wahyu Jati Kusuma (¹ Department of Chemical Engineering, State Polytechnic of Sriwijaya, Srijaya Negara Street, Palembang 30139, Indonesia), Fadarina (Department of Chemical Engineering, State Polytechnic of Sriwijaya, Srijaya Negara Street, Palembang 30139, Indonesia), and Abu Hasan (¹ Department of Chemical Engineering, State Polytechnic of Sriwijaya, Srijaya Negara Street, Palembang 30139, Indonesia)
1068	14.10 – 14.20	Adsorption Model in Removal of Direct Synthetic Dyes in Aqueous Solution onto Tea Waste	Lia Cundari (Chemical Engineering Department Faculty of Engineering Universitas Sriwijaya Indralaya Indonesia), Bazlina Dawami Afrah (Chemical Engineering Department Faculty of Engineering Universitas Sriwijaya Indralaya Indonesia), Dwi Indah Utami (Chemical Engineering Department Faculty of Engineering Universitas Sriwijaya Indralaya Indonesia), Natra Ilhani Matondang (Chemical Engineering Department Faculty of Engineering Universitas Sriwijaya Indralaya Indonesia)
1071	14.20 – 14.30	Production of Biogas from Artificial Substrates (Oil, Protein and Cellulose) by Indigenous Anaerob Bacteria	Putri Agustriyani, Muhammad Said (Chemical Engineering Department, Faculty of Engineering, Universitas Sriwijaya, Palembang, 30139, Indonesia), Muhammad Faizal (Chemical Engineering Department, Faculty of Engineering, Universitas Sriwijaya, Palembang, 30139, Indonesia), Bazlina Dawami Afrah (Chemical Engineering Department, Faculty of Engineering, Universitas Sriwijaya, Palembang, 30139, Indonesia)
1076	14.30 – 14.40	Mechanical properties of bioplastics product from	Sopiah Zainal (Teknik Kimia, Politeknik Negeri Sriwijaya), Yuniar (Teknik Kimia, Politeknik Negeri Sriwijaya), Martha Aznury (Teknik

		Musa paradisica formatypica concentrate with plasticiser variables	Kimia, Politeknik Negeri Sriwijaya), and Melianti (Teknik Kimia, Politeknik Negeri Sriwijaya)
1077	14.40 – 14.50	Oxygen Adsorption Kinetics Study in PSA (Pressure Swing Adsorber) for Nitrogen Production	Indah Purnamasari (Chemical Engineering Department, State Polytechnic of Sriwijaya), M Yerizam (Chemical Engineering Department, State Polytechnic of Sriwijaya), A Hasan (Chemical Engineering Department, State Polytechnic of Sriwijaya), and R Junaidi (Chemical Engineering Department, State Polytechnic of Sriwijaya)
1078	14.50 – 15.00	Characteristics of Activated Charcoal from Coconut Midribs in Jumputan Waste Adsorption Process	Enggal Nurisman (Chemical Engineering Department Sriwijaya University, Palembang Indonesia), Syaiful (Chemical Engineering Department Sriwijaya University, Palembang Indonesia), Rahmatullah (Chemical Engineering Department Sriwijaya University, Palembang Indonesia)
1089	15.00 – 15.10	Geochemical Organic of Airbenakat Black shale in Berau Areas, Jambi	Putri Dwi Afifah (Sriwijaya University), Budhi Setiawan (Sriwijaya University)
1091	15.10 – 15.20	O-rings material deterioration due to contact with biodiesel blends in a dynamic fuel flow	Leily Nurul Komariah (Department of Chemical Engineering Faculty of Engineering, Universitas Sriwijaya, Palembang, Indonesia), S Arita (Department of Chemical Engineering Faculty of Engineering, Universitas Sriwijaya, Palembang, Indonesia), F Aprianjaya (Energy and Environmental Engineering Laboratory Universitas Sriwijaya, Indralaya Ogan Ilir Indonesia), M G Novaldi (Energy and Environmental Engineering Laboratory Universitas Sriwijaya, Indralaya Ogan Ilir, Indonesia) , M F Fathullah (Energy and Environmental Engineering Laboratory Universitas Sriwijaya, Indralaya Ogan Ilir, Indonesia)
1092	15.20 – 15.30	Mathematics Instructional Package Based on Creative Problem Solving to Improve Additive Reasoning Ability and Creative Thinking Ability	Yulianto Wasiran (Departement of Chemical Engineering. State of Polytechnic Sriwijaya. Jalan Srijaya Negara Bukit Besar. Palembang.Indonesia)
	15.30 – 15.40		BREAK
1097	15.40 – 15.50	Lipid Extraction from Mikroalgae Spirulina Platensis for Raw Materials Biodiesel	Leila Kalsum (Applied Renewable Energy Engineering Study Program, State Polytechnic of Sriwijaya, Palembang 30139, Indonesia), Erwana Dewi (Chemical Engineering Study Program, State Polytechnic of Sriwijaya, Palembang 30139, Indonesia), Elina Margarety (Chemical Engineering Study Program, State Polytechnic of Sriwijaya, Palembang 30139, Indonesia) and Aisyah Suci Ningsih (Chemical Engineering Study Program, State Polytechnic of Sriwijaya, Palembang 30139, Indonesia)
1099	15.50 – 16.00	The Characteristics of Particle Board from Empty Fruit Palm Oil (Elaeis guineensis Jacq) by using an Adhesive of Liquid Guava Rod Bark	Siti Chodijah (Staff Edukatif of Chemical Engineering Department , Polytechnic Negeri Sriwijaya), Erwana Dewi (Staff Edukatif of Chemical Engineering Department , Polytechnic Negeri Sriwijaya) and Jaksen (Staff Edukatif of Chemical Engineering Department , Polytechnic Negeri Sriwijaya)
1100	16.00 – 16.10	Production of Glucose From Waste Bark Acacia Mangium Using Delignification and Chemical Hydrolysis Process	Susila Arita (Department of Chemical Engineering Faculty of Engineering, Universitas Sriwijaya Jl. Raya Prabumulih Indralaya-Palembang-South Sumatra), Fitri Hadiyah (Department of Chemical Engineering Faculty of Engineering, Universitas Sriwijaya Jl. Raya Prabumulih Indralaya-Palembang-South Sumatra) , Rizky Amalia (Department of Chemical Engineering Faculty of Engineering, Universitas Sriwijaya Jl. Raya Prabumulih Indralaya-Palembang-South Sumatra), Elsi Rosmalisa (Department of Chemical Engineering Faculty of Engineering, Universitas Sriwijaya Jl. Raya Prabumulih Indralaya-

			Palembang-South Sumatra)
1107	16.10 – 16.20	Pectin Ekstraktion From Kepok Banana Peels (Musa paradisiaca fomatypica) As Biodegradable Film Plastic	Siti Chodijah (Chemical Engineering Department, State Polytechnic of Sriwijaya, South Sumatera, Indonesia), M Husaini (Chemical Engineering Department, State Polytechnic of Sriwijaya, South Sumatera, Indonesia), M Zaman (Chemical Engineering Department, State Polytechnic of Sriwijaya, South Sumatera, Indonesia) and Hilwatulisan (Chemical Engineering Department, State Polytechnic of Sriwijaya, South Sumatera, Indonesia)
1109	16.20 – 16.30	The Effect of Reaction Time and pH on the Modification Process of Sago Starch Oxidation	Yuniar (Chemical Engineering Department, State Polytechnic of Sriwijaya, South Sumatera, Indonesia), Elina Margaretty (Chemical Engineering Department, State Polytechnic of Sriwijaya, South Sumatera, Indonesia), Fadarina (Chemical Engineering Department, State Polytechnic of Sriwijaya, South Sumatera, Indonesia), Aneasari M (Chemical Engineering Department, State Polytechnic of Sriwijaya, South Sumatera, Indonesia) and Ida Febriana (Chemical Engineering Department, State Polytechnic of Sriwijaya, South Sumatera, Indonesia)
1117	16.30 – 16.40	Treatment of Leachate from Garbage using Electrocoagulation Type MP-P (MonoPolar-Paralel) Methode	Aneasari Meidinariasty (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, Indonesia), Rusdianasari (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, Indonesia), Yohandri Bow (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, Indonesia), Irawan Rusnadi (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, Indonesia), A. Lutfi Fuadi (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, Indonesia.)
1125	16.40 – 16.50	Analysis Of Cooler Performance In Supply Air Feed For Nitrogen Production Process Using Pressure Swing Adsorption (PSA) Method	Adi Syakdani (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang, 30139, Indonesia), Yohandri Bow (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang, 30139, Indonesia), Rusdianasari (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang, 30139, Indonesia), and Muhammad Taufik (Chemical Engineering Department, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang, 30139, Indonesia)
1131	16.50 – 17.00	Fuel Production from LDPE and HDPE Plastic Waste	Netty Herawati (Chemical Engineering Department, Faculty of Engineering, Universitas Muhammadiyah Palembang, Indonesia), Mardwita Mardwita (Chemical Engineering Department, Faculty of Engineering, Universitas Muhammadiyah Palembang, Palembang 30263, Indonesia), Eka Sri Yusmartini (Chemical Engineering Department, Faculty of Engineering, Universitas Muhammadiyah Palembang, Indonesia), Robiah Robiah (Chemical Engineering Department, Faculty of Engineering, Universitas Muhammadiyah Palembang Indonesia)
1133	17.00 – 17.10	Effect of Time and Concentration of Sulfuric Acid on Yield Bioethanol Produced In Making Bioethanol from Peat Soil	Kiagus Ahmad Roni (Chemical Engineering Study Program, Engineering Faculty, Muhammadiyah University of Palembang), Merisha Hastarina (Industrial Engineering Study Program, Engineering Faculty, Muhammadiyah University of Palembang), Netty Herawati (Chemical Engineering Study Program, Engineering Faculty, Muhammadiyah University of Palembang)
1138	17.10 – 17.20	Banana Midrib as Substitute for Pulp Production	Fadarin (Jurusan Teknik Kimia, Politeknik Negeri Sriwijaya, Palembang 30139), Mustain Zamhari (Jurusan Teknik Kimia, Politeknik Negeri Sriwijaya, Palembang), Selastia Yuliaty (Jurusan Teknik Kimia, Politeknik Negeri Sriwijaya, Palembang), Ibnu Hajar (Jurusan Teknik Kimia, Politeknik Negeri Sriwijaya, Palembang), Wahyu Jati Kusuma (Jurusan Teknik Kimia, Politeknik Negeri Sriwijaya, Palembang)

Theme : Computer Science, Computer Engineering, Information System, Informatics Management, English,
Room : ROOM 4 (Semeru I)
Moderator : Ummasyro, S.E. Med.M / Dr. Eng. Herlambang, M. Kom
Time : 13.30 – 16.40 WIB
Articles : 18

