



CONFERENCE PROGRAMS AND ABSTRACT

**The 3rd FIRST 2019 INTERNATIONAL CONFERENCE
FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY
OCTOBER 09-10, 2019
*Palembang, Province of South Sumatera
Indonesia***

Organized by :



Collaborate With :





FOREWORD FROM GENERAL CHAIR 3rd FIRST 2019 INTERNATIONAL CONFERENCE

Welcome to 3rd FIRST 2019, it is with a great pleasure that we extend our warm welcome to all the participants of the 3rd FIRST 2019 International Conference, Forum in Research, Science, and Technology. This conference is held for third 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, while the second conference was held on October 30-31, 2019 at Horison Ultima Hotel Palembang.

It is a good collaboration of State Polytechnic of Sriwijaya, Management and Science University (MSU), and National Chin-Yi University of Technology (NCUT). **To facilitate the researchers and the community server, the 3rd FIRST 2019 is conjugated with Seminar Nasional Aplikasi Teknologi untuk Masyarakat 2019 (SNAPTEKMAS), “Penerapan Perkembangan Teknologi untuk Meningkatkan Nilai Ekonomi Masyarakat”.**

The 3rd FIRST 2019 International Conference has attracted 109 participants from 6 countries, Malaysia, Japan, Taiwan, and Brunei Darussalam. The 3rd FIRST 2019 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). For the 3rd FIRST 2019, 232 peer reviewed paper by reviewers drawn from the scientific committee, external reviewers and editorial board, however only 192 papers were selected. For SNAPTEMAS 2019, there are only 59 papers that are accepted.

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.

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

Assoc. Prof. Dr. Rita Martini, SE., M.Si., Ak., CA
General Chair of 3rd FIRST 2019



FOREWORD FROM DIRECTOR OF STATE POLYTECHNIC OF SRIWIJAYA

Dear all participants, welcome to Palembang, South Sumatera, Indonesia. It is my great pleasure to have all of you who have come from many parts of the world, to join the 3rd FIRST 2019 International Conference, Forum in Research, Science, and Technology. This conference is initiated and organized by State Polytechnic of Sriwijaya in collaboration with Management and Science University (MSU), and National Chin-Yi University of Technology (NCUT).

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 3rd FIRST 2019 International Conference, Forum in Research, Science, and Technology 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. Nurul Taufiqurrahman, Lembaga Ilmu Pengetahuan Indonesia (LIPI), Indonesia
Prof. Yasushi Kiyoki, Keio University, Japan
Prof. Drs. Tjiptohadi Sawarjuwono M.Ec., Ph.D., Ak., Universitas Airlangga, Indonesia
Prof. Dr. Rahmat Budiarto, Al Baha University, Saudi Arabia
Assoc. Prof. Dr. Augustus E. Osseo-Asare University of Sunderland, United Kingdom
Prof. Dr. Werner Rammense, Cologne University, Germany
Prof. Eddy Yusuf, Ph.D., Management Science University, Malaysia
Prof. Win-jet Luo, Ph.D., National Chin-Yi University of Technology, Taiwan

Steering Committee

Prof. Muhammad Nizam, Ph.D, Universitas Sebelas Maret, Indonesia
Prof. Dr. Mohammad Yeakub Ali, International Islamic University Malaysia
Dr.drh R. Wisnu Nurcahyo, DVM., Universitas Gadjah Mada, Indonesia
Dr. Untung Santoso, M.Si., Universitas Muhammadiyah Malang, Indonesia
Assoc. Prof. Ahmad Hoirul Basori, King Abdulaziz University, Saudi Arabia
Prof. Dr. Ir. Siti Nurmaini, Universitas Sriwijaya, Indonesia
Prof Aldes Lesbani S.Si,M.Si,Ph.D, Universitas Sriwijaya, Indonesia
Yu-Lieh Wu, Ph.D., National Chin-Yi University of Technology, Taiwan
Dr. Zuhadi Zakaria, Politeknik Seberang Perai, Malaysia
Dr. Ing. Ahmad Taqwa, M.T, Politeknik Negeri Sriwijaya, Indonesia
Dr. RD. Kusumanto, MM, Politeknik Negeri Sriwijaya, Indonesia
Dr.Ir.Rusdianasari, M.Si, Politeknik Negeri Sriwijaya, Indonesia
Irsyadi Yani, ST., M.Eng. PhD, Universitas Sriwijaya, Indonesia
Dr. Yohandri Bow, M.Si, Politeknik Negeri Sriwijaya, Indonesia
Dr. Yuli Yetri, M.Si, Politeknik Negeri Padang
Dr. Marieska Verawaty, M.Si., Universitas Sriwijaya, Indonesia
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.Rita Martini, SE.,M.Si.,Ak.,CA, 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
Ade Silvia HAndayani, S.T, M.T., Politeknik Negeri Sriwijaya, Indonesia

Publication Chairs

Deris Stiawan, M,Kom, PhD., Universitas Sriwijaya, Indonesia
Desloehal Djumrianti, S.E., MIS., PhD, Politeknik Negeri Sriwijaya, Indonesia
Nyayu Latifah Husni, 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
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
Ir. Irwin Bizzy, M.T., Universitas Sriwijaya, Indonesia
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
Dr. Rosmalinda Permatasari ST MT, Universitas Tridinanti Palembang, Indonesia
Erliza Yuniarti, S.T., M.Eng, Universitas Muhammadiyah Palembang, Indonesia
M. Miftahul Amin, S.Kom., M.Eng., Politeknik Negeri Sriwijaya, Indonesia
Leni Novianti, M.Kom., Politeknik Negeri Sriwijaya, Indonesia
Firdaus, S.T., M.Kom., Universitas Sriwijaya, Indonesia
Syarifah Putri Rafflessia. S.Kom. M.T., Universitas Sriwijaya, Indonesia
Ervi Cofriyanti, S.Si, M.T.I, Politeknik Negeri Sriwijaya, Indonesia

Local Chairs

Firdaus, S.T., M.T., Politeknik Negeri Sriwijaya, Indonesia
Aladin SE, M.Si.,Ak ,CA, Politeknik Negeri Sriwijaya, Indonesia
Dr. Evada Dewata,S.E., M.Si., Ak, CA, Politeknik Negeri Sriwijaya, Indonesia
Dr. M. Syahirman Yusri., M.S., Politeknik Negeri Sriwijaya, Indonesia
Dr. Ir. Aida Syarif, M.T., 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
Pridson Mandiangan, S.E., M.M., Politeknik Negeri Sriwijaya, Indonesia
Bainil Yulina, S.E., M. Si., Politeknik Negeri Sriwijaya, Indonesia
Adewasti, S.T., M.Kom., Politeknik Negeri Sriwijaya, Indonesia
Hairul, S.T., M.T.,Politeknik Negeri Sriwijaya, Indonesia
Eka Susanti, S.T., M.Kom., Politeknik Negeri Sriwijaya, Indonesia



Yasushi Kiyoki, Professor, Ph.D

Professor of Faculty of Environment and Information Studies and Graduate School of Media and Governance, KEIO University,

Program Chair of “Global Environmental System Leader Program (KEIO GESL): PhD Leading Program in Ministry of Education, Japan,

Former Dean of Graduate School of Media and Governance, KEIO University, 2015 to 2017,

Former President of Database Society of Japan (DBSJ), 2016-2018,

IPSJ(Information Society of Japan) Fellow, 2004,

5D-World Map System Creator : Global Environmental Database System, currently utilized in SDG-14, United Nations-ESCAP:

https://sdghelpdesk.unescap.org/toolboxes?title=&field_sdgs_target_id=All&page=3

(<https://sdghelpdesk.unescap.org/toolboxes>)

Address:

KEIO University, JAPAN

Address: 5322 Endo, Fujisawa, Kanagawa, Japan, 252-0882

TEL: +81-466-47-5111

EMAIL: kiyoki@sfc.keio.ac.jp

<http://gesl.sfc.keio.ac.jp/>

<http://www.mdbl.sfc.keio.ac.jp>



Prof. Nurul Taufiqu Rochman, M. Eng, Ph. D

Work Experience

1. Chariman of Nano Center Indonesia (2012-Now)
2. Head of Material and Metallurgical Research Center LIPI (2019-Now)
3. Research Proffesor, Physics Research Center LIPI (2017-Now)
4. The National Research Council (2016-Now)
5. DKI Jakarta Regional Research Council (2018-Now)
6. IABIE Expert Board (2016-Now)
7. Nano Society Board of Trustees of Indonesia
8. Founder and Chairman of Nanotech lobal Innovation Pte. Ltd. (Singapore)

School Attended

KAGOSHIMA UNIVERSITY, JAPAN
Bachelor of Engineering in Material Science, 1995
Master of Engineering in Material Science, 1997
Doctor of Engineering in Material Science and Nanotechnology, 2000
BOGOR AGRICULTURAL UNIVERSITY, INDONESIA
Doctorate in Business and Management, 2011

Intellectual Property

Rochman N.T, K.Yamada, K. Hamaishi, H. Sueyoshi, Metoda Eliminasi Pb dari Paduan Tembaga, Japanese Patent, No Granted 2005-8970 (P2005-8970A); 2005 January.
Rochman N.T, Agus Sukarto Wismogroho. Learning Method of Atomic Motion Phenomena and Crystal Structure Formation of a Material. Patent No. P00200600346; 2006 June 15.
Rochman N.T, Agus Sukarto Wismogroho, Wahyu Bambang Widayatno, Andi Wahyu Indrayana, Nur Hendrasto. Methods and Tools for Producing Zinc Oxide Nanoparticles (ZnO) with Electric Plasma Arc Technology. Patent No. P00201000638; 2010 October 12.



Prof. Tjiptohadi Sawarjuwono, M.Ec., Ph. D., Ak.

Name : Tjiptohadi Sawarjuwono, Prof, M.Ec, Ph.D, CPA, CA Occupation : Lecturer at Airlangga University since 1981, rank : IV e Date and Place of Birth : Bandung, 7 September 1953.

Main Activities:

1. Teaching:

- a. Behavioural Accounting for Bachelor and Master Programmes.
- b. Philosophy of Accounting for Bachelor dan Doctorate programmes.
- c. Qualitative Research Methodology for Bachelor and Master Programmes (Accounting and Islamic Study).
- d. Professional Ethics for Bachelor and Master Programmes.

2. Supervising Students at all level of programmes

Other activities

1. Vice Rector for Academic and Student Affairs, Universitas Internasional Semen Indonesia (UISI) since 2015.
2. Accounting supervisor at Mosque Al Falah, the biggest mosque in Surabaya, since 2014.
3. Partner of Accounting Firm Chatim, Atjeng, and Sugeng (CAS), Surabaya, since 2005.

Other experiences

1. Indonesia Accounting Association (IAI), member since 1981. Became the Leader of IAI for 3 periods from 2005 till 2017.
2. Becomes the speaker on various seminars and workshops with topic on a qualitative research method and an Islamic Accounting.
3. Became a leader of Islamic Accounting Forum, Academic Accounting Association. □
4. Editor for several Accounting Journals in Indonesia.



Prof. Win-Jet Luo

Prof. Win-Jet Luo received his master degree in Engineering in 1994 and got his ph.d degree in Engineering in 2000 from National Chen Kung University (NCKU), Taiwan. After getting his ph.d degree, prof. Luo had been teaching in the program of Refrigeration, Air-conditioning and Energy Engineering and program of Electrical Engineering. He was promoted to professor position in 2008. At present, prof. Luo is teaching in Graduate Institute of Precision Manufacturing of National Chin Yi University of Technology (NCUT). Research interests of prof. Luo focus on the computational fluid dynamics, micro electromechanical Systems, ventilation, energy saving, fuel cells and micro-sensors. Prof. Luo has more than 70 journal papers published in the famous international journals and serves the reviewers of the journals. In 2012, 2014 and 2018, he got the engineering paper awards from Taiwan Society of Refrigerating and Air-Conditioning Engineers (TSHRAE). From 2013 to 2019, prof. Luo was nominated as dean of engineering college of NCUT. From 2014 to 2017, he was nominated as the president of TSHRAE and the consultant of council of heat pump engineering in Taiwan as well. He is also a member of Higher Education Evaluation and Accreditation Council of Taiwan. From 2014 to 2019, he has being gotten the honors of distinguished professor of NCUT as well.