ID	Time	Title	Authors with affiliation and country
785	13.30 – 13.40	Implementation of Customer Relationship Management (CRM) With User Centered Design (UCD) User Satisfaction to Measure E-Library PT. Pupuk Sriwidjaja Palembang	Ali Ibrahim(Research laboratory Entreprenuer Resource Planning Faculty of Computer Science), Dahlia(Department of Information Systems Faculty of Computer Science Sriwijaya University), Derdi Kurniawa(Department of Information Systems Faculty of Computer Science Sriwijaya University), Dini Ayu Lestari(Department of Information Systems Faculty of Computer Science Sriwijaya University), Enky Ratnasari(Department of Information Systems Faculty of Computer Science Sriwijaya University), M.Hengky Setiawan(Department of Information Systems Faculty of Computer Science Sriwijaya University)
1080	13.40 – 13.50	Weather Classification based on Hybrid Cloud Image Using Principal Component Analysis(PCA) and Linear Discriminant Analysis(LDA)	Yulia Hapsari(Master of Informatics Engineering, Universitas Sriwijaya, Palembang, 30139, Indonesia), Syamsuryadi(Department of Informatics, Faculty of Computer Science, Universitas Sriwijaya, Palembang, 30139, Indonesia)
1017	13.50 – 14.00	Implementation of Calibration in Gas Hazardous CO and CO2 in Closed Room Using Fuzzy Logic	Slamet Widodo(Department Polytechnic of Sriwijaya, Sriwaja Negera Street, Bukit Besar, Palembang - Indonesia), M.Miftakhul Amin(Department Polytechnic of Sriwijaya, Sriwaja Negera Street, Bukit Besar, Palembang - Indonesia), A.Bahri Joni M(Department of Polytechnic of Sriwijaya, Sriwaja Negera Street, Bukit Besar, Palembang - Indonesia)
1025	14.00 – 14.10	A Framework of Promoting Government Services Using Social Media: Sudan E-Government Case Study	M. S. Adrees(College of Computer Science and Information Technology, Albaha University, Albaha, Saudi Arabia), O. E. Sheta(College of Computer Science and Information Technology, Albaha University, Albaha, Saudi Arabia), M. K. Omer(College of Computer Science and Information Technology, Albaha University, Albaha, Saudi Arabia), D. Stiawan(Dept. of Computer Engineering, Faculty of Computer Science, Universitas Sriwijaya, Palembang, Indonesia), R. Budiarto(College of Computer Science and Information Technology, Albaha University, Albaha, Saudi Arabia)
989	14.10 – 14.20	Geographic Information System of Health Service Place in Palembang	Arsia Rini(Informatics Management Study Program, Politeknik PalComTech, Palembang, 30129, Indonesia), Heki Aprianto(Informatics Management Study Program, Politeknik PalComTech, Palembang, 30129, Indonesia)
991	14.20 – 14.30	Database Design for Website Service Guide “Waterfall Tour South Sumatera	Meidyan Permata Putri(Information Systems Study Program, STMIK PalComTech Palembang), Hendra Effendi(Informatics Engineering Study Program,STMIK PalComTech Palembang)
1012	14.30 – 14.40	The Small and Medium Enterprise (SME) Promotion Website of Pedado Village	Rezania Agramanisti Azdy(Informatics Study Program, STMIK PalComTech, Indonesia), Febriyanti Darnis (Information System Study Program, STMIK PalComTech, Indonesia)

853	14.40 – 14.50	Advancement Parking Application Using MEAN Stack: A Narrative Review	Dian Nugraha (School of Graduates Studies, Management and Science University, Shah Alam, Selangor Malaysia), Falah Y. H. Ahmed (Faculty of Information Science & Engineering, Management and Science University, Shah Alam, Selangor, Malaysia)
927	14.50 – 15.00	Review of Progress Expert System: to Detect Diseases in Humans, Plants, and Animals	Febria Anjara(Management and Science University, Malaysia), Adam Amril Jaharadak (Management and Science University, Malaysia)
928	15.00 – 15.10	Blended Learning as Instructional Media : A review of The Literature	Nora Listiana(School of Graduate Studies, Management and Science University, University Drive, Seksyen 13,40100 Shah Alam, Selangor, Malaysia), Dr. Adam AmrilJaharadak(School of Graduate Studies, Management and Science University, University Drive, Seksyen 13,40100 Shah Alam, Selangor, Malaysia)
1054	15.10 – 15.20	Quality Control System (QCS) of Tourism Industry Sector in Palembang City	Fatmariyani(Informatics Management, Palcomtech Polytechnic, Palembang,Indonesia), Alan Saputro(Informatics Management, Palcomtech Polytechnic, Palembang,Indonesia)
1065	15.20 – 15.30	The Implementation of Ant Colony Algorithm in Finding The Shortest Travel Route of Palembang Tourism by Android Based	Safira Faizah(Studi Program DIV Informatics Management Informatics Management Department, State Polytechnic of Sriwijaya Jl. Srijaya Negara Bukit Besar Street, Bukit Lama, Ilir Barat I, Palembang 30139), Leni Novianti, S.Kom., M.Kom.(Studi Program DIV Informatics Management Informatics Management Department, State Polytechnic of Sriwijaya Jl. Srijaya Negara Bukit Besar Street, Bukit Lama, Ilir Barat I, Palembang 30139), Nita Novita, S.E., M.M.(Studi Program DIV Informatics Management Informatics Management Department, State Polytechnic of Sriwijaya Jl. Srijaya Negara Bukit Besar Street, Bukit Lama, Ilir Barat I, Palembang 30139) ³
	15.30 – 15.40		BREAK
1106	15.40 – 15.50	The Application of Supply Chain Management (SCM) Methods in Practicum Material Supply in Informatics Management Major, State Polytechnic of Sriwijaya	Sony Oktapriandi S.Kom., M.Kom.(Informatics Management D4 Study Program Informatics Management Major, State Polytechnic of Sriwijaya Jl. Srijaya Negara Bukit Besar, Bukit Lama, Ilir Barat I, Palembang 30139), Indra Satriadi S.T. M.Kom.(Informatics Management D4 Study Program Informatics Management Major, State Polytechnic of Sriwijaya Jl. Srijaya Negara Bukit Besar, Bukit Lama, Ilir Barat I, Palembang 30139), Hetty Meileni S.Kom., M.T.(Informatics Management D4 Study Program Informatics Management Major, State Polytechnic of Sriwijaya Jl. Srijaya Negara Bukit Besar, Bukit Lama, Ilir Barat I, Palembang 30139), Desi Apriyanty S.E., M.Si (Informatics Management D4 Study Program Informatics Management Major, State Polytechnic of Sriwijaya Jl. Srijaya Negara Bukit Besar, Bukit Lama, Ilir Barat I, Palembang 30139),
1110	15.50 – 16.00	Application of Mapping of The Raskin Aid Using AHP Fuzzy Method based on Geographic Information System	Leni N, S.Kom., M.Kom.(Study Program of Informatics Management Diploma IV Polytechnic of Sriwijaya, Palembang), Isnaini Azro, S.Kom., M.Kom.(Study Program of Computer Engineering Department of Informatics Management, Polytechnic of Sriwijaya, Palembang), Robinson, S.Kom.,M.Kom.(Study Program of Informatics Management Diploma IV Polytechnic of Sriwijaya, Palembang)
1112	16.00 – 16.10	Design of Mobile Campus Sriwijaya State Polytechnic Application for Android	Dewi Irmawati.(Informatics Management of Diploma IV Informatics Management Major, State Polytechnic of Sriwijaya, Palembang), Leni N(), Devi Sartika(Informatics Management of Diploma IV Informatics Management Major, State Polytechnic of Sriwijaya, Palembang), Ienda Meiriska(Informatics Management of Diploma IV Informatics Management Major, State Polytechnic of Sriwijaya, Palembang)

1127	16.10 – 16.20	Application Design for Lecturer Advancement in Sriwijaya State Polytechnic Palembang	Indri Ariyanti(Informatic Management Department, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang, 30139, Indonesia), Delta Khairunnisa(Informatic Management Department, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang, 30139, Indonesia), Nita Novita(), and M. Aris Ganiardi(Informatic Management Department, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang, 30139, Indonesia)
1135	16.20 – 16.30	The Implementation of E-Tourism in South Sumatera Province	Hetty Meileni(Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang, 30139, Indonesia), Sony Oktapriandi(Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang, 30139, Indonesia), and Desi Apriyanty(Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang, 30139, Indonesia)
1155	16.30 – 16.40	Using Microsoft Office: Powerpoints in Making Picture-Strips to Improve Students' Speaking and Writing Skills in ELT	Ida Machdarifah (State Polytechnic of Sriwijaya), Zakaria (State Polytechnic of Sriwijaya)

Theme : TRACK 3 (Economy Management, Administration Business, Accounting)
Room : ROOM 5 (Semeru II)
Moderator : Dr. Jalaluddin Sayuti / Dr. Periansyah / Dr. Sari Lestari ZR
Time : 13.30 – 17.30 WIB
Articles : 23

ID	Time	Title	Authors with affiliation and country
1069	13.30 – 13.40	The Analysis of Commitment, Discipline and Motivation Effects on The Non-Domiciled Civil Servants` Performance in Prabumulih Mayor Office	Dibyantoro L. Suhairi Hazisma.(Lecturers of Business Administration Department - State Polytechnic of Sriwijaya), Jalaluddin Sayuti.(Lecturers of Business Administration Department - State Polytechnic of Sriwijaya), Munparidi(Lecturers of Business Administration Department - State Polytechnic of Sriwijaya)
1072	13.40 – 13.50	The Influence of Training on Lecturer`s Performance at Politeknik Negeri Sriwijaya Palembang	Muhammad Noval, Ida Wahyuningrum ^h Yusniarti, Henny Madora (Management Informatic Department Politeknik Negeri Sriwijaya Jl. Srijaya Negara Bukit Besar-Palembang South Sumatera Indonesia 30139
1108	13.50 – 14.00	Strategic Sustainable Development for A Prosperous Human Existence Through Applied Technological Innovations	Augustus Ernest Osseo-Asare (Senior Lecturer, Strategy and International Management, Sunderland Business School, Faculty of Business, Law and Tourism, University of Sunderland, St Peter`s Way, Sunderland, SR6 ODD, England, United Kingdom.)
1006	14.00 – 14.10	Market Orientation, Environmental Orientation, Characteristics of Individual Entrepreneurs, and Broadscope Information on Performance of Smes in Palembang City Through Entrepreneurship Orientation as Mediated Variable (Case Study: Three Years Established Smes)	Fetty Maretha(Business Administration Major, Sriwijaya State Polytechnic, Palembang, Indonesia), Ahmad Ari Gunawan (Informatics Management Major, Sriwijaya State Polytechnic, Palembang, Indonesia)
1019	14.10 – 14.20	The Revitalization of Indonesian Vocational Education Through The Public - Private Partnership	Delfiazi Puji Lestari (LPDP / BUDI DN Batch 2017 awardee, Lecturer at STIA & P Annisa Dwi Salfarizi Palembang,South Sumatera, Indonesia. Student of doctoral program in Doctor of Public Administration at Diponegoro University Semarang Indonesia)
1095	14.20 – 14.30	The Readiness of Hospitality Service of Drivers Online to Serve International Visitors: A Case Study Go Car and Go Grab in Palembang	Desloehal Djumrianti (Senior Lecturer at Department of Business Administration, State Polytechnic of Sriwijaya, Indonesia), Hanifati(Senior Lecturer at Department of Business Administration, State Polytechnic of Sriwijaya, Indonesia),N Rasyid(Senior Lecturer at Department of Business Administration, State Polytechnic of Sriwijaya, Indonesia), and P Mandiangan(Senior Lecturer at Department of Business Administration, State Polytechnic of

			Sriwijaya, Indonesia)
1114	14.30 – 14.40	The Factors Affecting Students for Choosing The Business Administration Departement as A College in Higher Education	Afrizawati, SE, M.Si (Business Administration State Polytechnic Sriwijaya Palembang Indonesia), Dr. Paisal, SE, M.Si (Business Administration State Polytechnic Sriwijaya Palembang Indonesia) Hendra Sastrawinata, SE, M.M (Business Administration State Polytechnic Sriwijaya Palembang Indonesia)
1120	14.40 – 14.50	Ownership Structure, Corporate Social Responsibility (CSR) Disclosure and Company's Financial Performance	Neneng Miskiyah(Department of business administration, Polytechnic State of Sriwijaya, Indonesia), Hadi Jauhari(Department of business administration, Polytechnic State of Sriwijaya, Indonesia), Sari Lestari Zainal Ridho(Department of business administration, Polytechnic State of Sriwijaya, Indonesia)
990	14.50 – 15.00	Analysis of the Influence of Tourist / Tourism Satisfaction on Competitiveness of Tourism Destination in Palembang Citi	Mutiara Lusiana Annisa (Accounting Study Program, Politeknik PalComTech, Palembang, 30129, Indonesia), Ganda Hutasoit (Accounting Study Program, Politeknik PalComTech, Palembang, 30129, Indonesia)
993	15.00 – 15.10	Multimedia Implementation in Tourism Promotion for Increase Regional Original Revenue by Pagaralam City Government	J Febriantoko(Accounting Study Program, Politeknik Palcomtech, Palembang, Indonesia), Hendra Rotama (Visual Communication Design Study Program, Politeknik Palcomtech, Palembang, Indonesia)
994	15.10 – 15.20	Effect of Companies that Do and Do Not Perform Income Smoothing on Automotive Sector Company Value	Febrianty(Accounting Study Program of PalComTech Polytechnic Jl. Basuki Rahmat No.05, Palembang 30129, Indonesia), Ria Kumala (Accounting Study Program of PalComTech Polytechnic Jl. Basuki Rahmat No.05, Palembang 30129, Indonesia)
1001	15.20 – 15.30	Analysis of The Interest of Msme Entrepreneurs in Palembang City to Conduct Financial Reporting based on Sak Etap by Using Theory of Reason Action Model	Rizki Fitri Amalia (Program Studi Akuntansi, Politeknik Palcomtech, Palembang, Indonesia), Nurussama(Program Studi Akuntansi, Politeknik Palcomtech, Palembang, Indonesia)
	15.30 – 15.40		BREAK
1049	15.40 – 15.50	The Application Factors of Good Government Governance for New Expansion Area	Maria (Accounting Department State Polytechnic of Sriwijaya, Jl. Srijaya Negara -Bukit Besar Palembang), Rosy Armaini(Accounting Department State Polytechnic of Sriwijaya, Jl. Srijaya Negara -Bukit Besar Palembang), Nurhasanah(Accounting Department State Polytechnic of Sriwijaya, Jl. Srijaya Negara -Bukit Besar Palembang), Yevi Dwitayani(Accounting Department State Polytechnic of Sriwijaya, Jl. Srijaya Negara -Bukit Besar Palembang)
1075	15.50 – 16.00	Implications of Changes in Hospital Financial Performance Assessment as Public	Nurhasanah(Indonesia), Rosy Armaini(Indonesia), Maria(Indonesia), Yevi Dwitayanti(Indonesia)

		Services in 2013-2016	
1098	16.00 – 16.10	Determinants of Accounting Information Systems' Quality and Its Implication on The Quality of Accounting Information	Lambok Vera Riama Pangaribuan(Accounting Department, State Polytechnicof Sriwijaya), Sri Hartaty(Accounting Department, State Polytechnicof Sriwijaya), Anggeraini Oktarida(Accounting Department, State Polytechnicof Sriwijaya), Eka Jumarni Fithri(Accounting Department, State Polytechnicof Sriwijaya)
1104	16.10 – 16.20	Performance of Provincial Government Implementation of Indonesia in Financial Sector	Kuo Keo Pisey(Enterpreneurship Development Institute, CIEDI Cambodia-India, Cambodia), Rita Martini(Department of Accounting, State Polytechnic of Sriwijaya, Palembang, Indonesia), Selviana Chalifah(Department of Accounting, State Polytechnic of Sriwijaya, Palembang, Indonesia), Yuli Antina Aryani(Department of Accounting, State Polytechnic of Sriwijaya, Palembang, Indonesia), Kartika Rachma Sari(Department of Accounting, State Polytechnic of Sriwijaya, Palembang, Indonesia), and Choiruddin Choiruddin(Department of Accounting, State Polytechnic of Sriwijaya, Palembang, Indonesia)
1111	16.20 – 16.30	The Effect of Good Governance and Accrual Accounting on Apparatus Behavior with Supporting Devices as Moderators	Henny Yulsiati, SE, M.Ak.(Lecturer in Accounting Department State Polytechnic of Sriwijaya), Sandrayati, SE, M.Sc., Ak.(Lecturer in Accounting Department State Polytechnic of Sriwijaya), Dra. Susi Ardiani, M.Si.(Lecturer in Accounting Department State Polytechnic of Sriwijaya), Sarikadarwati, SE, M.Sc., Ak., CA(Lecturer in Accounting Department State Polytechnic of Sriwijaya)
1113	16.30 – 16.40	The Quality Of SIMDA BMD and User Satisfaction : Study on The Government of South Sumatera Province	Kartika Rachma Sari(Department of Accounting, Sriwijaya State Polytechnic, Palembang , Indonesia), Zainal Arifin(Department of Accounting, Sriwijaya State Polytechnic, Palembang , Indonesia), Desi Indriasari(Department of Accounting, Sriwijaya State Polytechnic, Palembang , Indonesia) , Choirudin ³ , and Rita Martini(Department of Accounting, Sriwijaya State Polytechnic, Palembang , Indonesia)
1121	16.40 – 16.50	The Influence of Locally-Generated Revenue, Special Allocation Funds, Remaining Budget to Capital Expenditure Capacity on Capital Expenditure in Regency / City Government of South Sumatera in 2013-2017	Faridah Iryani (Accounting Departement Polytechnic Sriwijaya, Jln. Srijaya Negara Palembang, Indonesia), M. Husni Mubarak (Accounting Departement Polytechnic Sriwijaya, Jln. Srijaya Negara Palembang, Indonesia), Nelly Masnila (Accounting Departement Polytechnic Sriwijaya, Jln. Srijaya Negara Palembang, Indonesia)
1122	16.50 – 17.00	Comparative Analysis of Effectiveness, Efficiency, Openness, Competitive, Transparent, Fair, Accountabel for Process of Procurement of Goods and Services	Eka Jumarni Fithri, S.E.,M.Si.,Ak.,CA(Sriwijaya State Polytechnic Accounting Department), DR. Lambok Vera Riama, S.E.,M.Si.,Ak.,CA(Sriwijaya State Polytechnic Accounting Department), Sri Hartaty, S.E.,M.Si.,Ak., CA(Sriwijaya State Polytechnic Accounting Department), Anggeraini Oktarida S.E.,M.Si.,Ak., CA(Sriwijaya State Polytechnic Accounting Department)
1123	17.00 – 17.10	The Effect of Sme Characteristics on Business Development in Small Weaving Business in Palembang	Siska Aprianti(Accounting Department - Sriwijaya State Polytechnic), Bainil Yulina(Accounting Department - Sriwijaya State Polytechnic), Sulaiman(Accounting Department - Sriwijaya State Polytechnic)

		Tuan Kentang Area	
1128	17.10 – 17.20	The Service Quality Toward The Satisfaction and Trust of Bpjs's Patients at Siti Khadijah Islamic Hospital Palembang	Sandrayati (Accounting Departement Polytechnic Sriwijaya, Jln. Srijaya Negara Palembang, Indonesia), Susi Ardiani (Accounting Departement Polytechnic Sriwijaya, Jln. Srijaya Negara Palembang, Indonesia), Henny Yulsiati (Accounting Departement Polytechnic Sriwijaya, Jln. Srijaya Negara Palembang, Indonesia), Sarikadarwati (Accounting Departement Polytechnic Sriwijaya, Jln. Srijaya Negara Palembang, Indonesia)
1150	17.20 – 17.30	The Effect of Government Capital Expenditure on Economic Growth and Its Impact on Community Welfare	Nelly Masnila (Departement of Accounting, State Polytechnic of Sriwijaya), Lisnini (Departement of Business Administration, State Polytechnic of Sriwijaya), Silvana Oktanisa
1159	17.30 – 17.40	Factors Analysis of Childhood Individuals Affect Finance Managing Capabilities Workers in Palembang City	Marieska Lupikawaty (State Polytechnic of Sriwijaya, Business Administration Major, Prodi Bachelor of Business Management), Yusleli Herawati (State Polytechnic of Sriwijaya, Business Administration Major, Prodi Bachelor of Business Management), Purwati (State Polytechnic of Sriwijaya, Business Administration Major, Prodi Bachelor of Business Management), Elisa (State Polytechnic of Sriwijaya, Business Administration Major, Prodi Bachelor of Business Management).

TABLE OF CONTENT

COFFEE GROUPING CONTROL SYSTEM USING TCS3200 SENSOR BASED ON XBEE PRO	16
Sarjana ¹ , Emilia Hesti ¹ , Sholihin ¹ , R.A. Halimah Tussyadyah ¹	16
¹ Electrical Engineering Dept. Politeknik Negeri Sriwijaya Palembang, Indonesia	16
MIMO PRINTED DIPOLE ANTENNA FOR WIMAX NETWORK USAGE APPLICATION	17
Suzanzeff ¹ , Ciksadan ¹ , Irawan Hadi ¹ , R.A. Halimah Thusyadiyah ¹	17
¹ Electrical Engineering Dept. Politeknik Negeri Sriwijaya Palembang, Indonesia	17
MOTION CONTROL ANALYSIS OF A SPHERICAL ROBOT AS A SURVEILLANCE ROBOT	18
Tresna Dewi ¹ , Pola Risma ¹ , Yurni Oktarina ¹ and RD Kusumanto ¹	18
¹ Politeknik Negeri Sriwijaya, Jalan Srijaya Negara Bukit Besar Palembang, Indonesia 30139.....	18
Wajanbolic Reflection Antenna For 4G Service in Urban and SubUrbanAreas	19
Jon Endri ¹ , Ade Silvia Handayani ¹ , Raudatul Jannah ¹	19
¹ Politeknik Negeri Sriwijaya, Jalan Srijaya Negara Bukit Besar Palembang, Indonesia 30139.....	19
Enhancement of Navigation Systems of Mobile Robots in Gas Leakage Searching.....	20
Nyayu Latifah Husni ¹ , Nadya Lukita ¹ , Masayu Annisah ¹ , Ade Silvia Hadayani ¹ , Adella Rialita ¹ , Siti Nurmaini ² , Irsyadi Yani ²	20
¹ Politeknik Negeri Sriwijaya, Jalan Srijaya Negara Bukit Besar Palembang, Indonesia.....	20
Higher Education Role in Supporting Indonesian Government Policy in Developing Renewable Energy	21
Ahmad Taqwa ¹	21
¹ Electrical Engineering Department, Politeknik Negeri Sriwijaya	21
Energy Transfer Provision Based on RF-Radio Frequency as Established Solution of Learning Process Using Laptop and Wireless Projector	22
Suroso ¹ , Sopian Soim ¹ , Ade Silvia Handayani ¹ , Ahmad Taqwa ¹	22
¹ Teknik Elektro, Politeknik Negeri Sriwijaya.....	22
Transmission Performance Analysis of TDMA Radio and MAC Communication of TDMA Protocol in TDMA Radio	23
¹ Ferry Nando ² A. Permatasari, ² Lindawati, ² A.S. Handayani*,.....	23
¹ Nittan Valve Kabushiki Kaisha, Japan	23
² Telecommunication Engineering, Politeknik Negeri Sriwijaya	23
Milling Process Prediction Model of Sugarcane Juice Using Artificial Neural Networks (ANN)	24
D Oktarini ¹ , A S Mohruni ^{2*} , S Sharif ³ , M Yanis ² , Madagaskar ⁴	24
¹ Department of Industrial Engineering, University of Tridianti (UTP) ² Mechanical Engineering Department, Sriwijaya University ³ Dept. of Materials Manuf. and Ind. Engineering, Universiti Teknologi Malaysia ⁴ Mechanical Engineering Department, University of Tridianti (UTP).....	24
Experimental Study of Low-rank Coal from South Sumatra used in Humidifier and Flash Dryer	25