Dr. med. vet. Wisnu Nurcahyo, DVM

Professional background:

1. Lecturer at Department of Parasitology, Faculty of Veterinary Medicine, Universitas Gadjah Mada since 1990
2. Director of Graduate Program of Veterinary Science UGM 2012-2016.
3. Chairman of Indonesian Society of Veterinary Parasitology since 2014
4. National Coordinator of Community Service in Directorate of Research and Community Services, Indonesian Ministry of Research, Technology and Higher Education since 2012.

Office : Department of Parasitology, FVM UGM, Yogyakarta

Jl. Fauna 2, Yogyakarta 55281

Phone : 0062274 560862 Facs : 0062274 560861

Mobile : 0062-81325257887

Email: wisnu-nc@ugm.ac.id, wisnunurcahyo@yahoo.com

Educational background:

1. Training on Tropical Veterinary Parasitology, Institut fuer Parasitologie und Tropische Krankheit, Veterinarmedizinische Fakultae der Freien Universitaet (FU) Standort Mitte, Berlin, Germany. 1993
2. PhD in Molecular Parasitology (Isolation and characterization of recombinant Variance Surface Glycoprotein Trypanosoma congolence in Escherichia coli), Freie Universitaet (FU) Berlin, Germany(DAAD Scholarship), 1993-1998
3. Postdoctoral Research Fellowship, Institut fuer Molekularparasitologie der Humboldt Universitaet zu Berlin (HU) Berlin, Germany. 2004

Research interest

Parasitology and Wildlife Conservation



Associate Professor Dr Intan Z. Mat Darus

Associate Professor Dr Intan Z. Mat Darus is an Associate Professor of School of Mechanical Engineering and Associate Chair of Academic Development in the Office of Undergraduate Studies, Universiti Teknologi Malaysia.

Associate Professor Dr Intan Z. Mat Darus was born in Malaysia, in September 16th, 1976. She received her First Class B.Eng. (Hons.) degree in Mechanical Engineering from the University of Wales College Cardiff, Wales, United Kingdom in 1998 and later her Ph.D. in Automatic Control and Systems Engineering from the University of Sheffield, United Kingdom in 2004. Her current research interests are instrumentation measurement and control, modelling and simulation of dynamical system, modelling and control of thermal energy, systems and application, soft computing techniques, evolutionary algorithms, artificial intelligent, robotic and automation system. She is currently the International editorial board member of the Journal of Low Frequency Noise, Vibration and Active Control, Journal of Artificial Intelligence Research (AIR), Jurnal Mekanikal and Journal of Institute Engineer Malaysia (IEM). Associate Professor Dr Intan Z. Mat Darus has published over 140 journal and conference papers and funded over 30 research and industrial collaboration and consultancy projects in the area of robotic and automation, thermal energy, artificial intelligent, evolutionary algorithm, instrumentation, measurement and control. She gained several research and service awards including from the Ministry of Science and Technology and Innovation Malaysia and several research awards from Seoul International Invention Fair. She has supervised over 60 postgraduate research students since 2004. Associate Professor Dr Intan Z. Mat Darus had 20 years of program development and teaching experience in the undergraduate and postgraduate studies at the Universiti Teknologi Malaysia since 1999.

RUNDOWN

3rd FIRST 2019 INTERNATIONAL CONFERENCE (FORUM IN RESEARCH SCIENCE AND TECHNOLOGY) SNAPTEKMAS (Seminar Nasional Aplikasi Teknologi pada Masyarakat) 2019

**The Excelton Hotel Palembang, South Sumatera, Indonesia
Wednesday-Thursday, October 9-10, 2019**

Wednesday, October 9, 2019					
The Excelton Hotel Palembang, Diamante Room (M Floor)					
No.	Session	Person in Charge	Time Allotment	Liaison Officer	
1.	Registration	Event Section Committee	07.00 – 08.00	M.Miftakhul Amin, S.Kom., M.Eng	
2.	The Opening Ceremony		08.00 – 08.35		
3.	Do'a				
4.	Tari Tanggai				
5.	Indonesian National Anthem				
6.	Chair Report Speech				
7.	Speech and Opening Remarks by Director of State Polytechnic of Sriwijaya				
8.	Souvenirs Gift, Group Photos				
9.	Coffee Break				
PLENARY SESSION					
No.	Keynote Speaker	Affiliation	Time Allotment	Moderator	Liaison Officer
1.	Prof. Yasushi Kiyoki, Ph.D	KEIO University, Japan	09.00 – 09.30	Tiur Simanjuntak, M.Pd./ Tommy E Sutarto, Ph.D	Dr. Eng. Herlambang, M.Kom
2.	Prof. Win-Jet Luo	National Chin Yi University of Technology (NCUT), Taiwan	09.30 – 10.00		
3.	Assoc. Prof. Ts. Dr. Intan Zaurah Mat Darus	Universiti Teknologi Malaysia	10.00 – 10.30		
4.	Prof. Dr. Nurul Taufiqu Rochman, M.Eng, Ph.D	LIPI	10.30 – 11.00	Dr. Markoni Badri, S.E., M.B.A.	M.Miftakhul Amin, S.Kom., M.Eng
5.	Prof. Drs. Tjiptohadi Sawarjuwono M.Ec., Ph.D., Ak.	Universitas Airlangga, Indonesia	11.00 – 11.30		
6.	Dr. R. Wisnu Nurcahyo, DVM	Universitas Gadjah Mada, Indonesia	11.30 – 12.00		

Break, Sholat Dzuhur, Lunch		12.00 – 13.00			
PARALEL SESSION					
No.	Theme	Room	Time	Moderator	Articles
1.	TRACK 1 (Engineering and Science)	ROOM 1 Electra 3 (2nd Floor)	13.00 – 16.12	Nyayu Latifah Husni, S.T., M.T./ A. M. Shiddiq Yunus, S.T., M. Eng., Ph.d	23
2.	TRACK 1 (Engineering and Science)	ROOM 2 Electra 4 (2nd Floor)	13.00 – 16.12	Dr. Eng. Tresna Dewi, M.Eng/Fatahul Arifin, Ph.D.	23
3.	TRACK 1 (Engineering and Science)	ROOM 3 Electra 5 (2nd Floor)	13.00 – 16.12	Ir. Jaksen, M.Si /Dr. Beni Hidayat	23
4.	TRACK 1 (Engineering and Science)	ROOM 4 Electra 6 (2nd Floor) /SESSION 1	13.00 – 14.36	M.Miftakhul Amin, S.Kom., M.Eng/Agus Subrianto,M.Eng.	12
		ROOM 4 Electra 6 (2nd Floor) /SESSION 2	14.44 – 16.20	M.Miftakhul Amin, S.Kom., M.Eng/Agus Subrianto,M.Eng.	11
5.	TRACK 2 (Computer Science, Computer Engineering, Information System, Informatics Management)	ROOM 5 Electra 1 (2nd Floor)	13.00 – 16.12	Herlambang, M. Kom, Ph.d./R Passarella, M.Eng	23
6.	TRACK 2 (Computer Science, Computer Engineering, Information System, Informatics Management)	ROOM 6 Electra 2 (2nd Floor)	13.00 – 16.12	Ervi Cofriyanti, M.TI / Ozkar Firdausi Hamzah, S.T., M.T., M. Sc	23
7.	TRACK 3 (Social Science)	ROOM 7 Diamante 1 (M Floor)	13.08 – 15.48	Doeslohal Djumrianti, S.E.MIS., Ph.D/Dr. Sari Lestari ZR	20
8.	TRACK 3 (Social Science)	ROOM 8 Diamante 2 (M Floor)	13.00 – 15.56	Dr. Welly/ Heri Setiawan, MM	21
9.	SNAPTEKMAS 1	ROOM 9 Diamante 3 (M Floor)	13.00 – 15.40	Pridson Mandiangan, S.E., M.M M.Si./ Marieska Verawaty, Ph.D.	19

10	SNAPTEKMAS 2	ROOM 10 Diamante 4 (M Floor)	13.00 – 15.48	Dr. Rusdianasari/ Dr. Febrianty	20
11	SNAPTEKMAS 2	ROOM 11 Diamante 5 (M Floor)	13.00 – 15.48	Dr. Indri Ariyanti/ Ade Silvia H, ST, MT	20
12	TRACK 1, TRACK 2 (Engineering and Computer Science)	ROOM 12 Diamante 6 (M Floor)	13.00 – 14.36	HettyMeileni, S.Kom, M.TI/ Alan Novi Tompunu, S.T., M.T.	12
CLOSSING SESSION					
Event			Time	Room	
<ul style="list-style-type: none"> - Closing Ceremony - Announcement of: <ul style="list-style-type: none"> 1. Best Paper FIRST IC 2019 2. Best Paper SNAPTEKMAS 2019 3. Best Presenter FIRST IC 2019 4. Best Presenter SNAPTEKMAS 2019 - Door Prices 			16.30– 17.30	Diamante Ball Room	

Thursday, October 10, 2019
MUSI AND CITY TOUR



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918

Theme : TRACK 1 (Electrical Engineering)
Room : ROOM 1 (Electra 3, 2nd Floor)
Moderator : Nyayu Latifah Husni, S.T., M.T./A. M. Shiddiq Yunus, S.T., M. Eng., Ph.D
Time : 13.00-16.12 WIB
Articles : 23

ID	Time	Authors	Title	Affiliation
1585	KEYNOTE SPEAKER	Yasushi Kiyoki	A Global Knowledge Sharing and Semantic Computing System with 5-Dimensional World-Map for Natural and Social Environment-Analysis and Visualization	Keio University
1329	13.00 – 13.08	B Alfaresi, Z Nawawi, R F Malik, K Anwar	5G Channel Model for 28 GHz frequency in Palembang	Universitas Sriwijaya
1344	13.08 – 13.16	Suzan Zefi, Eka Susanti, R.A Halimahtussa'diyah, Sholihin	Wireless Sensor Network Data Communication and Information system to Regulate Water Volume and Turbine Rotation	Polsri
1504	13.16 – 13.24	Yurni Oktarina, Tresna Dewi, Pola Risma, Muhammad Nawawi	Tomato Harvesting Arm Robot Manipulator; a Pilot Project	Polsri
1461	13.24 – 13.32	Armin Sofijan, Zainuddin Nawawi, Bakhti Yudho, Rimant Sipahutar, Irwin Bizzy	Performance Evaluation Solar Charge Controller on Solar Power System Home-Based SPV Amorphous 80 Watt-peak	Universitas Sriwijaya
1463	13.32 – 13.40	Sopian Soim, Suroso, Ade Silvia Handayani, Ahmad Taqwa, Nur Shadrina	The Implementation Of YATEBTS Based GSM Using Raspberry Pi	Polsri
1453	13.40 – 13.48	Brendy Chandra Supian Atmodjo and Rinaldy Dalimi	Optimization of Own Electricity Usage with Electricity Supply from Solar Cells at Darajat Geothermal Power Plant	Universitas Indonesia
1588	13.48 – 13.56	Yeni Irdyanti, Rd. Kusumanto, Masayu Anisah, Niksen Alfarizal, Zarmariesyah Erman	Ultrasonic Sensor Application As A Performance Enhancement Of Robot Two Wheels	Polsri
1535	13.56 – 14.04	Nofiansah, M. Noer, Nurhaida, M. Hafidz Aulia	Operation 3 Phase Induction Motor 1 Kw Star Delta System Using Hp (Smart Phone)	Polsri
1487	14.04 – 14.12	Lin Prasetyani, Bayu Ramadhan, Tresna Dewi, William Sarfat	PLC Omron CJ1M CPU-21 Control Modification for Drill Oil Hole Machine in an Automotive Company	Politeknik Manufaktur Astra
1546	14.12 – 14.20	Yessi Marniati, Andri Suyadi, Herman Yani, Sutan Marsus	Characteristics Of Battery Use In Electric Car	Polsri
1570	14.20 – 14.28	Sabilal Rasyad, Evelina Evelina, Amperawan Amperawan, Dewi Permata Sari, Nyayu Latifah Husni	Learning Module Of Analog Electronics Practice	Polsri