Irwin Bizzy ¹ , Riman Sipahutar ¹ , Eddy Ibrahim ² , Muhammad Faizal ^{3,c}	25
¹ Mechanical Engineering Department, Sriwijaya University ² Mining Engineering Department, Sriwijaya University ³ Chemical Engineering Department, Sriwijaya University	25
Investigation of Finite Element Modelling on Thin-Walled Machining of Ti6Al4V using DEFORM-3D.....	26
A S Mohruni [*] , M Zahir ¹ , M Yanis ¹ , S Sharif ² , I Yani ¹	26
¹ Mechanical Engineering Department, Sriwijaya University ² Dept. of Materials Manuf. and Ind. Engineering, Universiti Teknologi Malaysia	26
Optimization of Molding Parameters for a Micro Gear with Taguchi Method.....	27
Min-Wen Wang ¹ , Fatahul Arifin ^{1,2,(a)} , Thi Truc-Ngan Huynh ³	27
¹ Mechanical Engineering Department, National Kaohsiung University of Science and Technology, Kaohsiung, 80778, Taiwan	27
² Mechanical Engineering Department, Politeknik Negeri Srijaya, Palembang, Indonesia.....	27
³ Industrial Engineering and Management Department, National Kaohsiung University of Applied Sciences, Kaohsiung, Taiwan	27
The effect of air flow rate and ratio between coal and coconut shell on heat energy produced in an updraft gasifier.....	28
Riman Sipahutar ^{1,a} , Diah Kusuma Pratiwi ^{1,b} , Amir Arifin ^{1,c} , Irwin Bizzy ^{1,d}	28
¹ Mechanical Engineering Department, Engineering Faculty, Sriwijaya University.....	28
Toward Real Time IoT Based Paste Monitoring System for Small to Medium Enterprise (SME)	29
Erry YT Adesta ¹ , I Hilmy ¹ , Avicenna ¹ and D Agusman ²	29
¹ Department of Manufacturing and Materials Engineering, International Islamic University Malaysia (IIUM), Jalan Gombak, 53100 Kuala Lumpur, Malaysia	29
² Jurusan TeknikMesin, FakultasTeknik, UniversitasMuhammadiyah Prof. Dr. HAMKA, Jl. Limau 2 KebayoranBaru, Jakarta Selatan, Indonesia.....	29
Reducing CO₂ Emissions from Land Transport Sector in Indonesia: Case Study Automobiles Sector.....	30
Indra Chandra Setiawan ^{1,2} , Indarto ¹ , and Deendarlianto ¹	30
¹ Department of Mechanical & Industrial Engineering, Faculty of Engineering, GadjahMada University, JalanGrafika No. 2, Yogyakarta 55281, Indonesia	30
² PT Toyota Motor Manufacturing Indonesia, Jl. LaksamanaYosSudarsoSunter II, Jakarta Utara14330, Indonesia	30
HIGH QUALITY CONCRETE BY USING ADMIXTURE SUPERPLASTICIZER AND ADDITIONAL LIME OFF	31
Kosim ¹ , Raja Marpaung ¹ , Zainuddin ¹ , Darma Prabudi ¹	31
¹ State Polytechnic of Sriwijaya Indonesian	31
Criteria Analysis, weight and Priority for Handling Bridges in Kudus District using AHP and Promethee II methods.....	32
E D W Prasetyo ¹ , Mudjiastuti Handajani ² dan Ismiyati ²	32
¹ Dinas Pekerjaan Umum dan Penataan Ruang Kabupaten Kudus 59311, Jawa Tengah, Indonesia 32	
² Magister Teknik Sipil Universitas Diponegoro Semarang 50275, Indonesia	32
A Scouring Patterns Around Pillars of Sekanak River Bridge.....	33

Achmad Syarifudin ¹ , Dewi Sartika ²	33
¹ Civil Engineering Department, Universitas Bina Darma, Palembang, Indonesia.....	33
² Balai Besar Wilayah Sungai Sumatera VIII, Ministry of Public Works and Housing Settlement, Indonesia.....	33
IRRIGATION MAINTENANCE PRIORITY ANALYSIS (CASE STUDY: IRRIGATION AREAS IN SALATIGA CITY)	34
Hendarto Efendi ¹ , Sri Sangkawati ² , Pranoto Samto Atmodjo ²	34
¹ Public Works and Spatial Planning Department of Salatiga City 50724, Central Java, Indonesia	34
² Master in Civil Engineering Diponegoro University Semarang 50275, Indonesia	34
THE INFLUENCE OF TEMPERATURE CHANGES ON PERFORMANCE LASTON (AC-WC) PLASTIC WASTE WITH THE MARSHALL METHOD.....	35
Mahmuda ¹ , Sumiati ¹ , Puryanto ¹ and M. Prawira. W ¹	35
¹ Civil Engineering Departement, Sriwijaya State Polytechnic, Srijaya Negara street, Bukit Besar Plg, 30139, Indonesia.....	35
Utilization of local material of south sumatra for porous asphalt type ac-wc to improve security levels of road and environmentally friendly	36
Amiruddin ¹ , Ibrahim ¹ , I Sulianti ¹ and A Subrianto ¹	36
¹ State Polytechnic of Sriwijaya, Jl. Srijaya Negara Bukit Besar Palembang 30139, South Sumatera – Indonesia.....	36
Tracing the City Pattern of Netherlands and Indonesia using Depth Calculation and Connectivity.....	37
Pindo Tutuko ¹ , Nurhamdoko Bonifacius ¹ , Dani Yuniawan ² , Adisti Safrilia ¹ , Mochamad Rizqi Junianto ³ , Reynold Johan Aleksander Telnoni ³	37
¹ , Department of Architecture, University of Merdeka Malang, Malang 65146, Indonesia	37
² , Department of Industrial Engineering, University of Merdeka Malang, Malang 65146, Indonesia	37
³ , Master Program, Department of Architecture, University of Merdeka Malang, Malang 65146, Indonesia	37
IoT Technology Monitoring, Controlling and Data Logging for ATS on Grid Connected Solar-Wind Hybrid System	38
Budiman ¹ , Ahmad Taqwa ² , RD.Kusumanto ³	38
¹ Applied Master of Renewable Energy Engineering, Renewable Energy Engineering Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara Bukit Besar, Palembang, South Sumatera Indonesia 30139	38
^{2,3} Electrical Engineering, Electronics Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara Bukit Besar, Palembang, South Sumatera Indonesia 30139.....	38
Design of Mini Horizontal Wind Turbine for Low Wind Speed Area.....	39
Agum Try Wardhana ^{1,*} , Ahmad Taqwa ² , Tresna Dewi ²	39
¹ Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang, 30139, Indonesia	39
² Electrical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, 30139, Indonesia ..	39
A Micro Hydro Pelton Turbine Prototype (Review of the effect of water debitand nozzleangle to rotation and pelton turbine power)	40
Septa EkaLesmana ¹ , Leila Kalsum ² , and Tri Widagdo ³	40

¹ Applied Master of Renewable Energy Engineering, State Polytechnic of Sriwijaya, Palembang 30139, Indonesia	40
² Chemical Engineering Department, Renewable Energy Engineering, State Polytechnic of Sriwijaya, Palembang 30139, Indonesia	40
³ Mechanical Engineering Department, State Polytechnic of Sriwijaya, Palembang 30139, Indonesia	40
Optimalization of Antimicrobial Production from Endophytic Fungus <i>Sporothrix sp.</i> LBKURCC43 by Modifying Carbon and Nitrogen Sources of Fermentation Media	41
Abdul Rohman Wali ¹ , Nursyirwani ² , Saryono ^{1*}	41
¹) Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Riau	41
²) Department of Marine Sciences, Faculty of Fishery and Marine Sciences, Universitas Riau.....	41
ACHIEVEMENT ANALYSIS OF ONE CYLINDER DIESEL ENGINE USING VIRGIN COCONUT OIL BIODIESEL	42
Burhan Yuliansyah ¹ , Triwidagdo ² , Abuhasan ³	42
¹) Applied Master of Renewable Energy Engineering Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia	42
²) Mechanical Engineering Department Politeknik Negeri Sriwijaya Palembang 30139, Indonesia ..	42
³) Chemical Engineering Department Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia ..	42
Optimization of Monocrystalline Solar Panels Using Reflector Scanning Technology	43
Fiqri Al Faruqi ¹ , RD. Kusumanto ² , and Abu Hasan ³	43
¹ Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia	43
² Electrical Engineering Department, Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia	43
³ Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia ..	43
Performance Test Of Pelton Micro-Hydro Turbine With The Variations Of Nozzle Output Angle, Blades Number And Water Flow Discharge To Produce The Maximum Output Power	44
Echa Okdinata ¹ , Abu Hasan ² , and Carlos Sitompul ³	44
¹ Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia	44
² Chemical Engineering Department, Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia	44
³ Electrical Engineering Department, Politeknik Negeri Sriwijaya, Palembang 30139,	44
Indonesia	44
MINIMUM POWER OF SOLAR PANEL MOVEMENT IN SOLAR TRACKER SYSTEM PROTOTYPE.....	45
Aldony Reco Putra, RD Kusumanto ² , and Ahmad Taqwa ³	45
¹ Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia	45
² Electrical Engineering Department, Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia	45
³ Electrical Engineering Department, Politeknik Negeri Sriwijaya, Palembang 30139, Indonesia ..	45
PLC Application as an Automatic Transfer Switch for On-Grid PV System; Case Study PLTS Jakabaring Palembang.....	46

Achmad Kurniawan ¹ , Ahmad Taqwa ¹ , and Yohandri Bow ¹	46
¹ Politeknik Negeri Sriwijaya, Jalan Sriwijaya Negara Bukit Besar Palembang, Indonesia 30139.....	46
Automatic cooling system for efficiency and output enhancement of a PV system application in Palembang, Indonesia.....	47
Hadli A. Harahap ¹ , Tresna Dewi ² , Rusdianasari ³	47
¹ Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang, 30139, Indonesia	47
² Electrical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, 30139, Indonesia ..	47
³ Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, 30139, Indonesia ..	47
Sea Salt Deposition Effect On Output And Efficiency Losses Of The Photovoltaic Installation System; A Case Study In Palembang, South Sumatera.....	48
Firdaus Setiawan ¹ , Tresna Dewi ² and Syahirman Yusi ³	48
¹ Renewable Energy Department, Politeknik Negeri Sriwijaya Palembang, Indonesia	48
² Electro Department, Politeknik Negeri Sriwijaya Palembang, Indonesia	48
³ Bussiness Administration Department, Politeknik Negeri Sriwijaya Palembang, Indonesia.....	48
Effects of Direct Glass Film Installation on to Photovoltaic Solar Panel.....	49
Hendra Kusuma Negara, S.T ¹ , Dr. Rd. Kusumanto, ST. MM ² , Dr. Ir. Abu Hasan, M. Si ³	49
¹ Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya Palembang	49
² Electrical Engineering Department, Politeknik Negeri Sriwijaya Palembang.....	49
³ Chemical Engineering Department, Gajah Mada University	49
FFA reduction in a waste cooking oil as a raw material for biodiesel with activated coal ash adsorbent	50
Endang Susilowati ¹ , Abu Hasan ² , and Aida Syarif ³	50
¹ Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Jl. Sriwijaya Negara, Palembang, 30139, Indonesia.....	50
^{2,3} Chemical Engineering Department, Politeknik Negeri Sriwijaya, Jl. Sriwijaya Negara, Bukit Besar, Palembang.....	50
Cooling effect with heat sink fan to improve solar panel (photovoltaic) performance.....	51
Efsilon K.A. Fatoni ^{1*} , Ahmad Taqwa ² , Rd. Kusumanto ²	51
¹ Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya Palembang Jalan Sriwijaya Negara, Bukit Besar, Palembang 30139, Indonesia.....	51
² Electrical Engineering Department Politeknik Negeri Sriwijaya Palembang Jalan Sriwijaya Negara, Bukit Besar, Palembang 30139, Indonesia.	51
Effect of Reaction Temperature for Biodiesel Quality Using Microwaves Technology	52
RA Nurul Moulita ¹ , Rusdianasari ¹ , and Leila Kalsum ¹	52
¹ Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Jl. Sriwijaya Negara Palembang, 30139, Indonesia	52
² Chemical Engineering Department, Politeknik Negeri Sriwijaya, Jl. Sriwijaya Negara Palembang, 30139, Indonesia	52
The Potential of Microwave in the manufacture of Biodiesel by Using Crude Palm Oil (CPO).53	
Sandhy Yunsari ¹ , Rusdianasari ² , and A. Husaini ²	53

¹ Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang, 30139, Indonesia	53
² Chemical Engineering Department, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang, 30139, Indonesia	53
Experimental investigation scenarios of partial shade on the PV (photovoltaic) module application in Palembang, Indonesia	54
Herdian Wibowo ¹ , Yohandri Bow ^{2*} , Carlos, RS ³	54
¹ Applied Master of Renewable Energy Engineering, Politeknik Negeri Sriwijaya, Palembang, 30139, Indonesia	54
² Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, 30139, Indonesia ..	54
³ Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, 30139, Indonesia ..	54
Community Empowerment at Sri Tiga Village, Sumber Marga Telang Sub-District, Banyuasin Regency, The Province of South Sumatera; Technology for Green Production of Nata de coco and Swamp Water Filtration	55
M. Verawaty ^{1*} B. Lakitan ^{2,3} and S.Herlinda ^{4,5,6}	55
¹ Biology Department, Faculty of Math and Natural Science, Sriwijaya University, South Sumatera, Indonesia	55
² Faculty of Agriculture, Sriwijaya University, South Sumatera, Indonesia.....	55
³ Ministry for Research & Technology (RISTEK), Republic of Indonesia, Jakarta, Indonesia ⁴ Plant Pest and Disease Department, Faculty of Agriculture, Sriwijaya University, Indonesia.....	55
⁵ Crop Science Program, Graduate School, Sriwijaya University, Indonesia	55
⁶ Center for Sub-optimal Lands (PUR-PLSO), Sriwijaya University, Palembang, Indonesia.....	55
Effect of Potential Toxic Cyanobacteria <i>Planktothrix agardhii</i> isolated from A Retention Pond in Palembang to <i>Cyprinus carpio</i> L: A Preliminary Study	56
R. Wulandari ¹ M. Amalia ^{1*} R. Aryawati ² , SA. Hamim ³ and M. Verawaty ^{1*}	56
¹ Biology Department, Faculty of Math and Natural Science, Sriwijaya University, South Sumatera, Indonesia	56
² Marine Department, Faculty of Math and Natural Science, Sriwijaya University, South Sumatera, Indonesia	56
³ Faculty of Engineering, University of Indo Global Mandiri, South Sumatera, Indonesia	56
Analysis of Biodiesel Conversion on Raw Material Variation Using Statistical Process Control Method	57
W Andalia ¹ , I Pratiwi ¹ , S Arita ² ,	57
¹ Department of Industrial Engineering Faculty of Engineering, Universitas Tridianti, Palembang, 30129, Indonesia	57
² Department of Chemical Engineering Faculty of Engineering, Universitas Sriwijaya, Palembang, 30139, Indonesia	57
NITROGEN GAS PRODUCTION BY PRESSURE SWING ADSORPTION (PSA) METHOD USING CARBON MOLECULAR SIEVE (CMS) AS OXYGEN ADSORPTION.....	58
A Manggala, A Zikri, Erlinawati, Sutini PL, M Arifin*	58
Energy Engineering, Polytechnic State of Sriwijaya	58
HYDROGEN STORAGE FROM THE RESULT OF REACTOR ACE (ALUMINIUM CORROSION AND ELECTROLYSIS) PRODUCTION BY PYSISORPTION METHOD	59
A Zikri [*] , Erlinawati, L Trisnaliani, A Aswan, A Firdausia.....	59

Energy Engineering, Polytechnic State of Sriwijaya	59
Effectiveness of Electrocoagulation Method in Processing Integrated Wastewater Using Aluminum and Stainless Steel Electrodes.....	60
Rusdianasari ¹ , Jaksen ¹ , Ahmad Taqwa ² , Yudi Wijarnako ²	60
¹ Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang ² Electrical Engineering Department, Politeknik Negeri Sriwijaya, Palembang	60
Potential of Clay in Coal Mining of Tanjung Enim Area As a Filler on Rubber Compound.....	61
A Hasan ^{1,2}), L Kalsum ¹), M Yerizam ¹), R Junaidi ¹), M Taufik ¹), M Aznury ¹), and Fatria ¹)	61
¹ Chemical Engineering Department, State Polytechnic of Sriwijaya Jl. Sriwijaya Negara Bukit Besar Palembang Indonesia 30139	61
Influence The addition of Lapindo mud is calcined to the quality of Cement Podzoland by using Electric Furnace	62
Robert Junaidi ¹), Abu Hasan ²), dan Mustain Zamhari ³)	62
^{1&3} teaching staff Bachelor Degree (D IV) Chemical Engineering State Polytechnic of Sriwijaya ..	62
² teaching staff of Master of Applied Renewable Energy Technique of State Polytechnic of Sriwijaya	62
An Analysis Of The Impact Of The Coal Mining Activities On The Condition Of Water Quality In The Coal Mining Areas In South Sumatra	63
Marhaini, Legiso, Heny Juniar, Mubin	63
Department of Chemical Engineering, Faculty of Engineering, Muhammadiyah University, Palembang, Indonesia	63
Sodium silicate composite filled by zinc oxide as low resistance thermal grease	64
Wahyu Jati Kusuma ¹ , Fadarina ¹ , and Abu Hasan ^{1,2}	64
¹ Department of Chemical Engineering, State Polytechnic of Sriwijaya, Sriwijaya Negara Street, Palembang 30139, Indonesia	64
Adsorption Model in Removal of Direct Synthetic Dyes in Aqueous Solution onto Tea Waste ..	65
L Cundari*, B D Afrah, D I Utami, NIMatondang	65
Chemical Engineering Department Faculty of Engineering Universitas Sriwijaya Jl. Raya Palembang – Prabumulih Km.32 Indralaya, OI, Sumatera Selatan 30662	65
Production of Biogas from Artificial Substrates (Oil, Protein and Cellulose) by Indigenous Anaerob Bacteria	66
Putri Agustriyani, Muhammad Said ^{1*} , Ade Tri ¹ , Arifita S ¹ , Muhammad Faizal ¹	66
¹ Chemical Engineering Department, Faculty of Engineering, Universitas Sriwijaya, Palembang, 30139, Indonesia	66
Mechanical properties of bioplastics product from <i>Musa paradisiaca formatypica</i> concentrate with plasticiser variables	67
Sofiah ^{1(a)} , Yuniar, Martha Aznury ¹ , and Melianti ¹)	67
Teknik Kimia, Politeknik Negeri Sriwijaya.....	67
¹ Department of Chemical Engineering, Politeknik Negeri Sriwijaya, Jl. Sriwijaya Negara, Bukit Besar, Palembang 30139, Indonesia Telp. (+62 711) 353414 / Fax. (+62 711) 355918	67
Oxygen Adsorption Kinetics Study in PSA (Pressure Swing Adsorber) for Nitrogen Production	68
I Purnamasari ^{1,2} , M Yerizam ¹ , A Hasan ¹ and R Junaidi ¹	68

¹ Chemical Engineering Department, State Polytechnic of Sriwijaya, South Sumatera, Indonesia..	68
Characteristics of Activated Charcoal from Coconut Midribs in Jumputan Waste Adsorption Process.....	69
Enggal Nurisman ¹ , Syaiful ¹ , Rahmatullah ¹	69
¹ Chemical Engineering Department Sriwijaya University, Palembang 30128, Indonesia	69
Geochemical Organic of AirbenakatBlack shale in Berau Areas, Jambi.....	70
Putri Dwi Afifah ¹ , Budhi Setiawan.....	70
¹ Sriwijaya University	70
O-rings material deterioration dueto contact with biodiesel blends in a dynamic fuel flow.....	71
L N Komariah ¹ , S Arita ¹ , F Aprianjaya ² , M G Novaldi ² , M F Fathullah ²	71
¹ Department of Chemical Engineering Faculty of Engineering, Universitas Sriwijaya, Palembang, 30139, Indonesia	71
² Energy and Environmental Engineering Laboratory Universitas Sriwijaya, Indralaya Ogan Ilir, 30136 Indonesia.....	71
Mathematics Instructional Package Based on Creative Problem Solving to Improve Additive Reasoning Ability and Creative Thinking Ability	72
Yulianto Wasiran	72
Departement of Chemical Engineering. State of Polytechnic Sriwijaya. Jalan Srijaya Negara Bukit Besar. Palembang.Indonesia	72
Lipid Extraction from Mikroalgae <i>Spirulina Platensis</i> for Raw Materials Biodiesel.....	73
Leila Kalsum ¹ , Erwana Dewi ² , Elina Margarety ² and Aisyah Suci Ningsih ²	73
¹ Applied Renewable Energy Engineering Study Program, State Polytechnic of Sriwijaya,Palembang 30139, Indonesia.	73
² Chemical Engineering Study Program, State Polytechnic of Sriwijaya, Palembang 30139, Indonesia.	73
The Characteristics of Particle Board from Empty Fruit Palm Oil (<i>Elaeis guineensis Jacq</i>) by using an Adhesive of Liquid Guava Rod Bark.....	74
Siti Chodijah ^(a) , Erwana Dewi, and Jaksen,	74
Staff Edukatif of Chemical Engineering Department , Polytechnic Negeri Sriwijaya,	74
PRODUCTION OF GLUCOSE FROM WASTEBARK ACACIA MANGIUM USING DELIGNIFICATION AND CHEMICAL HYDROLYSIS PROCESS	75
Susila Arita ¹ , Fitri Hadiah ¹ , Rizky Amalia ¹ , Elsi Rosmalisa ¹	75
¹ Department of Chemical Engineering Faculty of Engineering, Universitas Sriwijaya Jl. Raya Prabumulih Inderalaya-Palembang-South Sumatra	75
Pectin Ekstraktion From Kepok Banana Peels (<i>Musa paradisiaca fomatypica</i>) As Biodegradable Film Plastic	76
S. Chodijah ^{1,2} , M Husaini ¹ , M Zaman ¹ and Hilwatulisan ¹	76
¹ Chemical Engineering Department, State Polytechnic of Sriwijaya, South Sumatera, Indonesia ..	76
The Effect of Reaction Time and pHon the Modification Process of Sago Starch Oxidation.....	77
Yuniar ^{1,2} , Elina Margarety ¹ , Fadarina, Anerasari M ¹ and Ida Febriana ¹	77
¹ Chemical Engineering Department, State Polytechnic of Sriwijaya, South Sumatera, Indonesia ..	77

Treatment of Leachate from Garbage using Electrocoagulation Type MP-P (MonoPolar-Paralel) Metode.....	78
Anerasari Meidinariasty ^{1*} , Rusdianasari ¹ ,Yohandri Bow ¹ , Irawan Rusnadi ¹ ,A. Lutfi Fuadi ¹	78
¹ Chemical Engineering Department, Politeknik Negeri Sriwijaya, Palembang, Indonesia.	78
Analysis Of Cooler Performance In Supply Air Feed For Nitrogen Production Process Using Pressure Swing Adsorption (PSA) Method	79
Adi Syakdani ^{1*} , Yohandri Bow ¹ , Rusdianasari ¹ , and Muhammad Taufik ¹	79
¹ Chemical Engineering Department, Politeknik Negeri Sriwijaya, Jl. Srijaya Negara Palembang, 30139, Indonesia	79
Fuel Production from LDPE and HDPE Plastic Waste	80
Netty Herawati ¹ , Mardwita ¹ , Eka Sri Yusmartini ¹ , Robiah ¹	80
¹ Chemical Engineering Department, Faculty of Engineering, Universitas Muhammadiyah Palembang Jln. Jend. Ahmad Yani 13 Ulu Palembang 30263, Indonesia	80
Effect of Time and Concentration of Sulfuric Acid on Yield Bioethanol Produced In Making Bioethanol from Peat Soil.....	81
Kiagus Ahmad Roni ¹ , Merisha Hastarina ² , Netty Herawati ³	81
^{1,3} Chemical Engineering Study Program, Engineering Faculty, Muhammadiyah University of Palembang	81
² Industrial Engineering Study Program, Engineering Faculty, Muhammadiyah University of Palembang	81
Banana midrib as substitute for pulp production.....	82
Fadarin ^{1,2} , Mustain Zamhari ¹ , Selastia Yuliaty ¹ , Ibnu Hajar ¹ , Wahyu Jati Kusuma ¹	82
¹ Jurusan Teknik Kimia, Politeknik Negeri Sriwijaya, Palembang 30139.....	82
Fossile Energies for a Sustainable Future?.....	83
Prof. Dr. Werner Rammensee	83
Institute for Geology and Mineralogy.....	83
University of Cologne, Cologne (Germany).....	83
IMPLEMENTATION OF CUSTOMER RELATIONSHIP MANAGEMENT (CRM) WITH USER CENTERED DESIGN (UCD) USER SATISFACTION TO MEASURE E-LIBRARY PT. PUPUKSRIWIDJAJA PALEMBANG	84
Ali Ibrahim ¹ , Dahlia ² , Derdi Kurniawan ³ , Dini Ayu Lestari ⁴ , Enky Ratnasari ⁵ , M.Hengky Setiawan ⁶	84
¹ Research laboratory Entrepreneur Resource Planning Faculty of Computer Science.....	84
^{2,3,4,5,6} Department of Information Systems Faculty of Computer Science Sriwijaya University	84
Weather Classification Based On Hybrid Cloud Image Using Principal Component Analysis (PCA) and Linear Discriminant Analysis (LDA).....	85
Yulia Hapsari ^{1,*} , Syamsuryadi ²	85
¹ Master of Informatics Engineering, Universitas Sriwijaya, Palembang, 30139, Indonesia	85
² Department of Informatics, Faculty of Computer Science, Universitas Sriwijaya, Palembang, 30139, Indonesia	85
IMPLEMENTATION OF CALIBRATION IN GAS HAZARDOUS CO and CO2 IN CLOSED ROOM USING FUZZY LOGIC	86