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
 phone +62711 353414 Fax: +62711 355918

1450	14.28 – 14.36	Resti, Nasution, Burlian, Yani	Different metric distances on the k-means method in building a cans waste classification system using the CMYK color model	Universitas Sriwijaya
1447	14.36 – 14.44	Zarkasi	Implementation of Facial Feature Extraction Using Viola-Jones Method for Mobile Robot System	Universitas Sriwijaya
1705	14.44 – 14.52	Rumiasih, Carlos R. Sitompul, Anton Firmansyah, Indah Susanti	Effect Of Load On BLCD Motor	Polsri
1468	14.52– 15.00	D A Pratama, N L Husni, E Prihatini, S Muslimin	Implementation of DSK TMS320C6416T Module in Designed of Sound Detection	Polsri
1606	15.00 – 15.08	Ahmad Taqwa, Tresna Dewi, RD Kusumanto, Carlos R Sitompul, Rusdianasari	Automatic Cooling of a PV System to Overcome Overheated PV Surface in Palembang	Polsri
	15.08 – 15.16	BREAK		
1710	15.16 – 15.24	Hairul, Markori, Indrawasih dan Sudirman Yahya	Analysis Of Performance Test And Consumption Of BLDC 350 W Motor Power To Mechanical Vibration With Variation Of Speed And Load Variation	Polsri
1610	15.24 – 15.32	Zainuddin Idris, M. Yunus, Siswandi, Bambang Guntoro	The Influence Of Change Of An Angle Of Illuminance On Solar Power Generating Capacity 30 Watts In Laboratory Of Electrical Engineering Polytechnic Of Sriwijaya	Polsri
1629	15.32 – 15.40	Yohandri Bow, Adi Syakdani, Muhammad Taufik, Rusdianasari	The Effect of Drying Airflow Rate on H2O Mass Evaporated of Banana Chips Drying using Photovoltaic Solar Panels	Polsri
1711	15.40– 15.48	Benny Junianto, Tresna Dewi, Carlos Sitompul	Development and Feasibility Analysis of Floating Solar Panel Application in Palembang, South Sumatra	Polsri
1533	15.48 – 15.56	A. M. Shiddiq Yunus, Makmur Saini, Sri Suwasti, dan Purwito	Effects of Grid Frequency Drop on the Dynamic Performance of Full Converter Wind Turbine Generator	Politeknik Ujung Pandang
1767	15.56 – 16.04	Nyayu Latifah Husni, Dampito, Abdurrahman, Evelina, Ade Silvia Handayani, Sabilal Rasyad, Adella Rialita	Modified Design for Water Metering System	Polsri
1349	16.04– 16.12	Ade Silvia Handayani, Jefri alkausar, Sarjana Sarjana, Nyayu Latifah Husni, Siti Nurmaini, Irsyadi Yani	Implementation Of Fuzzy Logic Type-2 On Mobile Robot Navigation System	Polsri



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Sriwijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
 phone +62711 353414 Fax: +62711 355918

Theme : TRACK 1 (Mechanical and Energy Engineering)
 Room : ROOM 2 (Electra 4, 2nd Floor)
 Moderator : Dr. Eng. Tresna Dewi, M.Eng/Fatahul Arifin, Ph.D
 Time : 13.00 - 16.12 WIB
 Articles : 23

ID	Time	Authors	Title	Affiliation
1637	INVITED SPEAKER	Intan Z. Mat Darus	Intelligent Controller for Flexible Robot Arm	Universiti Teknologi Malaysia
1335	13.00 – 13.08	Hasan Basri, A. Syahrom, Amir Putra Md Saad, A. T. Prakoso, D. Wicaksono, M. I. Amarullah, Tri Satya Ramadhoni	The Analysis of Wear on Artificial Hip Joint with Dimple on Femoral Surface	Universitas Sriwijaya
1350	13.08 – 13.16	Fatahul Arifin, Min-Wen Wang, Guo Wei	Optimal Design of Plasticizing Screw Using Artificial Intelligent Approach	University of Science and Technology, Kaohsiung Taiwan
1336	13.16 – 13.24	Akbar Teguh Prakoso, Ardiyansyah Syahrom, Amir Putra Md Saad, Abdul Hadi Abdul Wahab, Achmad Rendiko Ichsan, Hasan Basri	Mechanical Degredation Model of Porous Fe Scaffolds: Simulation Approach	Universitas Sriwijaya
1437	13.24 – 13.32	Darmawi, Riman Sipahutar, Qomarul Hadi	Scoopy Blade For Low Current River Waterwheel Supporting The Energy Procurement In The Countryside Of Indonesia (Part II)”	Universitas Sriwijaya
1443	13.32 – 13.40	Indra Maulana, Dicky Seprianto, Yossy Yudhianto, Muhammad Najib, Muhamad Azwar	SELT Design as a source of renewable electricity using the Flywheel Generator and Photodiode Sensor	Polsri
1460	13.40 – 13.48	Riman Sipahutar, Diah Kusuma Pratiwi, Darmawi Bayin, Irwin Bizzy, Baiti Hidayati	Analysis of Upgrading Process of South Sumatera Low Rank Coal	Universitas Sriwijaya
1664	13.48 – 13.56	Romli, D Seprianto, DP Putra, and M Rasid	The Effect of Parameters on the Process of Making Objects with Rapid Digital Prototyping Light Processing Technology on the Bending Stress	Polsri
1665	13.56 – 14.04	D Seprianto I, R Sugiantoro, Sproni, and Yahya	The Effect of Rectangular Parallel Key Manufacturing Process Parameters Made with Stereolithography DLP 3D Printer Technology Against Impact Strength	Polsri
1469	14.04 – 14.12	Ismail T, Zainal A, Fusito HY, Rahmad H, Ahmad K, Geby P	Simulation of the Effect of Cutting Angle in Lathe Process on Distribution of Cutting Temperature	Universitas Sriwijaya
1470	14.12 – 14.20	Ismail T, Amrifan S M, Riman S, Irsyadi Y, Sandro O, Fatiandari A	Conduction Heat Rate Analysis of Tool in Titanium Turning Process	Universitas Sriwijaya
1503	14.20 – 14.28	Kun-Ying Li, Win-Jet Luo, Shih-Jie Wei , and Yan-sin Liao	Cooling Channel Design for a Built-in Spindle of a Machine Tool	National Chin-Yi University of Technology,



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Sriwijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
 phone +62711 353414 Fax: +62711 355918



				Taiwan
1521	14.28 – 14.36	Syahril Ardi and Rahardian Faizal Zuhdi	Design of Automatic Control Systems at Loader Output of Snap Gauge Machine in Manufacturing Industry	Politeknik Manufaktur Astra
1522	14.36 – 14.44	Syahril Ardi and Juliantito Ardianto	Design Control Systems of Marking Machine and Total Length Check Damper Assembly Based on Programmable Logic Controller	Politeknik Manufaktur Astra
1531	14.44 – 14.52	Muhammad Yanis, Amrifan Saladin Mohruni, Safian Sharif, Irsyadi Yani, muhammad Zahir	Experimental Vibration Study in Milling Thin- Walled Ti6Al4V under MQL using Coconut Oil as Cutting Fluid	Universitas Sriwijaya
1622	14.52– 15.00	Carolus Bintoro, Vicky Wuwung, Fathurrohman Nurdin	Determination Overlap Ratio On Savonius Twisted Water Turbine Using Numeca Software	Bandung Polytechnic State
1594	15.00 – 15.08	Dharma Manurung, Rinaldy Dalimi	Optimization Electricity Supply for Thousand Island Jakarta Province by Using Hybrid Photovoltaic-Wind Turbine-Diesel Generator- Crude Palm Oil (CPO) Power Plant-Battery System	Universitas Indonesia
	15.08 – 15.16	BREAK		
1607	15.16 – 15.24	Irawan Malik	Study on using Casting Simulation Software for Design and Analysis Gate and Riser in Foundry Industries	Polsri
1624	15.24 – 15.32	Tri Widagdo, Ella Sundari, Eka Satria Martomi	Application Of Vacuum Valve Technology As Afr Settings In 3500 Watt Operated By Methane Gas	Polsri
1654	15.32 – 15.40	Muhammad Rasid, S.T., MT.	Innovation Utilization Of Nitridation Method In Improving Hardness And Corrosion Resistance Of Blacksmiths Crafts	Polsri
1662	15.40– 15.48 (INVITED SPEAKER)	Win-Jet Luo, Nai-Feng Wu, Cheng-Yn Lin, Deri Suhaeji,	Performance Analysis of a Sludge Drying	National Chin-Yi University of Technology, Taichung, Taiwan
1534	15.48 – 15.56	Yan-Lin Wu, Yu-Lieh Wu, Azka Hasya Hanifan	Study on Ventilation Performance in Operating Room with Variation Ventilation Design	National Chin-Yi University of Technology, Taiwan
1761	15.56 – 16.04	Dyos Santoso, Joni Yanto, Zainal Abidin, Muhammad Irfan Dzaky	Effect of the Utilizing Savonius Machine as Auxiliary Starting Device on the Performance of Darrieus Machine	Universitas Sriwijaya
1766	16.04– 16.12	Bunyamin, Kaprawi, Dewi Puspitasari, Sugianto, Nyayu Latifah Husni	Analysis Model for Orifice Flow Meter Correction Factor in Measuring in-Pipe Natural Gas Flow based on Numerical Simulation	Universitas Sriwijaya



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918

Theme : TRACK 1 (Chemical and Energy Engineering)
Room : ROOM 3 (Electra 5, 2nd Floor)
Moderator : Ir. Jaksen, M.Si/Dr. Beni Hidayat
Time : 13.00-16.12 WIB
Articles : 23

ID	Time	Authors	Title	Affiliation
1367	13.00 – 13.08	Sajaruddin, Leila Kalsum, Zainuddin Muchtar	The Analysis Of Biogas Fermentation Time From Cow Manure On Biodigester Fixed Dome Batch Systems	Polsri
1397	13.08 – 13.16	Hong-Yi Lin, Yu-Lieh Wu, Kai-Siang Yang, Chih-Yung Tseng, Shih-kuo Wu	The Effect of Surface Modification on Heat Transfer of Heat Exchanger	Taiwan (R.O.C.)
1449	13.16 – 13.24	Ida Febriana, Aneasari M, KA Ridwan, Taufik Jauhari	Prototype of Biodiesel Processors Using Waste Oil (Study of The Effect of The Number of CaO Catalyst (Blood Shell Shells) and Reaction Time of The Biodiesel Rendemen))	Polsri
1451	13.24 – 13.32	Moeksin, Ali, Arita	Production Of Ethyl Ester With The Influence Of Electrode Type, Reaction Time And Electric Voltage From Waste Cooking Oil	Universitas Sriwijaya
1452	13.32 – 13.40	Hilwatullisan, M. Zaman, A.Husaini and Siti Chodijah	Biscuit Product Development using Moringa Oleifera Flour as an additional source of nutrition	Polsri
1465	13.40 – 13.48	Selpiana, Prahady Susmanto, Lia Cundari, Dedek Oktari, Omar Ibrahim	The Physical Characteristics of Cracked Plastic Waste	Universitas Sriwijaya
1472	13.48 – 13.56	Sahrul Effendy, Tahdid, Lety Trisnaliani, Sandy A Putra, dan Alifah R Hefyani	The Analysis of The Use Calcium Oxide from Waste Cockle Shells (Anadara Granosa) and Sodium Hydroxide Catalyst on Prototype Biodiesel Processors Using Waste Cooking Oil Reviewed on Yield of Biodiesel	Polsri
1494	13.56 – 14.04	Muhammad Yerizam, Suri Andayana, Utari Oktavia	Effect of Temperature and Starter Concentration on the Fermentation Process in Making MOCAF	Polsri
1524	14.04 – 14.12	L Cundari, M N Fakhri, M Z Rizki	Adsorption of Synthetic Dye by Betel Nuts Activated Carbon in a Fixed-bed Column, Experiments and Prediction of Breakthrough Curves	Univesitas Sriwijaya
1528	14.12 – 14.20	Rusdianasari Rusdianasari, Aida Syarif, Muhammad Yerizam, M. Syahrman Yusi, Leila Kalsum, Yohandri Bow	Effect of Catalysts on the Quality of Biodiesel from Waste Cooking Oil by Induction Heating	Polsri