Slamet Widodo ¹ , M.Miftakhul Amin ² , A.Bahri Joni M ³	86
¹ Department Polytechnic of Sriwijaya, Srijaya Negera Street, Bukit Besar, Palembang - Indonesia	86
² Department Polytechnic of Sriwijaya, Srijaya Negera Street, Bukit Besar, Palembang - Indonesia	86
³ Department of Polytechnic of Sriwijaya, Srijaya Negera Street, Bukit Besar, Palembang - Indonesia	86
A Framework of Promoting Government Services using Social Media: Sudan E-Government Case Study	87
M. S. Adrees ¹ , O. E. Sheta ¹ , M. K. Omer ¹ , D. Stiawan ² , R. Budiarto ¹	87
¹ College of Computer Science and Information Technology, Albaha University, Albaha, Saudi Arabia.....	87
² Dept. of Computer Engineering, Faculty of Computer Science, Universitas Sriwijaya, Palembang, Indonesia	87
Geographic Information System Of Health Service Place In Palembang	88
Arsia Rini ¹ , Heki Aprianto ²	88
^{1,2} Informatics Management Study Program, Politeknik PalComTech, Palembang, 30129, Indonesia	88
Database Design for Website Service Guide “Waterfall Tour South Sumatera”	89
Meidyan Permata Putri* ¹ , Hendra Effendi ²	89
¹ Information Systems Study Program, STMIK PalComTech Palembang	89
² Informatics Engineering Study Program,STMIK PalComTech Palembang	89
The Small and Medium Enterprise (SME) Promotion Website of Pedado Village	90
R A Azdy ¹ and F Darnis ²	90
¹ Informatics Study Program, STMIK PalComTech, Indonesia.	90
² Information System Study Program, STMIK PalComTech, Indonesia.....	90
Advancement Parking Application Using MEAN stack to enhance the advancement of parking application: A narrative review	91
Dian Nugraha ¹ , Falah Y. H. Ahmed ²	91
¹ School of Graduates Studies, Management and Science University, Shah Alam, Selangor Malaysia.....	91
² Faculty of Information Science & Engineering, Management and Science University, Shah Alam, Selangor, Malaysia.....	91
Review Of Progress Expert System: To Detect Diseases In Humans, Plants, And Animals.....	92
Febria Anjara ¹ Adam Amril Jaharadak ²	92
<i>Management and Science University, Malaysia Management and Science University, Malaysia...</i>	<i>92</i>
Blended Learning as Intructional Media : a review of the Literature	93
Nora Listiana ¹ , Dr. Adam AmrilJaharadak ²	93
¹ School of Graduate Studies, Management and Science University, University Drive, Seksyen 13,40100 Shah Alam, Selangor, Malaysia.....	93
QUALITY CONTROL SYSTEM (QCS) OF TOURISM INDUSTRY SECTOR IN PALEMBANG CITY.....	94

Fatmariansi ¹ Saputro, Alan ²	94
¹² Informatics Management, Palcomtech Polytechnic, Palembang,Indonesia	94
THE IMPLEMENTATION OF ANT COLONY ALGORITHM IN FINDING THE SHORTEST TRAVEL ROUTE OF PALEMBANG TOURISM BY ANDROID BASED.....	95
Safira Faizah ¹ , Leni Novianti, S.Kom., M.Kom. ² , Nita Novita, S.E., M.M. ³	95
^{1,2,3} Studi Program DIV Informatics Management Informatics Management Department, State Polytechnic of Sriwijaya	95
THE APPLICATION OF SUPPLY CHAIN MANAGEMENT (SCM) METHODS IN PRACTICUM MATERIAL SUPPLY IN INFORMATICS MANAGEMENT MAJOR, STATE POLYTECHNIC OF SRIWIJAYA	96
Sony Oktapriandi S.Kom., M.Kom. ¹ , Indra Satriadi S.T. M.Kom. ² , Hetty Meileni S.Kom., M.T. ³ , Desi Apriyanty S.E., M.Si	96
^{1,2,3} Informatics Management D4 Study Program Informatics Management Major, State Polytechnic of Sriwijaya.....	96
THE APPLICATION OF SUPPLY CHAIN MANAGEMENT (SCM) METHODS IN PRACTICUM MATERIAL SUPPLY IN INFORMATICS MANAGEMENT MAJOR, STATE POLYTECHNIC OF SRIWIJAYA	97
Sony Oktapriandi S.Kom., M.Kom. ¹ , Indra Satriadi S.T. M.Kom. ² , Hetty Meileni S.Kom., M.T. ³ , Desi Apriyanty S.E., M.Si	97
^{1,2,3} Informatics Management D4 Study Program Informatics Management Major, State Polytechnic of Sriwijaya.....	97
APPLICATION OF MAPPING OF THE RASKIN AID USING AHP FUZZY METHOD BASED ON GEOGRAPHIC INFORMATION SYSTEM	98
Leni N, S.Kom., M.Kom. ¹ , Isnaini Azro, S.Kom., M.Kom. ² , Robinson, S.Kom.,M.Kom.....	98
^{1,3} Study Program of Informatics Management Diploma IV, ² Study Program of Computer Engineering Department of Informatics Management, Polytechnic of Sriwijaya	98
DESIGN OF MOBILE CAMPUS SRIWIJAYA STATE POLYTECHNIC APPLICATION FOR ANDROID.....	99
Dewi Irmawati, S. ¹ , Leni N ² , Devi Sartika ³ , Ienda Meiriska ⁴	99
^{1,2,3,4} Informatics Management of Diploma IV Informatics Management Major, State Polytechnic of Sriwijaya	99
Application Design for Lecturer Advancement in Sriwijaya State Polytechnic Palembang	100
Indri Ariyanti ¹ , Delta Khairunnisa ¹ , Nita Novita ¹ , and M. Aris Ganiardi ¹	100
¹ Informatic Management Department, Politeknik Negeri Sriwijaya	100
THE IMPLEMENTATION OF E-TOURISM IN SOUTH SUMATERA PROVINCE.....	101
Hetty Meileni ¹ , Sony Oktapriandi ² , and Desi Apriyanty ³	101
USING MICROSOFT OFFICE: POWERPOINTS IN MAKING PICTURE-STRIPS TO IMPROVE STUDENTS` SPEAKING AND WRITING SKILLS IN ELT	102
Ida Machdarifah ¹	102
Zakaria ¹	102
¹ State Polytechnic of Sriwijaya.....	102
THE ANALYSIS OF COMMITMENT, DISCIPLINE AND MOTIVATION EFFECTS ON THE NON-DOMICILED CIVIL SERVANTS` PERFORMANCE IN PRABUMULIH MAYOR OFFICE	103

Dibyantoro L. Suhairi Hazisma., Jalaluddin Sayuti., Munparidi	103
Lecturers of Business Administration Department - State Polytechnic of Sriwijaya	103
THE INFLUENCE OF TRAINING ON LECTURER’S PERFORMANCE AT POLITEKNIK NEGERI SRIWIJAYA PALEMBANG	104
Muhammad Noval ¹⁾ , Ida Wahyuningrum ²⁾ , Yusniarti ³⁾ , Henny Madora ⁴⁾	104
Management Informatic Department Politeknik Negeri Sriwijaya Jl. Sriwijaya Negara Bukit Besar-Palembang South Sumatera Indonesia 30139	104
Strategic Sustainable Development for a Prosperous Human Existence through Applied Technological Innovations.....	105
Dr Augustus E. Osseo-Asare	105
Senior Lecturer, Strategy and International Management, Sunderland Business School, Faculty of Business, Law and Tourism, University of Sunderland, St Peter’s Way, Sunderland, SR6 0DD, England, United Kingdom.	105
MARKET ORIENTATION, ENVIRONMENTAL ORIENTATION, CHARACTERISTICS OF INDIVIDUAL ENTREPRENEURS, AND BROADSCOPE INFORMATION ON PERFORMANCE OF SMEs IN PALEMBANG CITY THROUGH ENTREPRENEURSHIP ORIENTATION AS MEDIATED VARIABLE (CASE STUDY: THREE YEARS ESTABLISHED SMEs).....	106
Maretha, Fetty ¹ Sepriansyah, Ahmad Ari Gunawan ²	106
¹ Business Administration Major, Sriwijaya State Polytechnic, Palembang, Indonesia	106
² Informatics Management Major, Sriwijaya State Polytechnic, Palembang, Indonesia	106
The revitalization of Indonesian vocational education throughthe public - private partnership	107
Delfiazi Puji Lestari ¹	107
¹ LPDP / BUDI DN Batch 2017 awardee, Lecturer at STIA & P Annisa Dwi Salfarizi Palembang,South Sumatera, Indonesia. Student of doctoral program in Doctor of Public Administration at Diponegoro University Semarang Indonesia.	107
The readiness of hospitality service of drivers online to serve international visitors: A case study Go Car and Go Grab in Palembang	108
D Djumrianti ¹ , Hanifati ² ,N Rasyid ³ , and P Mandiangan ⁴	108
¹ Senior Lecturer at Department of Business Administration, State Polytechnic of Sriwijaya, Indonesia	108
² Senior Lecturer at Department of Business Administration, State Polytechnic of Sriwijaya, Indonesia	108
³ Senior Lecturer at Department of Business Administration, State Polytechnic of Sriwijaya, Indonesia	108
⁴ Senior Lecturer at Department of Business Administration, State Polytechnic of Sriwijaya, Indonesia	108
THE FACTORS AFFECTING STUDENTS FOR CHOOSING THE BUSINESS ADMINISTRATION DEPARTEMENT AS A COLLEGE IN HIGHER EDUCATION	109
Afrizawati, SE, M.Si ¹⁾	109
Dr. Paisal, SE, M.Si ²⁾	109
Hendra Sastrawinata, SE, M.M ³⁾	109

Ownership Structure, Corporate Social Responsibility (CSR) Disclosure and Company's Financial Performance	110
Neneng Miskiyah ¹ , Hadi Jauhari ^{2a} , Sari Lestari Zainal Ridho ³	110
¹ Department of business administration, Polytechnic State of Sriwijaya, Indonesia.....	110
² Department of business administration, Polytechnic State of Sriwijaya, Indonesia.....	110
³ Department of business administration, Polytechnic State of Sriwijaya, Indonesia.....	110
Factors Analysis of Childhood Individuals Affect Finance Managing Capabilities Workers in Palembang City	111
Marieska Lupikawaty ^{1 *} , Yusleli Herawati ² , Purwati ³ , Elisa ⁴	111
¹²³⁴ State Polytechnic of Sriwijaya	111
Business Administration Major, Prodi Bachelor of Business Management	111
Influence The addition of Lapindo mud is calcined to the quality of Cement Podzoland by using Electric Furnace	112
Robert Junaidi ¹⁾ , Abu Hasan ²⁾ , dan Mustain Zamhari ³⁾	112
^{1&3} teaching staff Bachelor Degree (D IV) Chemical Engineering State Polytechnic of Sriwijaya	112
² teaching staff of Master of Applied Renewable Energy Technique of State Polytechnic of Sriwijaya	112
ANALYSIS OF THE INFLUENCE OF TOURIST / TOURISM SATISFACTION ON COMPETITIVENESS OF TOURISM DESTINATION IN PALEMBANG CITY	113
Mutiara Lusiana Annisa ¹ , Ganda Hutasoit ²	113
¹ Accounting Study Program, Politeknik PalComTech, Palembang, 30129, Indonesia	113
² Accounting Study Program, Politeknik PalComTech, Palembang, 30129, Indonesia	113
MULTIMEDIA IMPLEMENTATION IN TOURISM PROMOTION FOR INCREASE REGIONAL ORIGINAL REVENUE BY PAGARALAM CITY GOVERNMENT	114
J Febriantoko ¹ H Rotama ²	114
¹ Accounting Study Program, Politeknik Palcomtech, Palembang, Indonesia	114
² Visual Communication Design Study Program, Politeknik Palcomtech, Palembang, Indonesia.	114
Effect of Companies That Do and Do Not Perform Income Smoothing on Automotive Sector Company Value.....	115
Febrianty ¹ , Ria Kumala ²	115
^{1,2} Accounting Study Program of PalComTech Polytechnic Jl. Basuki Rahmat No.05, Palembang 30129, Indonesia.....	115
ANALYSIS OF THE INTEREST OF MSME ENTREPRENEURS IN PALEMBANG CITY TO CONDUCT FINANCIAL REPORTING BASED ON SAK ETAP BY USING <i>THEORY OF REASON ACTION MODEL</i>	116
RF. Amalia ¹ Nurussama ²	116
¹ Program Studi Akuntansi, Politeknik Palcomtech, Palembang, Indonesia.....	116
² Program Studi Akuntansi, Politeknik Palcomtech, Palembang,Indonesia.....	116
THE APPLICATION FACTORS OF GOOD GOVERNMENT GOVERNANCE FOR NEW EXPANSION AREA.....	117
Maria Maria ¹⁾ , Rosy Armaini ²⁾ , Nurhasanah ³⁾ dan Yevi Dwitayani ⁴⁾	117
Accounting Department State Polytechnic of Sriwijaya.....	117

Implications of Changes in Hospital Financial Performance Assessment as Public Services in 2013-2016	118
Nurhasanah, Rosy Armaini, Maria, Yevi Dwitayanti	118
Accounting Department State Polytechnic of Sriwijaya.....	118
Determinants of accounting information systems' quality and its implication on the quality of accounting information	119
Lambok Vera Riama Pangaribuan ¹ , Sri Hartaty ² , Anggeraini Oktarida ³ , Eka Jumarni Fithri ⁴	119
^{1,2,3,4} Accounting Department, State Polytechnic of Sriwijaya,	119
Performance of Provincial Government Implementation of Indonesia in Financial Sector	120
Kuo Keo Pisey ¹ , Rita Martini ² , Selviana Chalifah ² , Yuli Antina Aryani ² , Kartika Rachma Sari ² , and Choiruddin Choiruddin ²	120
¹ Entrepreneurship Development Institute, CIEDI Cambodia-India, Cambodia	120
² Department of Accounting, State Polytechnic of Sriwijaya, Palembang, Indonesia.....	120
THE EFFECT OF GOOD GOVERNANCE AND ACCRUAL ACCOUNTING ON APPARATUS BEHAVIOR WITH SUPPORTING DEVICES AS MODERATORS	121
Henny Yulsiati, SE, M.Ak. ¹ , Sandrayati, SE, M.Sc., Ak. ²	121
Dra. Susi Ardiani, M.Si. ³ , Sarikadarwati, SE, M.Sc., Ak., CA ⁴	121
^{1,2,3,4} Lecturer in Accounting Department State Polytechnic of Sriwijaya	121
The Quality of SIMDA BMD and User Satisfaction : Study on The Government of South Sumatera Province.....	122
Kartika Rachma Sari ¹ , Zainal Arifin ¹ Desi Indriasari ² , Choirudin ³ , and Rita Martini ⁴	122
^{1,1,2,3,4} ,Department of Accounting, Sriwijaya State Polytechnic, Palembang , Indonesia.....	122
The Influence of Locally-generated Revenue, Special Allocation Funds, Remaining Budget to Capital Expenditure Capacity on Capital Expenditure in Regency / City Government of South Sumatera in 2013-2017	123
Faridah, M. Husni Mubarak, Nelly Masnila.....	123
Accounting Departement Polytechnic Sriwijaya, Jln. Srijaya Negara Palembang, Indonesia.....	123
COMPARATIVE ANALYSIS OF EFFECTIVENESS, EFFICIENCY, OPENness, COMPETITIVE, TRANSPARENT, FAIR, ACCOUNTABEL FOR PROCESS OF PROCUREMENT OF GOODS AND SERVICES	124
¹ . EKA JUMARNI FITHRI, S.E.,M.Si.,Ak.,CA*, ² DR. LOMBOK VERA RIAMA, S.E.,M.Si.,Ak.,CA *, ³ SRI HARTATY, S.E.,M.Si.,Ak., CA* ⁴ ANGGERAINI OKTARIDA S.E.,M.Si.,Ak., CA.....	124
* Sriwijaya State Polytechnic Accounting Department	124
THE EFFECT OF SME CHARACTERISTICS ON BUSINESS DEVELOPMENT IN SMALL WEAVING BUSINESS IN PALEMBANG TUAN KENTANG AREA	125
Siska Aprianti, Bainil Yulina, Sulaiman.....	125
Accounting Department - Sriwijaya State Polytechnic.....	125
The Service Quality Toward The Satisfaction And Trust Of Bpjs's Patients At Siti Khadijah Islamic Hospital Palembang.....	126
Sandrayati, Susi Ardiani, Henny Yulsiati, Sarikadarwati	126
Accounting Departement Polytechnic Sriwijaya, Jln. Srijaya Negara Palembang, Indonesia.....	126

THE EFFECT OF GOVERNMENT CAPITAL EXPENDITURE ON ECONOMIC GROWTH AND ITS IMPACT ON COMMUNITY WELFARE.....	127
Nelly Masnila ¹ , Lisnini ² , Silvana Oktanisa ³	127
¹ Departement of Accounting, State Polytechnic of Sriwijaya	127
² Departement of Business Administration, State Polytechnic of Sriwijaya.....	127
Orchestrating Dynamic Capabilities for National Competitiveness	128
Prof. Badri Munir Sukoco, SE, MBA, PhD	128
Faculty of Economics and Business, Universitas Airlangga	128

Sodium Silicate Composite Filled by Zinc Oxide as Low Resistance Thermal Grease

Wahyu Jati Kusuma¹, Fadarina¹, and Abu Hasan^{1,2}

¹Department of Chemical Engineering, State Polytechnic of Sriwijaya, Srijaya Negara Street, Palembang 30139, Indonesia

²Corresponding author: abu_hasan@polsri.ac.id

Abstract. Thermal interface material (TIM) is a solution for handling the heat generated by electronic components such as the central processing unit (CPU). CPU thermal management is important to maintain the performance and endurance of the CPU itself. Thermal interface material the type of thermal grease in the form of a composite is very suitable for use on the CPU. Sodium silicate as a matrix and zinc oxide as fillers has many advantages compared to silicon and metal as the raw material for making thermal grease for CPU which is widely used today. This research aims to produce thermal grease for CPU that has better quality than those on the market today, especially when viewed from the value of thermal resistance. Thermal grease is made by mixing nanosized zinc oxide fillers and sodium silicate matrix with filler concentrations of 14 wt%, 18 wt%, and 20 wt%. Thermal resistance is determined by the application-specific test method against time and compared with thermal grease on the market today. The results showed that thermal grease with sodium silicate matrix and 16 wt% zinc oxide filler had 0.0123 °C/W of thermal resistance which was lower than the market thermal grease.

1. Introduction

The development of electronic components is very rapid at this time, especially for CPU, but along with the increasingly sophisticated CPU, the heat generated by the CPU will also be even greater [1]. This poses a challenge to keep the CPU temperature cool, as cold CPU temperatures will impact on performance, durability and good CPU efficiency [2]. To keep the CPU at the allowed operating temperature, not only heat sink as the cooling unit is used, but also third material called TIM [3]. A TIM serves to improve the area of heat transfer between the CPU and the heat sink which is reduced due to the surface roughness of both [4,5].

Generally, TIM is a composite with polymer matrix and filler which has high thermal conductivity [6]. The ideal TIM not only has a high thermal conductivity, but must have a small thermal expansion coefficient, and low thermal resistance [7]. TIM can be categorized as thermal fluid, thermal grease, resilient thermal conductor, and solder [7]. From those various types of TIM, thermal grease is the most suitable for CPU cooling [8].

The most common material used for thermal grease matrix is silicon, besides that thermal grease can also be made from sodium silicate, polyethylene glycol (PEG), and paraffin wax as a matrix [7, 9, and 10]. Among those several matrices of thermal grease, sodium silicate thermal conductivity is the highest one; even its thermal conductivity is almost close to solder, which is about $20.8 \times 10^{-4} \text{ W/cm}^2 \cdot ^\circ\text{C}$ [7, 10, and 11]. Apart from high thermal conductivity, sodium silicate also has a low viscosity of 127



cps which is far lower than silicon with a viscosity of 8,800 cps [7]. This shows good wetting ability and the ability to accommodate more filler. This is an advantage because of the more filler, the higher thermal conductivity of thermal grease [9].

The fillers commonly used in the manufacture of thermal grease are ceramics and metals, but ceramics are more recommended because they are insulators and have lower thermal expansion coefficient [7-9, and 12]. Research conducted by Sim et al. in 2005 stated that ceramic filled TIM with zinc oxide had better thermal conductivity and thermal stability than alumina filled TIM.

Today, the best thermal grease for CPU on the market is silicon matrix and metal filled thermal grease which is very expensive [13]. With all the advantages possess by sodium silicate and zinc oxide, these two materials are very potential to be used as raw materials for the manufacture of thermal grease for CPU.

The aim of this work is to study the true characteristics of sodium silicate and zinc oxide composites as thermal grease for CPU. This work, of course, will be able to provide important data for the development of thermal grease in the future so that later thermal grease will have really good quality and can meet consumer desires.

2. Method

Sodium silicate used in this study was technical grade and obtained from Science Company while zinc oxide was nanosized pro analysis grade and obtained from Prevest DentPro. Thermal grease preparation was done by mixing sodium silicate and zinc oxide in a beaker glass in a certain amount as shown in table 1. The mixture was stirred at a speed of 60 rpm for 5 minutes.

Table 1. Composition of thermal grease.

Sample	Composition Thermal Grease (g)	
	Zinc Oxide	Sodium Silicate
Sample 1	16	84
Sample 2	18	82
Sample 3	20	80

Generally, most studies did not use the actual equipment in carrying out testing [3,6,10,14, and 15] this is considered unable to provide a real picture of the quality of the TIM produced when applied to actual working conditions. It is very good if the resulting TIM is tested with actual equipment. Testing with application-specific test methods is very suitable for testing TIM that is intended for special applications [16], as in this study where thermal grease is intended specifically to be applied to the CPU. Thermal resistance is a parameter of the performance of thermal grease, so it is important to measure to determine the quality of thermal grease [9]. Thermal resistances are obtained using equation (1).

$$R = \frac{T_1 - T_2}{q} \quad (1)$$

Where R is the thermal resistance, q the heat flowing (watt), T_1 the surface temperature of the electronic component ($^{\circ}\text{C}$), T_2 the surface temperature of the heat sink ($^{\circ}\text{C}$) used during testing. To measure the thermal resistance of thermal grease, first the CPU thermal design power (TDP) value was needed, the CPU TDP value was calculated as q. Thermal grease was weighed as much as m (g) and applied to the CPU by flattening it to cover the entire surface of the CPU. The CPU was installed on the computer motherboard, the heat sink was mounted on the computer's CPU, the thermocouple and the computer was turned on, and then CPU stress was run. At the same time the T_1 temperature of the CPU surface and T_2 temperature of the CPU heat sink surface was recorded, and then thermal resistance of thermal grease was calculated using equation (1). The value of thermal resistance was measured by time and compared with market thermal grease (TGP) which was a silicon matrix and

metal filled thermal grease. To maintenance the same and matches the CPU TDP for each experiment the CPU was stressed so that the CPU was forced to always work 100% (full load).