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
 phone +62711 353414 Fax: +62711 355918

1539	14.20 – 14.28	Meilianti, Marta Aznury, Yuniar, Sofia, Ismy Farhan, Lidia Agustina	Characterization Of Red Beetroot Soft Jelly Candy With Guava Extract And Gel Colloid Added	Polsri
1540	14.28 – 14.36	Lety Trisnaliani, Dina Eka Pranata, Fatria, Tahdid, KA Ridwan, M. Nurizzman Alfarizi, Mangihut Pandapotan Lumbantoruan	Flow rate effect and NaOH Concentration to CO2 Reduction in Biogas Products Using Absorber	Polsri
1568	14.36 – 14.44	Selastia Yuliati, Fadarina, Mustain Zamhari, and Ibnu Hajar	Prototype Of Tray Dryer Unit For Silica Gel Drying Based On Bagasse	Polsri
1572	14.44 – 14.52	Yuniar, Martha Aznury, Sofiah, Meilianti	Modification of Starch from Yam Taro with Hydrolysis Acid As the Adhesive	Polsri
1576	14.52– 15.00	Robert Junaidi, Abu Hasan, Muhammad Yerizam, Indah Purnamasarii	The Performance of Riverse Osmosis (RO) Membrane in Producing Pure Water	Polsri
1623	15.00 – 15.08	Erwana Dewi, Aisyah Suci N, Elina M	The Concentrations of Dissolved Oxygen in Drinking Water	Polsri
	15.08 – 15.16	BREAK		
1309	15.16 – 15.24	Beni Hidayat, Udin Hasanudin, Muhamad Muslihudin, Syamsu Akmal, Siti Nurdjanah, Neti Yuliana	Growth Kinetics of Saccharomyces cerevisiae and Tape Yeast on The Cassava Pulp Fermentation	Politeknik Negeri Lampung
1318	15.24 – 15.32	Mahlinda and M. Dani Supardan	Distillation of Patchouli Oil Using Firewood and Liquefied Petroleum Gas as Fuel : Effects of Yield, Quality and Cost Analyses	Syiah Kuala University
1713	15.32 – 15.40	Leila Kalsum, Abu Hasan, Rusdianasari, A.Husaini Yohandri Bow	Evaluation of Main Parameter Process of Anaerobic Digestion of Cow Dung in Fixed Dome Biodigester on Methane Gas Quality	Polsri
1716	15.40– 15.48	Arizal Aswan, IrawanRusnadi, Fatria, Zurohaina, Rima Daniar	Re-design pyrolysis reactor prototype for the conversion of plastic waste into liquid fuel	Polsri
1313	15.48 – 15.56	Sri handayani, chandra utami wirawati, sarono sarono, dwi eva nirmagustina	Value Added Analysis Of Beef Floss With Fillers Of Papaya Fruits And Banana Blossom's	Politeknik Negeri Lampung
1319	15.56 – 16.04	Sri Handayani, Dwi Eva Nirmagustina, Muhammad Irfan Affandi ³	Marketing Efficiency Of Organic Rice In Lampung Province	Politeknik Negeri Lampung
1746	16.04– 16.12	Farida Ali, Roval Al Fiqri	Simple Design For Pyrolysis Tools For Making Liquid Smoke And Its Aplication From Rubber Shells And Seeds As Food Preserves	Universitas Sriwijaya



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918

Theme : TRACK 1 (Civil, Architecture and Geology Engineering Engineering) / SESSION 1
Room : ROOM 4 (Electra 6, 2nd Floor)
Moderator : M.Miftakhul Amin, S.Kom., M.Eng/Agus Subrianto,M.Eng.
Time : **13.00-14.36 WIB**
Articles : 12

ID	Time	Authors	Title	Affiliation
1433	13.00 – 13.08	M A Berawi, P Miraj, H Sidqi, G R Gaffara and Gunawan	Industrial Mapping In Java-Kalimantan-Nusa Tenggara Corridor	Universitas Indonesia
1434	13.08 – 13.16	Mohammed Ali Berawi, Perdana Miraj, Ega R Islamiah, Gefra R Gaffara, Gunawan	Revenue Analysis Of Port-City Conceptual Design	Universitas Indonesia
1456	13.16 – 13.24	Adhitya B B, Pataras M., and Kadarsa E	The Utilization of Plastics Waste in Flexible Pavement Hot Rolled Sheet and Asphalt Concrete Wearing Course with Marshall Immersion and Cantabro Test	Universitas Sriwijaya
1459	13.24 – 13.32	Kurnia A Y, Dewi R, Permata D Y, and Pataras M	Characteristics Comparison of Refinery Asphalt, Rubberized Asphalt, and Buton Asphalt in Stone Matrix Asphalt Pavement with Marshall and Cantabro Method	Universitas Sriwijaya
1514	13.32 – 13.40	Sumiati, Mahmuda, Andi Herius, Agus Subrianto	The Effect Of Polycarboxylate Addition Towards The Workability And High Strength Concrete	Polsri
1525	13.40 – 13.48	Ibrahim,, Andi Herius, Julian Fikri, M. Shaid Ramadhinata, Maryani	Stabilization Of Peat Soils Using Petrasoil With Cement Viewed From Cbr Value And Free Compressive Strength Value Of Soils	Polsri
1578	13.48 – 13.56	Sumiati, Mahmuda, Sukarman, Siswa Indra, and Darma prabudi	The Utilization Of Crushed Clay Brick As Coarse Aggregate On Eco-Green Lightweight Foamed Concrete	Polsri
1580	13.56 – 14.04	Arfan Hasan, Indrayani, Ridho Adrian, Dwiki Syamanda, Darma Budi, and Akhmad Mirza	Performance Analysis Of Patal - Pusri Intersections After Underpass Operated	Polsri
1591	14.04 – 14.12	Raja Marpaung, Kosim, Zainuddin, Darma Prabudi	Utilization Of Coconut Shells As A Of Some Coral Stone In Concrete Making Replacement	Polsri
1708	14.12 – 14.20	A. Latif, Yusri, Moch.Absor, A. Fuad Z.	Public Transportation Service Bus Rapid Transit (BRT) Trans Musi Sustainable in Palembang City	Polsri
1709	14.20 – 14.28	Herlinawati, Puryanto, Sudarmadji, Sazili	Transportation Needed of Bus Rapid Transit (BRT) Corridor in Palembang	Polsri
1656	14.28 – 14.36	R Ahmad, A B Mardhanie, P Suroso, T E Sutarto and R Alfajri	Effect of groundwater table on slope stability and design of retaining wall	Politeknik Negeri Samarinda



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
 phone +62711 353414 Fax: +62711 355918

Theme : TRACK 1 (Civil, Architecture and Geology Engineering Engineering) / SESSION 2
 Room : ROOM 4 (Electra 6, 2nd Floor)
 Moderator : M.Miftakhul Amin, S.Kom., M.Eng/ Agus Subrianto, M.Eng.
 Time : **14.44 - 16.20 WIB**
 Articles : 11

1345	14.44 – 14.52	Normaliaty Fithri, Endah Fitriani	Plastic To Fuel Technology As Alternative Operation Of Gas Engine Sukawinatan Waste To Energy In Palembang	Bina Darma University
1663	14.52– 15.00	Tahdid, Aida Syarif, Lety Trisnaliani, Syahrul Effendy	Performance Of 1300 Watt Generator Set Fuelled By A Mixture Of Gasoline And Oil From The Conversion Of Plastic Waste Type Polypropylene (PP) And Low Density Polyethylene (LDPE)	Polsri
1454	15.00 – 15.08	Pamilia Coniwanti, Fitri Hadiyah, Roosdiana Muin, Indira Nur Sakinah, FarraUnzilahKendari Putri, Robinsyah	The Effect Of Cracking Temperature From A Mixture Of Hdpe...	Universitas Sriwijaya
	15.08 – 15.16	BREAK		
1734	15.16 – 15.24	Mahmud Basuki, Selvia Aprilyanti, Azhari, Madagaskar	Design Of Corn Thresher	UTP
1777	15.24 – 15.32	Adi Setiawan, Alex Gusti Randa, Faisal Faisal, Taufiq Bin Nur	Thermal Decomposition Of Gayo Arabica Coffee-Pulp In A Segmented Chamber	Universitas Malikussaleh
1794	15.32 – 15.40	Eka Sri Kandi Putri1, Else Febriana1, Rasyid Ridhol and Marieska Verawaty	Microbial Community In Constructed Wetland During The Treatment Of Domestic Wastewater	Universitas Sriwijaya
1661	15.40– 15.48	Andriani, M.Shubhi Nurul Hadie and Fuji Asema	The Effect Of Geotechnical Characteristics Toward Road Damage At Lowland Area	Andalas University, Padang
1395	15.48 – 15.56	Falisa Falisa, Hendri Chandra, Harnani Harnani	Geochemical Studies Of Claystone Based On Analysis Of Scanning Electron Microscope (SEM), Talangsawah, Merapi District And Surroundings Of Lahat Regency, South Sumatra	Universitas Sriwijaya
1724	15.56 – 16.04	Fitra Ramdhani	The Evaluation Of Mechanical Rheology On Modification Rubber Asphalt	Abdurrahman University
1593	16.04– 16.12	Agus Subrianto, Amiruddin Amiruddin, Ibrahim Ibrahim, Ika Sulianti, Nudia Nudia, Salsabila Beladin	Influence Of Water To Foam Ratio On Compressive Strength Of Foamed Mortar As The Road Construction Material	Polsri
1674	16.12 – 16.20	Tommy Ekamitra Sutarto	Effect of bulk density, age, and water content on the erosional strength of streambank soils	Politeknik Negeri Samarinda



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Sriwijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
 phone +62711 353414 Fax: +62711 355918

Theme : TRACK 2 (Computer Science, Computer Engineering, Information System)
 Room : ROOM 5 (Electra 1, 1st Floor)
 Moderator : Herlambang, M. Kom, Ph.d./ R Passarella, M.Eng
 Time : 13.00 - 16.12 WIB
 Articles : 23

ID	Time	Authors	Title	Affiliation
1307	13.00 – 13.08	Erwin, A Rohman, L A Nurjanah, Yurika, D Sinta, Q Al'afwa	Technique automatic for detection and segmentation of optic disc area in retinal image	Universitas Sriwijaya
1308	13.08 – 13.16	Erwin, A Rohman, L A Nurjanah, Yurika, D Sinta, Q Al'afwa	New Techniques For Segmentation And Extraction Retinal Blood Vessels	Universitas Sriwijaya
1330	13.16 – 13.24	Fauzi Rakhmad Firdausi, Arif Djunaidy, Ahmad Muklason	Optimization Of City Bus Routes In Surabaya Using Memetic Algorithm As A Solution To Solve Orienteering Problem	ITS
1346	13.24 – 13.32	Dodo Zaenal Abidin, Siti Nurmaini, Reza Firsandaya Malik, Jasmir Jasmir	A Form Of Preprocessing For Social Media Data Extraction	Universitas Sriwijaya
1347	13.32 – 13.40	Nining Ariati, Dana Indra Sensuse, Putu Wuri Handayani	Factors Affecting Knowledge Sharing Capability Of Doctors In Palembang	UIGM
1348	13.40 – 13.48	Saiful Bukhori	Serious Game Supply Chain Management Agribusiness As A Production Planning Using Cournot Model	University of Jember
1366	15.48 – 13.56	Teuku Roli Ilhamsyah Putra, Muhammad Kalvin	How Electronic Word Of Mount (E-WOM) Affects Purchase Intention With Brand Image As A Mediation Variable : Case Of Xiaomi Smartphone In Student	Universitas Syiah Kuala
1355	13.56 – 14.04	Aryanti Aryanti, Lin Weicong, Lin chih-yi, Billy Brian Henriquez, Ikthison Mekongga, Aaron Raymond See	Smart Cup For Visual Impaired People Based On Arduino	Southern Taiwan University of science and Technology, Tainan, Taiwan
1351	14.04 – 14.12	M A Ahmad1, A R C Hussin, H M Dahlan1, J Mahmood	Challenges Of Teaching In Massive Open Online Course	Universiti Teknologi Malaysia
1371	14.12 – 14.20	Ahmad Nurul Fajar	Service Oriented Architecture and Enterprise Architecture Alignment for Loan Financing System	BINUS
1368	14.20 – 14.28	Albert, Ahmad Nurul Fajar, Nunung Nurul Qomariyah	Analysis Of SOA Framework For Property Real Estate Industry	BINUS
1370	14.28 – 14.36	Surahmat, Alfred Tenggono	Analysis Of Server Virtualization Service Performance Using Citrix Xenserver”	Palcomtech
1372	14.36 – 14.44	Suparto Darudiato, Eliando Eliando	The Pattern Of The Marketing Ground Coffee Beans Using Decision Support System	Matana University



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
 phone +62711 353414 Fax: +62711 355918

1375	14.44 – 14.52	Dewi Wardani, Achmad Khusyaini	The Utilization Of Ontology In Association Rule	Universitas Sebelas Maret
1376	14.52– 15.00	Wardani	The Evaluation Of Semantic Mapping	Universitas Sebelas Maret
1377	15.00 – 15.08	Mardiana and Eka Hartati	Measurement of User Satisfaction Level on Implementation of SISKEUDES Application	Palcomtech
	15.08 – 15.16	BREAK		
1388	15.16 – 15.24	Aditya P. P. Prasetyo, Rendyansyah, Sri Desy Siswanti, Siti Nurmaini, Abdurahman	Garbage Collector Robot (Gacobot) Design For Dry Waste Distribution	Universitas Sriwijaya
1396	15.24 – 15.32	Rezania Agramanisti Azdy, Febriyanti Darnis	Use Of Haversine Formula In Finding Distance Between Temporary Shelter And Waste End Processing Sites	Palcomtech
1676	15.32 – 15.40	Indri Ariyanti, Yusniarti Yusniarti, Sri Wahyuni	Geographic Information Systems Search Test Location For Admission Of New Students In Sriwijaya State Polytechnic Using Location Based Service (LBS) Method	Polsri
1564	15.40– 15.48	Madora, Yusniarti, Wahyuningrum, Noval	Book Catalog Information System In The Reading Room (Library) Web-Based Polytechnic Informatics Management Department Sriwijaya	Polsri
1446	15.48 – 15.56	R Passarella, A S Nugroho, and F N Arsyad	Pull-down Fitness Technique Analysis using Motion Capture	Universitas Sriwijaya
1721	15.56 – 16.04	Meiyi Darlies, Ema Laila, Ali Firdaus, Muhamad Erwin	Analysis of EDFAT Methods in Photography Techniques	Polsri
1358	16.04– 16.12	Heru Fahlevi, Teuku Roli Ilhamsyah Putra and Rina Suryani Oktari	Predicting Cost Recovery Rate of Ischemic Stroke Patients: A Potential Application of Big Data Analysis in Hospital	Universitas Syiah Kuala



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918

Theme : TRACK 2 (Computer Science, Computer Engineering, Information System)
Room : ROOM 6 (Electra 2, 2nd Floor)
Moderator : Ervi Cofriyanti, M.TI/Ozkar Firdausi Hamzah, S.T., M.T., M. Sc
Time : 13.00 - 16.12WIB
Articles : 23

ID	Time	Authors	Title	Affiliation
1448	13.00 – 13.08	Yesi Sriyeni and Maria Veronica	Development Analysis For Numbers And Colors Learning Media	Palcomtech
1455	13.08 – 13.16	Heki Aprianto and Alan Saputro	Animation Design as an Educational Media of Adolescents' Social Behavior Deviation” has been accepted with major revision	Palcomtech
1458	13.16 – 13.24	Syahrul, Pertiwi	Designing Mobile Based User Interface for Promotion of Lakeur Craft Art Application at Balaputra Dewa State Museum	Palcomtech
1464	13.24 – 13.32	Lindawati, I Salamah, Asriyadi, M Fadhli	Prototype of RFID-Based Parking Slot Availability Detection System	Polsri
1466	13.32 – 13.40	DS Sri, FP Rian, Z Ahmad	Mobile Robot Motion Control Based on Static Hand Gesture	Universitas Sriwijaya
1473	13.40 – 13.48	Adelin Adelin, Febria Sri Handayani	Object-Based Design and Modeling Batik Nusantara Catalog Wibatara.com	Palcomtech
1548	13.48 – 13.56	Al Farissi, Halina Mohamed Dahlan, Samsuryadi	Genetic Algorithm Based Feature Selection With Ensemble Methods For Student Academic Performance Prediction	Universitas Sriwijaya
1673	13.56 – 14.04	Suzan Agustri, Dana Indra Sensuse	Information System Strategy Planning in The Private Universities of South Sumatera	Universitas Indo Global Mandiri
1577	14.04 – 14.12	Kintan Rahayu, Leni Novianti, Meivi Kusnandar	Implementation Data Mining With K-Means Algorithm For Clustering Distribution Rabies Case Area In Palembang City	Polsri
1630	14.12 – 14.20	Farizal F	Engine replacement scheduling optimization using Data Mining	Universitas Indonesia
1646	14.20 – 14.28	D. Tri Octafian, Febrianty, Hendra Hadiwijaya	User Experience Analysis On Class I Lpka Palembang Filial E-School	Palcomtech Palembang
1649	14.28 – 14.36	Rika Sadariawati, A. Ari Gunawan, Meivi Kusnandar	Information System Of Student's Final Report And Final Assignment At State Polytechnic Of Sriwijaya With Android Based	Polsri
1653	14.36 – 14.44	Nita Novita, M. Aris Ganiardi, Indri Ariyanti, Delta Khairunnisa	Design Of Semester Exam Scheduling At The State Polytechnic Of Sriwijaya Application	Polsri
1682	14.44 – 14.52	Rike Sucihati, Ahmad Bahri Joni Malyan, Ervi Cofriyanti	Augmented Reality in the Registration Flow for Enterance Examination at State Polytechnic of Sriwijaya Based on Android	Polsri
1683	14.52– 15.00	Leni Novianti, Devi Sartika, Dewi Irmawati, Ienda Meiriska	Design and Build Application of Campus Parking Area for State Polytechnic of Sriwijaya Based on Smartphone	Polsri
1688	15.00 – 15.08	A.Bahri Joni M, Herlambang Saputra, Ahyar Supani, Indarto	Implementation Of Biometric Fingerprint Barbasis Security Doors With Attendance Database On Sriwijaya State Polytechnic	Polsri



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
 phone +62711 353414 Fax: +62711 355918

15.08 – 15.16		BREAK		
1704	15.16 – 15.24	Ahyar Supani, Yuli Adriani	Designing and Applying Flood Early Warning System with Fuzzy Logic Based on Rainfall and Water Level for Special of Palembang City	Polsri
1707	15.24 – 15.32	Huda Ubaya and Ria Siti Juairiah	Performance of RUS and SMOTE Method on Twitter Spam Data Using Random Forest	Universitas Sriwijaya
1432	15.32 – 15.40	Sanjaya, Kurniawan, Saputra, Azhar	Mobile Android Based Geographic Information System (GIS) Software Development for Tourist Destination Seekers in Palembang City	Universitas Sriwijaya
1441	15.40– 15.48	M. Rudi Sanjaya, Dedy Kurniawan, Ariansyah Saputra, Iman Saladin B Azhar	GIS Android mobile based Software Development for Tourism Objects, Public Places list, Transportations list, and Culinary Places list Using Usability Measurement	Universitas Sriwijaya
1727	15.48 – 15.56	Firdaus, Andre Herviant Julianoa, Naufal Rachmatullaha, Sarifah Putri Rafflesiab, Dinna Yunika Hardiyantib, Ahmad Zarkasi, Ferlita Pratiwi Arisantia, Siti Nurmaini	The impact of Negative to Positive Training Dataset Ratio on Atrial Fibrillation Classification Machine Learning Algorithms Performance	Universitas Sriwijaya
1791	15.56 – 16.04	Yordan Hasan, Abdurrahman, Yudi Wijanarko, Selamat Muslimin, Renny Maulidda	Analysis of ID Card Implementation as the Automatic Door Lock Security in Electrical Engineering Department	Polsri
1785	16.04– 16.12	Annisa Darmawahyuni, Siti Nurmaini, M Naufal Rachmatullah	Analysis of Classifier Performance on ECG Interpretation for Precision Medicine: Which performance metrics should we use?	Universitas Sriwijaya



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918

Theme : TRACK 3 (Management Economics, Business Administration, Accounting)
Room : ROOM 7 (Diamante 1, Ball Room, M Floor)
Moderator : Doeslohah Djumrianti, S.E.MIS., Ph.D/Dr. Sari Lestari ZR
Time : 13.08 -15.48 WIB
Articles : 20

ID	Time	Authors	Title	Affiliation
1718	13.00 – 13.08	Dewi Fadila, Hendra Satrawinata, Mariskha Z, Riska Maulana	Impact of Learning, Socialization and Financial Lifestyle on Student' Intention to Invest in Capital Market	Polsri
1695	13.08 – 13.16	Sulaiman, Bramantyo Muhamad Pangestu, Bainil Yulina, Siska Aprianti	The Effect Of Capital Readiness And E-Commerce Utilization On The Competitiveness Of Micro Small And Medium Enterprises (MSMEs) Woven Palembang	Polsri
1381	13.16 – 13.24	Zulkifli, Martini, Hartati, Widyastuti	Dimensions Of Village Expenditure In Development Sector	Polsri
1394	13.24 – 13.32	Dwi Eva Nirmagustina, Sri Handayani and Luluk Irawati	Comparison Analysis Of Organic Rice And An Organic Rice Added Value Approach	Politeknik Negeri Lampung
1440	13.32 – 13.40	Amalia	Analysis Of Political Connection, Profitability And Capital Intensity Against Tax Avoidance In Coal Companies On The Indonesia Stock Exchange	Palcomtech
1697	13.40 – 13.48	Sari Lestari, Zainal Ridho, Neneng Miskiyah, Muhammad Anshari, Hadi Jauhari ¹	Human Resource Role and Online Strategy	Polsri
1476	13.48 – 13.56	Munparidi, L.Suhairi Hazizma & A.Jalaludin Sayuti	Relationship Model among Employee Engagement, Organizational Commitment and Employee Performance	Polsri
1488	13.56 – 14.04	Gst Ayu Oka Widarti, Esysa Alhadi, Elvia Zahara, Titi Andriani	The Effect of Customer Orientation and Service Quality on Trust and Customer Loyalty	Polsri
1490	14.04 – 14.12	Fetty maretha, yulia pebrianti, rini rini, lisnini	Model of Empowerment as Strategies for Women SMEs Entrepreneurs Competitiveness in Palembang	Polsri
1532	14.12 – 14.20	Koesharijadi, Hardiyansyah and Muhamad Akbar	E-Government Policy, Leadership Commitment, Apparatus Resources Development, And Their Implications On Public Service Performance	Universitas Bina Darma
1537	14.20 – 14.28	Evada Dewata, Yuli Antina Aryani, Yuliana Sari, Aladin	Industrial Clasterization To Improve The Competitiveness Of Small And Medium Industries In The City Of Palembang	Polsri
1542	14.28 – 14.36	Sopian.A.R, Periansya, Ardiyan Natoen, Indra Satriawan	The Influence Of Competence, Leadership, Motivation Work Impact On The Commitment Of Civil State Apparatus In The Office Of The Governor South Sumatera Province	Polsri



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
 phone +62711 353414 Fax: +62711 355918