3. Result and discussion

The following is figure 1 which shows the thermal resistance of composites with sodium silicate matrix and zinc oxide fillers as thermal grease compared to TGP as a function of time.

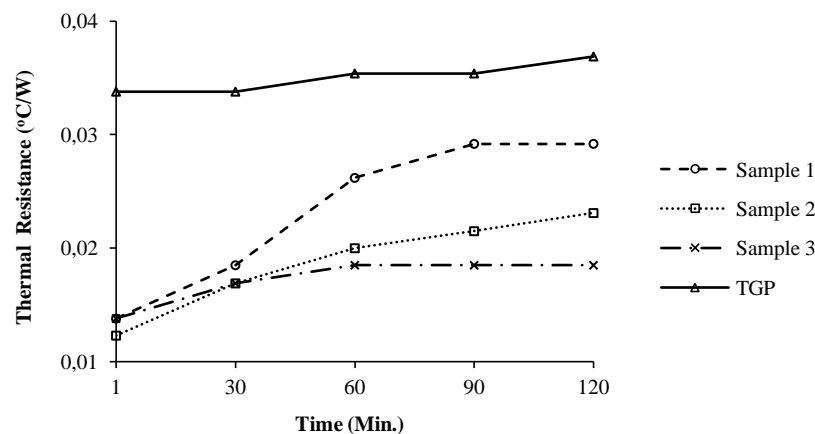


Figure 1. Thermal resistance of thermal grease as a function of time.

Figure 1 shows that at 1-120 minutes the thermal resistance of thermal grease based on sodium silicate and zinc oxide, sample 1-3, are lower than silicon and metal based thermal grease, TGP. This indicates that sodium silicate and zinc oxide based thermal grease has better performance than silicon and metal based thermal grease as the lower thermal resistance, the better thermal grease performance [9 and 17]. The use of sodium silicate matrix which has a higher thermal conductivity [7] has a large influence on thermal resistance of thermal grease. In any fill composition, sodium silicate and zinc oxide based thermal grease always outperform silicon and metal-based thermal greases. The ability to deliver high heat from sodium silicate causes the heat generated by the CPU to flow more smoothly into the heat sink so that it did not accumulate much on the CPU surface. Compared to TGP, sodium silicate matrix composites and zinc oxide fillers as thermal grease have much lower thermal resistance. Another thing that can be identified is that the mass filler fraction has a good influence on the thermal resistance value of thermal grease with sodium silicate matrix and zinc oxide filler. For the filler mass fraction range from 0.18 to 0.20, the more filler contained in thermal grease, the lower the thermal resistance. This can be caused that thermal grease containing more fillers gets the effect of pump-out and dry-out effects [12] that are smaller than thermal grease which contains less filler. A greater number of fillers will slow down the movement of the matrix so that not many matrices come out of the interface.

The thermal resistance of all thermal greases has a positive tendency over time. This is considered as bad condition as the thermal resistance of a TIM must be as low as possible [9]. Thermal greases which viscosity decreases as a result of temperature rise will get the effect of pump-out. Thermal grease will be forced to migrate from the interface and can cause contamination. Aside from the pump-out effect, another thermal effect is also called a dry-out. This effect generally occurs in high temperature operations. At high temperature operation, it is possible to separate the thermal grease matrix and filler. The separation and loss of matrices can result in the poor wetting ability of thermal grease so that it can increase its thermal resistance [8]. Thermal grease will experience a decrease in viscosity and increase in wetting ability if the temperature rises, which is an advantage because it can reduce thermal resistance [8]. Based on this, theoretically, it can be estimated that the longer the running time then the thermal resistance of thermal grease should also decrease or at least remain. Figure 1 shows the opposite, thermal resistance of thermal grease continues to increase over time. This can occur as the dry-out effect takes place simultaneously with the pump-out effect. Migration from

thermal grease out of the interface is also followed by separation of the matrix and thermal grease fillers. As a result, the number of matrices left on the interface is increasingly not enough to wet the interface surface or in other words the thermal grease wetting ability decreases. It can be seen that the TGP thermal resistance appears to be more stable when compared to 1-3. The increase in thermal resistance of TGP was only 9.17% of its initial value, namely the value at 1 minute of testing, while for the 1-3 footage, the increase was 111.60%, 87.805 and 34.06% respectively. Based on the previous explanation, it can be seen that the effect of pump-out and dry-out that occurred in the thermal grease made from sodium silicate and zinc oxide resulted in a significant increase in thermal resistance. The migration that occurs in sodium silicate and zinc oxide based thermal grease is proven by figure 2.

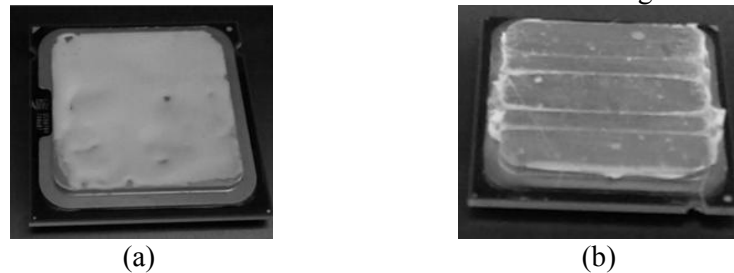


Figure 2. Migration patterns on sodium silicate and zinc oxide based thermal greases due to temperature changes. (a) Thermal grease migration before testing. (b) Thermal grease migration after testing for 120 minutes.

From figure 2, it can be identified that thermal grease moves from the CPU surface to the edge of the CPU. The effect of pump-out and dry-out that occurs due to changes in CPU temperature greatly affects the thermal resistance value of sodium silicate and zinc oxide based thermal greases, while this effect does not appear to occur in silicon and metal based thermal greases. Following is the migration pattern on silicon and metal based thermal grease shown in figure 3.

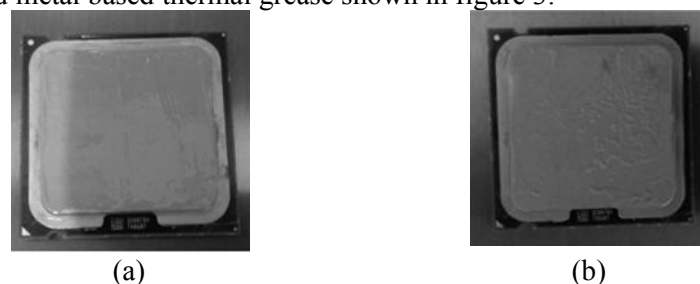


Figure 3. Migration patterns on silicon and metals based thermal greases due to temperature changes. (a) Thermal grease migration before testing. (b) Thermal grease migration after testing for 120 minutes.

The pump-out and dry-out effect on the silicon and metal based thermal grease do not appear to occur at all. This situation can be due to the far greater viscosity of silicon than sodium silicate [7], so that with an increase in temperature, silicon-based thermal grease does not become dilute enough to flow out of the interface. This situation is also evidenced by figure 3 which shows very small migration of silicon-based thermal grease. Based on this condition, the stability of thermal resistance from TGP can be explained.

4. Conclusion

Based on the results of the research that has been carried out, it shows that sodium silicate matrix composites and zinc oxide fillers as thermal grease have lower thermal resistance than the market thermal grease which is silicon matrix and metal filled thermal grease. The best thermal resistance of the produced thermal grease was obtained from a mixture of 84 wt% sodium silicate and 16 wt% zinc oxide with a value of 0.0123°C/W, while thermal grease with a mixture of 80 wt% sodium silicate and

20 wt% zinc oxide had the best thermal resistance stability which almost equaled the stability of silicon and metal based thermal grease with only 34% change of its initial value.

5. References

- [1] Moore A. L and Shi L 2014 *Materials Today*. **17** 163–174.
- [2] Ravikumar S, Subash P, Harish R and Sivaji T 2017 *Materials Sci. and Eng.* **197** 1–6
- [3] Lin C, and Chung D D L *Carbon* **47** 295–305
- [4] Greenwood J and Williamson BPP 1966 *Proc. of the Royal Society of London* (London) vol 295 (London:The Royal Society) p 300–19
- [5] Razeeb K M, and Dalton E 2011 *Adv. in Nanocomposites-Synth., Charact. and Indust. Appl.* **30** 685-706
- [6] Cui T, Li Q, Xuan Y and Zhang P 2015 *Microelectronics Reliability* **55** 2569–74
- [7] Chung D D L 2001 *Appl. Thermal Eng.* **21** 1593–1605
- [8] Viswanath R, Watwe A, Wakharkar V and Lebonheur V 2000 *Intel Technology J. Q3* **4** 1–16
- [9] Sarvar F, Wahlley D C and Conway P P 2006 Proc. Conf. Papers and Present. Mech., Elect. and Manufact. Eng. (Dresden) vol 2 (IEEE/Dresden) p 1292–1302
- [10] Maheshwari S U, Pillai B C, Govindan K, Raja M, Raja A, Pravin M B S and Kumar S V 2017 *Proc. Int. Conf. on Adv. in Functional Materials* (Los Angeles) vol 1 (Los Angeles/ ISSN) p 39–46
- [11] Xu Y, Luo X, and Chung, D D L 2000 *J. of Elect. Packaging* **122** 128–31
- [12] Blazej D 2003 *J Elect. Cooling* **9** 14–20
- [13] Hale B 2018 The Best Thermal Paste in 2018: The 7 Best Thermal Compounds Reviewed (Thermal Interface Materials *Online*) Accessed 12 Maret 2018 from <https://techguidedcom/best-thermal-paste/>
- [14] Sim L C, Ramanan S R, Ismail H, Seetharamu K N and Goh T J 2005 *Thermochimica Acta* **430** 155–165
- [15] Hao M, Huang Z, Saviers K R, Xiong G, Hodson S L and Fisher T S 2017 *Int. J. of Heat and Mass Transfer* **106** 1287–93
- [16] Zhou N 2005 A Thermal Interface Material Characterization Test Apparatus *Master of Science Project* SJSU Mech. Eng. Dept. San José State University
- [17] Prasher Ravi 2006 Proc. Conf. Papers and Present. Mech., Elect. and Manufact. Eng. (Dresden) vol 94 (IEEE/Dresden) p 1571-86



2nd FIRST 2018 INTERNATIONAL CONFERENCE
FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY (FIRST)
OCTOBER 30-31, 2018

CERTIFICATE OF APPRECIATION

is awarded to

ABU HASAN

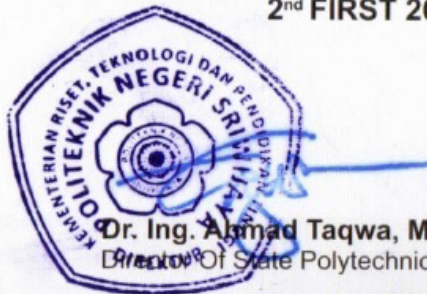
in recognition & appreciation of the contribution as

CORRESPONDING AUTHOR

In

2nd FIRST 2018 Coaching Clinic & Research Writing Workshop

Held On October 31, 2018
HORISON ULTIMA HOTEL
Palembang, Indonesia



Dr. Ing. Ahmad Taqwa, M.T.
Director Of State Polytechnic Of Sriwijaya



Dr. Ir. Rusdianasari, M.Si.
Chair Of 2nd FIRST 2018

Organized By :



Collaborate With :



الجامعة الإسلامية العالمية ماليزيا
INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA
بونسو وسنڠ سنڠلارا انتارا نغسا بلانسنا



University of Cologne



University of Sunderland