1549	14.36 – 14.44	Lupikawaty, Alhamdari, Bustan	Analysis Method Economic Value Added (EVA) of Cosmetics Companies Listed on the Stock Exchange Period 2013-2017	Polsri
1620	14.44 – 14.52	Anggeraini Oktarida, Eka Jumarni Fithri, Lambok Vera Riama, Sri Hartati	Determinants The Quality Regional Financial Statement	Polsri
1538	14.52– 15.00	Susi Ardiani, Sarikadarwati, Henny Yulsiati, Sandrayati	The Effect Of Hospital Image And Service Quality On Customer Loyalty Through Customer Satisfaction As Intervening Variables In Siti Khadijah Hospital In Palembang City	Polsri
1561	15.00 – 15.08	Yevi Dwitayanti, Maria Maria, Nurhasanah Nurhasanah, Rosy Armaini	The Impact Of Village Fund Program Implementation Towards Society Welfare In Indonesia	Polsri
	15.08 – 15.16	BREAK		
1687	15.16 – 15.24	Desi Indriasari, Kartika Rachma Sari, Kiagus Zainal Arifin, Choiruddin	Determinants of Village Financial Management Accountability (Study of Villages in Pampangan Sub-District, OKI Regency and Rambutan Sub-District, Banyuasin Regency)	Polsri
1712	15.24 – 15.32	Elisa, Marieska Lupikawaty, Yusleli Herawati, Purwati	Evaluation of Sales Price within Calculation Cost of Good Production SMEs Pempek Ilir Barat I and Bukit Kecil District Palembang	Polsri
1686	15.32 – 15.40	M. Husni Mubarak, Faridah, Nelly Masnila	The Effect Of Taxpayer Awareness And Tax Sanctions On Compliance In Paying Land And Building Taxes In Bukit Kecil Sub-District Of Palembang	Polsri
1644	15.40– 15.48	M. Yusuf, Yusnizal Firdaus, Markoni Badri, AlHusori	The Environmental Compliance Management Of Palm Oil Plantation In Ogran Komering Ilir Regency, Sumatera Selatan, Indonesia	Polsri



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Sriwijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918

Theme : TRACK 3 (Management Economics, Business Administration, Accounting)
Room : ROOM 8 (Diamante 2, Ball Room, M Floor)
Moderator : **Dr. Welly / Heri Setiawan, MM**
Time : 13.00 – 15.56 WIB
Articles : 21

ID	Time	Authors	Title	Affiliation
1436	13.00 – 13.08	Nurul Aryanti, Welly Ardiansyah, Murwani Ujihanti	Attitude, Motivation, and Parental Involvement towards Students' Reading Comprehension Achievement	Polsri
1457	13.08 – 13.16	Irmeilyana Irmeilyana, Ali Amran	Relationship between GPA, Length of Study, and Competence with The Length of Time to Get A Job at Alumni of The Mathematics and Natural Sciences, University of Sriwijaya	Universitas Sriwijaya
1509	13.16 – 13.24	Wustari L. Mangundjaya	Testing the Role of Charismatic Leadership, Psychological Climate, and OCB on Resilience	Universitas Indonesia
1512	13.24 – 13.32	Hermina Agustina Mahendrati, Wustari Mangundjaya	Individual Readiness For Change and Affective Commitment To Change: The Mediation Effect Of Technology Readiness On Public Sector	Universitas Indonesia
1515	13.32 – 13.40	Dwi Andriani Puspitasari, Wustari L Mangundjaya	Leader-Member Exchange and Affective Commitment to Change: Mediating Role of Change Self-Efficacy	Universitas Indonesia
1516	13.40 – 13.48	Susilo, Wustari L. Mangundjaya ²	Testing Mediation of Psychological Empowerment, Work Engagement to Affective Commitment to Change	Universitas Indonesia
1547	13.48 – 13.56	Suroso, Wasitoh Meirani, Muhammad Erwin, Ayu Puspasari	Aim, Concept, and Objectives of Education in Islam	Polsri
1550	13.56 – 14.04	Yurnalis, Wustari Mangundjaya	Testing the Impacts of Organizational Justice on Affective Commitment to Change with Work Engagement as Mediator	Universitas Indonesia
1559	14.04 – 14.12	Eliyeny, Herman, Sunani, Muhammad Nadjmuddin	The Effect Of Directed Reading - Thinking Activity On Students' Critical Thinking Abilities	Polsri
1563	14.12 – 14.20	Darmaliana, Risnawati, Risa, Sri Endah Kusmartini	The Development Of Teaching Material Speaking 2 Based On Communicative Approach For Students In English Department Of Sriwijaya Palembang State Politechnic	Polsri
1575	14.20 – 14.28	Heri Setiawan, Taufiq Marwa, Zakaria Wahab, Muchsin Sagaf	Exploring Linkage among Experiential Value, Destination Image and Revisit Intention in Natural-based Tourism	Polsri
1589	14.28 – 14.36	Munaja Rahma, Zakaria, Moehammad Ridhwan	Students' Perception of English Blended Learning in State Polytechnic of Sriwijaya	Polsri
1612	14.36 – 14.44	Pridson Mandiangan, Desloehal Djumrianti, Hanifati	Online Transportation Technology and Women's Driver Communication Skills	Polsri



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
 phone +62711 353414 Fax: +62711 355918

1618	14.44 – 14.52	Zulkifli zulkifli, nian evawati, koryati koryati	The Importance Of The Language Experience Approach (Lea) In Teaching Reading Comprehension To The Third Semester Of Engineering Students In State Polytechnic Of Sriwijaya	Polsri
1631	14.52– 15.00	Paisal Paisal, Afrizawati Afrizawati, Divianto Divianto, Yahya	The Effect Of Organization Climate On Performance With Job Satisfaction As An Intervening Variable	Polsri
1652	15.00 – 15.08	Suryati, Ahmad Sanmorino	The clustering of paddy fields in the province of South Sumatera as an input for the government in determining policy	UIGM
	15.08 – 15.16	BREAK		
1671	15.16 – 15.24	Deri Darfin, Zulkarnaini, Ridwan Effendi, Robinson,	The Public Service Quality Of The Library Services At The Library Unit Of State Polytechnic Of Sriwijaya	Polsri
1714	15.24 – 15.32	Sri Gustiani, Yusri, Tiur Simanjuntak, Evi Agustinasari	The Effectiveness of Blended Learning Approach on Essay Writing Subject	Polsri
1717	15.32 – 15.40	Hadi Winarko, Zaliah, Aimi	Analysis of Student Services at State Polytechnic of Sriwijaya	Polsri
1467	15.40 – 15.48	Setiawan, Hamid, Bustan, Ummasyroh	The Effect of Culinary Knowledge and Culinary Experience on Local Culinary Attractiveness	Polsri
1693	15.48 – 16.56	Muhamad Erwin, Carlos RS, Irawan Rusnadi, Ahmad Zamheri, Dicky Seprianto, Alan Novi Tompunu, Meiya Darlies	Criminal Law Policy in the Crime of Persecution carried out by People who Come from Outside Orang Rimba Group Against Members of Orang Rimba Tribe Around the Bukit Duabelas National Park, Jambi Province, Indonesia	Polsri



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918

Theme : TRACK 1 (Engineering and Science)
Room : ROOM 12 (Diamante 6, Ball Room, M Floor)
Moderator : HettyMeileni, S.Kom, M.TI/ Alan Novi Tompunu, S.T., M.T.
Time : 13.00-14.36 WIB
Articles : 12

1557	13.00 – 13.08	Hetty Meileni, Cindy Indah Pratiwi, Ienda Meiriska, and Desi Apriyanty	Information System Of Small And Medium Business In Palembang City	Polsri
1560	13.08 – 13.16	Hetty Meileni, Diky Juniansyah Putra, Desi Apriyanti, Indra Satriadi	Inventory Of Goods Data Processing Using The Economic Order Quantity (Eoq) Method	Polsri
1362	13.16 – 13.24	Emilia Hesti, Sholihin, Adewasti, Sarjana	Internet Of Thing For The Robot Comando Commandation System	Polsri
1439	13.24 – 13.32	Idha Silviyati, Nyayu Zubaidah, Jaksen M.Amin, Endang Supraptiah, Rizka Dwi Utami, Iqbal Ramadhan	The Effect Of Addition Of High Density Poly Ethylene (HDPE) As Binder On Hebel Light Brick (CELCON)	Polsri
1640	13.32 – 13.40	Ibnu Ziad, Ali Nudin, Jon Endri, Ciksadan	Implementation Of Fingerprint Control In Majors Electrical Engineering Using Arduino	Polsri
1672	13.40 – 13.48	Erlinawati, A. Zikri, Sutini PL., Agus M., Fathona S.	Biodiesel Production from Bintaro (Cerbera Manghas L) Seeds with Potassium Hydroxide as Catalyst	Polsri
1677	13.48 – 13.56	Djaka Suhirkam, B Hodayat Fuady, Lina Flaviana, Suhadi	The Copper Fiber On Compressive Strength And Elastic Modulus On Concrete FC'25	Polsri
1679	13.56 – 14.04	Irawan Hadi, Abdul Rakhman, Nasron, Martinus Mujur Rose	Information System Feature Development of Telecommunications Engineering Study Program to Support the New Accreditation and the New Curriculum System	Polsri
1696	14.04 – 14.12	Didi Suryana, Almadora Anwar Sani, Azharuddin Azharuddin, Safei Safei, Indra HB	Grip Tool Cnc Mill 3A To Get 12 Sides Of The Elbow On Results Induction Electrical Furnance Casting	Polsri
1698	14.12 – 14.20	Slamet Widodo, M.Miftakhul Amin, Adi Sutrisman, Ervi Cofriyanti, Maulani Puji R	Implementation of Parking Portal Door Security System Using RFID and Password Based on Microcontrollers in Sriwijaya State Polytechnic	Polsri
1798	14.20 – 14.28	Sairul Effendi, Firdaus, Karmin, Romli, Ozkar F. Homzah ¹	Effects of Carburizing Processes on Nodular Cast Iron with Variations in Temperature, Time and Cooling System	Polsri
1799	14.28 – 14.36	Alan Novi Tompunu, Yulian Mirza, and Azwardi	Room Door Security System Using Microcontroller-Based E-KTP	Polsri



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



TABLE OF CONTENTS

TRACK 1.....	1
ELECTRICAL ENGINEERING.....	1
A GLOBAL KNOWLEDGE SHARING AND SEMANTIC COMPUTING SYSTEM WITH 5-DIMENSIONAL WORLD-MAPFOR NATURAL AND SOCIAL ENVIRONMENT-ANALYSIS AND VISUALIZATION	1
5G Channel Model for 28 GHZ Frequency in Palembang	2
B Alfaresi , Z Nawawi , R F Malik, K Anwar.....	2
Wireless Sensor Network Data Communication and Information System to Regulate Water Volume and Turbine Rotation	3
Suzan Zefi ¹⁾ , Eka Susanti ²⁾ , R.A Halimahtussa'diyah ³⁾ , Sholihin ⁴⁾	3
Tomato Harvesting Arm Robot Manipulator; a Pilot Project.....	4
Yurni Oktarina ¹ ,Tresna Dewi ¹ , Pola Risma ¹ , and Muhammad Nawawi ¹	4
Performance Evaluation Solar Charge Controller on Solar Power System Home-Based SPV Amorphous 80 Watt-Peak.....	5
Armin Sofijan ¹ , Zainuddin Nawawi ² , Bhakti Yudho Suprpto ³ , Riman Sipahutar ⁴ , Irwin Bizzy ⁵	5
The Implementation of YateBTS Based GSM Using Raspberry PI.....	6
Sopian Soim ¹⁾ , Suroso ²⁾ , Ade Silvia Handayani ³⁾ , Ahmad Taqwa ⁴⁾ , Nur Shadrina ⁵⁾	6
Optimization of Own Electricity Usage with Electricity Supply from Solar Cells at Darajat Geothermal Power Plant.....	7
Brendy Chandra Supian Atmodjo ¹ and Rinaldy Dalimi ¹	7
Ultrasonic Sensor Application as a Performance Enhancement of Robot Two Wheels.....	8
Yeni Irdyanti ⁽¹⁾ , Rd. Kusumanto ⁽²⁾ , Masayu Anisah ⁽³⁾ , Niksen Alfarizal ⁽⁴⁾ , Zarmariesyah Erman ⁽⁵⁾ ...	8
Operation 3 Phase Induction Motor 1 KW Star Delta System Using HP (Smart Phone).....	9
Nofiansah ¹ , M. Noer ² , Nurhaida ³ , M. Hafidz Aulia ⁴	9
PLC Omron CJ1M CPU-21 Control Modification for Drill Oil Hole Machine in an Automotive Company	10



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



Lin Prasetyani 1, Bayu Ramadhan1 , Tresna Dewi2 , William Sarfat1	10
Characteristics of Battery Use in Electric Car.....	11
Yessi Marniati*, Andri Suyadi, Herman Yani, Sutan Marsus**	11
Learning Module of Analog Electronics Practice	12
Sabilal Rasyad, Evelina, Amperawan, Dewi Permata Sari, Nyayu Latifah Husni.....	12
DIFFERENT METRIC DISTANCES ON THE K-MEANS METHOD IN BUILDING A CANS WASTE CLASSIFICATION SYSTEM USING THE CMYK COLOR MODEL	13
Implementation of Facial Feature Extraction Using Viola-Jones Method for Mobile Robot System ...	14
Ahmad Zarkasi ^{1,2} , Siti Nurmaini, Deris Setiawan, Ahmad Kuswandi, Sri Desy Siswanti.....	14
Effect of Load on BLCD Motor.....	15
Rumiasih, Carlos R. Sitompul, Anton Firmansyah, Indah Susanti	15
Implementation of DSK TMS320C6416T Module in Designed of Sound Detection	16
D A Pratama, N L Husni, E Prihatini, S Muslimin	16
Automatic Cooling of a PV System to Overcome Overheated PV Surface in Palembang.....	17
Ahmad Taqwa ^{1,2} , Tresna Dewi ^{1,2} , RD. Kusumanto ^{1,2} , Carlos R Sitompul ^{1,2} , Rusdianasari ¹	17
Analysis of Performance Test and Consumption of BLDC 350 W Motor Power to Mechanical Vibration with Variation of Speed and Load Variation	18
Hairul, Markori, Indrawasih dan Sudirman Yahya	18
The Influence of Change of an Angle of Illuminance on Solar Power Generating Capacity 30 Watts in Laboratory of Electrical Engineering Polytechnic of Sriwijaya.....	19
Zainuddin Idris, M. Yunus, Siswandi, Bambang Guntoro	19
The Effect of Drying Airflow Rate on H ₂ O MASS Evaporated for Banana Chips Drying Using Photovoltaic Solar Panel	20
Yohandri Bow ¹ , Adi Syakdani ² , Muhammad Taufik ² , Rusdianasari ³	20
Development and Feasibility Analysis of Floating Solar Panel Application in Palembang, South Sumatra.....	21
Benny Junianto ¹ , Tresna Dewi ² , Carlos Sitompul ²	21
Effects of Grid Frequency Drop on The Dynamic Performance of Full Converter Wind Turbine Generator.....	22
A. M. Shiddiq Yunus ¹ ,Makmur Saini ² , Sri Suwasti ¹ , dan Purwito Purwito ³	22



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918

Modified Design for Water Metering System.....	23
Nyayu Latifah Husni ¹ , Dampito ² , Abdurrahman ³ , Evelina ⁴ , ade Silvia Handayani ⁵ , Sabibal Rasyad ⁶ , Adella Rialita ⁷¹⁻⁷ Electrical Department, Politeknik Negeri Sriwijaya	23
Implementation of Fuzzy Logic Type-2 On Mobile Robot Navigation System.....	24
Ade Silvia Handayani, Jefri Alkausar, Sarjana Sarjana, Nyayu Latifah Husni, Siti Nurmaini, Irsyadi Yani.....	24
INTELLIGENT CONTROLLER FOR FLEXIBLE ROBOT ARM	25
The Analysis of Wear on Artificial HIP Joint with Dimple on Femoral Surface	26
Hasan Basri ^{1,*} , A. Syahrom ^{2,3} , Amir Putra Md Saad ² , A. T. Prakoso ¹ , D. Wicaksono ¹ , M. I. Amarullah ¹ , Tri Satya Ramadhoni ¹	26
Optimal Design of Plasticizing Screw Using Artificial Intelligent Approach.....	27
Fatahul Arifin ^{1, 2(*)} , Min-Wen Wang ¹ , Jhen-Wei Kuo ³ , Tzong-Horng Dzw ⁴	27
Mechanical Degradation Model of Porous FE Scaffold: Simulation Approach.....	28
Akbar Teguh Prakoso ¹ , Ardiyansyah Syahrom ^{2,3} , Amir Putra Md Saad ^{2,3} , Abdul Hadi Abdul Wahab ⁴ , M. A. Sulong ^{2,3} , Achmad Rendiko Ichsan ¹ , Apreka Diansyah ¹ , Risky Utama Putra ¹ , Muhammad Imam Ammarullah ¹ , Hasan Basri ^{1*}	28
Scoopy Blade for Low Current River Waterwheel Supporting The Energy Needs in The Rural Areas of Indonesia.....	29
Darmawi ¹ , Riman Sipahutar ² , Irwin Bizzy ³	29
SELT Design as a source of renewable electricity using the Flywheel Generator and Photodiode Sensor	30
Indra Maulana, Dicky Seprianto, Yossy Yudhianto, Muhammad Najib, Muhamad Azwar.....	30
Analysis of Upgrading Process Of South Sumatera Low Rank Coal	31
Riman Sipahutar ¹ , Diah Kusuma Pratiwi ¹ , Darmawi Bayin ¹ , Irwin Bizzy ¹ , Baiti Hidayati ^{1,2}	31
The Effect of Parameters on The Process of Making Objects With Rapid Prototyping Digital Light Processing Technology on The Bending Stress	32
Romli ¹ , D Seprianto ¹ , DP Putra ¹ , M Rasid ¹ and A. Zamheri ¹	32
The Effect of Rectangular Parallel Key Manufacturing Process Parameters Made With Stereolithography DLP 3D Printer Technology against Impact Strength.....	33
D Seprianto ¹ , R Sugiantoro ¹ , Siproni ¹ , Yahya ¹ and M Erwin ²	33
Simulation of the Effect of Cutting Angle in Lathe Process on Distribution of Cutting Temperature ..	34



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Sriwijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



Ismail T ¹ , Amrifan SM ² , Irsyadi Y ³ , Riman S ⁴ , Rahmad H ⁵	34
Conduction Heat Rate Analysis of Tool in Titanium Turning Process	35
Ismail T ¹ , Amrifan S M ² , Riman S ³ , Irsyadi Y ⁴ , Sandro O ⁵ , Fatiandari A ⁶	35
Cooling Channel Design for a Built-In Spindle of a Machine Tool.....	36
Kun-Ying Li ^{1,2} , Win-Jet Luo ^{2*} , Shih-Jie Wei ¹ , and Yan-sin Liao ¹	36
Design of Automatic Control Systems at Loader Output of Snap Gauge Machine in Manufacturing Industry	37
Syahril Ardi ¹ and Rahardian Faizal Zuhdi ²	37
The Influence of Change of an Angle of Illuminance on Solar Power Generating Capacity 30 Watts in Laboratory of Electrical Engineering Polytechnic of Sriwijaya.....	38
Zainuddin Idris, M. Yunus, Siswandi, Bambang Guntoro.....	38
The Effect of Drying Airflow Rate on H ₂ O MASS Evaporated for Banana Chips Drying Using Photovoltaic Solar Panel	39
Yohandri Bow ¹ , Adi Syakdani ² , Muhammad Taufik ² , Rusdianasari ³	39
Development and Feasibility Analysis of Floating Solar Panel Application in Palembang, South Sumatra.....	40
Benny Junianto ¹ , Tresna Dewi ² , Carlos Sitompul ²	40
Effects of Grid Frequency Drop on The Dynamic Performance of Full Converter Wind Turbine Generator.....	41
A. M. Shiddiq Yunus ¹ , Makmur Saini ² , Sri Suwasti ¹ , dan Purwito Purwito ³	41
Modified Design for Water Metering System.....	42
Nyayu Latifah Husni ¹ , Dampito ² , Abdurrahman ³ , Evelina ⁴ , ade Silvia Handayani ⁵ , Sabilal Rasyad ⁶ , Adella Rialita ^{7,1-7} Electrical Department, Politeknik Negeri Sriwijaya	42
Implementation of Fuzzy Logic Type-2 On Mobile Robot Navigation System.....	43
Ade Silvia Handayani, Jefri Alkausar, Sarjana Sarjana, Nyayu Latifah Husni, Siti Nurmaini, Irsyadi Yani.....	43
The Analysis of Wear on Artificial HIP Joint with Dimple on Femoral Surface	44
Hasan Basri ^{1*} , A. Syahrom ^{2,3} , Amir Putra Md Saad ² , A. T. Prakoso ¹ , D. Wicaksono ¹ , M. I. Amarullah ¹ , Tri Satya Ramadhoni ¹	44
Mechanical Degradation Model of Porous FE Scaffold: Simulation Approach.....	46



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



Akbar Teguh Prakoso ¹ , Ardiyansyah Syahrom ^{2,3} , Amir Putra Md Saad ^{2,3} , Abdul Hadi Abdul Wahab ⁴ , M. A. Sulong ^{2,3} , Achmad Rendiko Ichsan ¹ , Apreka Diansyah ¹ , Risky Utama Putra ¹ , Muhammad Imam Ammarullah ¹ , Hasan Basri ^{1*}	46
Scoopy Blade for Low Current River Waterwheel Supporting The Energy Needs in The Rural Areas of Indonesia.....	47
Darmawi ¹ , Riman Sipahutar ² , Irwin Bizzy ³	47
SELT Design as a source of renewable electricity using the Flywheel Generator and Photodiode Sensor	48
Indra Maulana, Dicky Seprianto, Yossy Yudhianto, Muhammad Najib, Muhamad Azwar.....	48
Analysis of Upgrading Process Of South Sumatera Low Rank Coal	49
Riman Sipahutar ¹ , Diah Kusuma Pratiwi ¹ , Darmawi Bayin ¹ , Irwin Bizzy ¹ , Baiti Hidayati ²	49
The Effect of Parameters on The Process of Making Objects With Rapid Digital Prototyping Light Processing Technology on The Bending Stress	50
Romli ¹ , D Seprianto ¹ , DP Putra ¹ , and M Rasid ¹	50
The Effect of Rectangular Parallel Key Manufacturing Process Parameters Made With Stereolithography DLP 3D Printer Technology against Impact Strength.....	51
D Seprianto ¹ , R Sugiantoro ¹ , Siproni ¹ , Yahya ¹ and M Erwin ²	51
Simulation of the Effect of Cutting Angle in Lathe Process on Distribution of Cutting Temperature ..	52
Ismail T ¹ , Amrifan SM ² , Irsyadi Y ³ , Riman S ⁴ , Rahmad H ⁵	52
Conduction Heat Rate Analysis of Tool in Titanium Turning Process	53
Ismail T ¹ , Amrifan S M ² , Riman S ³ , Irsyadi Y ⁴ , Sandro O ⁵ , Fatiandari A ⁶	53
Cooling Channel Design for a Built-In Spindle of a Machine Tool.....	54
Kun-Ying Li ^{1,2} , Win-Jet Luo ^{2*} , Shih-Jie Wei ¹ , and Yan-sin Liao ¹	54
Design Control Systems of Marking Machine and Total Length Check Damper Assembly Based on Programmable Logic Controller.....	55
Syahril Ardi ¹ and Juliantito Ardianto ²	55
Experimental Vibration Study in Milling Thin-Walled TI6AL4V Under MQL Using Coconut Oil As Cutting Fluid.....	56
M Yanis ^{1*} , A S Mohruni ¹ , S Sharif ² , I Yani ¹ , M Zahir ¹	56
Determination Overlap Ratio on Savonius Twisted Water Turbine Using Numecca Software.....	57
Dr. Carolus Bintoro ¹ , Vicky Wuwung MT ¹ , Fathurrohman Nurdin ²	57



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



Optimization Electricity Supply for Thousand Island Jakarta Province by Using Hybrid Photovoltaic-Wind Turbine-Diesel Generator-Crude Palm Oil (CPO) Power Plant-Battery System	58
Dharma Manurung ¹ and Rinaldy Dalimi ¹	58
Study on Using Casting Simulation Software for Design and Analysis Gate and Riser in Small Foundry Industries	59
Irawan Malik ¹ , A S Almadora ² and M Ali ³	59
Application of Vacuum Valve Technology as AFR Settings in 3500 Watt Operated by Methane Gas .	60
Tri Widagdo ¹ , Ella Sundari, Eka Satria martomi ¹	60
Innovation Utilization of Nitridation Method in Improving Hardness and Corrosion Resistance of Blacksmiths Crafts	61
Muhammad Rasid, S.T., MT. ¹	61
Performance Analysis of a Sludge Drying	62
Win-Jet Luo ¹ Nai-Feng Wu ² Cheng-Yan Lin ² Deri Suhaeji ²	62
Study on Ventilation Performance in Operating Room with Variation Ventilation Design	63
Yan-Lin Wu, Yu-Lieh Wu, Azka Hasya Hanifan	63
D Santoso ¹ , Z Abidin ¹ , J Yanto ²	64
Analysis Model for Orifice Flow Meter Correction Factor in Measuring in-Pipe Natural Gas Flow based on Numerical Simulation	65
Bunyamin ¹ , Kaprawi ¹ , Dewi Puspitasari ¹ , Sugianto ² , Nyayu Latifah Husni ³	65
The Analysis of Biogas Fermentation Time from Cow Manure on Biodigester Fixed Dome Batch Systems	66
Sajaruddin ¹ , Leila Kalsum ¹ , Zainuddin Muchtar ²	66
The Effect of Surface Modification on Heat Transfer of Heat Exchanger	67
Hong-Yi Lin, Yu-Lieh Wu, Kai-Siang Yang, Chih-Yung Tseng	67
Prototype of Biodiesel Processors Using Waste Oil (Study of The Effect of The Number of CAO Catalyst (Blood Shell Shells) and Reaction Time of The Biodiesel Rendemen)	68
Ida Febriana ^{1,2} , Anerasari M1, KA Ridwan ¹ , Taufik Jauhari ¹	68
Production of Ethyl Ester with The Influence of Electrode Type, Reaction Time And Electric Voltage from Waste Cooking Oil	69
Rosdiana Moeksin [*]), Farida Ali, Susila Arita	69



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



Biscuit Product Development Using Moringa Oleifera Flour as an Additional Source of Nutrition	70
Hilwatullisan ^{1(a)} , M. Zaman ¹ , A.Husaini ¹ and Siti Chodijah ¹	70
The Physical Characteristics of Cracked Plastic Waste	71
Selpiana ¹ , Prahady Susmanto ¹ , Lia Cundari ¹ , Dedek Oktari ² , Omar Ibrahim ²	71
The Analysis of The Use Calcium Oxide from Waste Cockle Shells (<i>Anadara Granosa</i>) and Sodium Hydroxide Catalyst on Prototype Biodiesel Processors Using Waste Cooking Oil Reviewed on Yield of Biodiesel.....	72
Sahrul Effendy, Tahdid, Lety Trisnaliani, Sandy A Putra, dan Alifah R Hefyani.....	72
Effect of Temperature and Starter Concentration on The Fermentation Process in Making MOCAF .	73
Muhammad Yerizam ¹ , Suri Andayana ¹ and Utari Oktavia ¹	73
Adsorption of Synthetic DYE by Betel Nuts Activated Carbon in a Fixed-Bed Column, Experiments And Prediction of Breakthrough Curves.....	74
L Cundari*, M N Fakhri, M Z Rizki	74
Effect of Catalysts on The Quality of Biodiesel from Waste Cooking Oil by Induction Heating	75
Rusdianasari ¹ , Aida Syarif ¹ , Muhammad Yerizam ² , M. Syahirman Yusi ³ , Leila Kalsum ¹ , Yohandri Bow ²	75
Characterization of Red Beetroot Soft Jelly Candy with Guava Extract and Gel Colloid Added.....	76
Meilianti* ¹ , Marta Aznury ¹ , Yuniar ¹ , Sofia ¹ , Ismy Farhan ¹ , Lidia Agustina ¹	76
Flow Rate Effect and NAOH Concentration to CO ₂ Reduction in Biogas Products Using Absorber	77
Lety Trisnaliani ¹ , Dina Eka Pranata ² , Fatria ³ , Tahdid ⁴ , KA Ridwan ⁵ , M. Nurizzman Alfarizi ⁶ , Mangihut Pandapotan Lumbantoruan ⁷	77
Prototype of Tray Dryer Unit for Silica Gel Drying Based on Bagasse	78
Selastia Yulianti ^{1(a)} , Fadarina ¹ , Mustain Zamhari ¹ , and Ibnu Hajar ¹	78
Modification of Starch from Yam Taro with Hydrolysis Acid as The Adhesive	79
Yuniar ^{1,2} , Martha Aznury ¹ , Sofiah ¹ , Meilianti ¹	79
The Performance of Riverse Osmosis (RO) Membrane in Producing Pure Water.....	80
Robert Junaidi ¹ , Abu Hasan ² , dan Muhammad Yerizam ³ , Indah Purnamasarii ⁴	80
Concentrations of Dissolved Oxygen in Drinking Water	81
Erwana Dewi ^{1(a)} , Aisyah Suci N ¹ and Elina M ¹	81
Growth Kinetics of <i>Saccharomyces Cerevisiae</i> and Tape Yeast on the Cassava Pulp Fermentation	82



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



Beni Hidayat, Udin Hasanudin, Muhamad Muslihudin, Syamsu Akmal, Siti Nurdjanah, Neti Yuliana	82
Distillation of Patchouli Oil Using Firewood and Liquefied Petroleum Gas as Fuel: Effects of Yield, Quality and Cost Analyses.....	83
Mahlinda and M. Dani Supardan	83
Evaluation of Main Parameter Process of Anaerobic Digestion of Cow Dung in Fixed Dome Biogester on Methane Gas Quality	84
Leila Kalsum, Abu Hasan, Rusdianasari, A.Husaini Yohandri Bow	84
Re-Design Pyrolysis Reactor Prototype for The Conversion of Plastic Waste into Liquid Fuel.....	85
Arizal Aswan, IrawanRusnadi, Fatria, Zurohaina, Rima Daniar	85
Value Added Analysis of Beef Floss with Fillers of Papaya Fruits And Banana Blossom's.....	86
Sri handayani, Chandra utami wirawati, Saroni saroni, Dwi eva nirmagustina.....	86
Marketing Efficiency of Organic Rice in Lampung Province	87
Sri Handayani, Dwi Eva Nirmagustina, Muhammad Irfan Affandi.....	87
Simple design of pyrolysis tool for making liquid smoke from shells and rubber seeds as a food preservative	88
Farida Ali, ¹ Roval Al Fiqri ²	88
Industrial Mapping in Java-Kalimantan-Nusa Tenggara Corridor	89
M A Berawi ¹ , P Miraj ^{2,3} , H Sidqi ² , G R Gaffara ^{2,4} and Gunawan ²	89
Revenue Analysis of Port-City Conceptual Design	90
M A Berawi ¹ , P Miraj ^{2,3} , E R Islamiah ² , and Gunawan ²	90
The Utilization of Plastics Waste in Flexible Pavement Hot Rolled Sheet and Asphalt Concrete Wearing Course With Marshall Immersion and Cantabro Test.....	91
Adhitya B B ¹ , Pataras M ² , and Kadarsa E ³	91
Characteristics Comparison of Refinery Asphalt, Rubberized Asphalt, and Buton Asphalt in Stone Matrix Asphalt Pavement with Marshall and Cantabro Method.....	92
Kurnia A Y ¹ , Dewi R ² , Permata D Y ³ , and Pataras M ⁴	92
The Effect of Polycarboxylate Addition towards The Workability and High Strength Concrete	93
Sumiati ¹ , Mahmuda ² , Andi Herius ³ dan Agus Subrianto ⁴	93



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference



Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918

Stabilization of Peat Soils Using Petrasoil with Cement Viewed from CBR Value and Free Compressive Strength Value of Soils	94
Ibrahim, S.T.,M.T. ¹ , Andi Herius, S.T.,M.T. ² , Julian Fikri, S.S.T., M.Sc. ³ , M. Shaid Ramadhinata ⁴ , Maryani ⁵	94
The Utilization of Crushed Clay Brick as Coarse Aggregate on Eco-Green Lightweight Foamed Concrete.....	95
Sumiati ¹ , Mahmuda ² , Sukarman ³ , Siswa Indra ⁴ , and Darma prabudi ⁵	95
Performance analysis of Patal - Pusri Intersections after underpass operated	96
Arfan Hasan ¹ , Indrayani ¹ , Ridho Adrian ¹ , Dwiki Syamanda ¹ , Darma Budi ¹ , and Akhmad Mirza ¹	96
Utilization of Coconut Shells as a Replacement of Some Coral Stone in Concrete Making	97
Raja Marpaung, Kosim, Zainuddin, Darma Prabudi	97
Public Transportation Service Bus Rapid Transit (BRT) Trans Musi Sustainable in Palembang City.....	98
A. Latif, Yusri, Moch.Absor, A. Fuad Z.	98
Transportation Needed of Bus Rapid Transit (BRT) Corridor in Palembang	99
Herlinawati, Puryanto, Sudarmadji, Sazili	99
Effect of Groundwater Table on Slope Stability and Design of Retaining Wall	100
R Ahmad ^{1*} , A B Mardhanie ¹ , P Suroso ¹ , T E Sutarto ¹ and R Alfajri ²	100
Falisa ^{1*} , Hendri Chandra ^{2*} , Harnani ^{3*}	108
^{1,3} Teknik Geologi, Universitas Sriwijaya, Indralaya.....	108
² Teknik Mesin, Universitas Sriwijaya, Indralaya	108
* <i>Corresponding author</i> : falisa@unsri.ac.id.....	108
Information System of Small And Medium Business in Palembang City	112
Hetty Meileni, Cindy Indah Pratiwi, Ienda Meiriska, and Desi Apriyanty	112
Inventory of Goods Data Processing Using The Economic Order Quantity (EOQ) Method	113
Hetty Meileni, Diky Juniansyah Putra, Desi Apriyanti, Indra Satriadi, Sony Oktapriandi	113
Internet of Thing for the Command Robot Command System.....	114
Emilia Hesti ¹ , Sholihin ² , Adewasti ³ , Sarjana ⁴	114
The Effect Of Addition Of High Density Poly Ethylene (Hdpe) As Binder On Hebel Light Brick (Celcon)	115



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Sriwijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



The Effect Of Addition Of High Density Poly Ethylene (Hdpe) As Binder On Hebel Light Brick (Celcon)	116
Implementation of Fingerprint Control in Majors Electrical Engineering Using Arduino.....	117
Ibnu Ziad ¹⁾ , Ali Nudin ²⁾ , Jon Endri ³⁾ , Ciksadan ⁴⁾	117
Biodiesel Production From Bintaro (Cerbera Manghas L) Seeds With Potassium Hydroxide As Catalyst	118
The Copper Fiber On Compressive Strength And Elastic Modulus On Concrete Fc'25	119
Information System Feature Development Of Telecommunications Engineering Study Program To Support The New Accreditation And The New Curriculum System.....	120
Grip Tool Cnc Mill 3a To Get 12 Sides Of The Elbow On Results Induction Electrical Furnance Casting	121
Implementation Of Parking Portal Door Security System Using Rfid And Password Based On Microcontrollers In Sriwijaya State Polytechnic	122
Technique Automatic For Detection And Segmentation Of Optic Disc Area In Retinal Image	125
Erwin ¹ , B Cania ² , I K Larasati ³	125
New Techniques For Segmentation And Extraction Retinal Blood Vessels.....	126
Erwin, A Rohman, L A Nurjanah, Yurika, D Sinta, Q Al'afwa	126
Optimization of City Bus Routes in Surabaya Using Memetic Algorithm as a Solution to Solve Orienteering Problem	127
Fauzi Rakhmad Firdausi, Arif Djunaidy, Ahmad Muklason	127
A Form of Preprocessing For Social Media Data Extraction	128
Dodo Zaenal Abidin, Siti Nurmaini, Reza Firsandaya Malik, Jasmir Jasmir	128
Factors Affecting Knowledge Sharing Capability of Doctors in Palembang.....	129
Nining Ariati, Dana Indra Sensuse, Putu Wuri Handayani	129
Serious Game Supply Chain Management Agribusiness as a Production Planning using Cournot Model.....	130
Saiful Bukhori	130
Smart Cup for Visual Impaired People Based on Arduino	132
Aryanti Aryanti ¹² , Lin Wei-cong ¹ , Lin chih-yi ¹ , Billy Brian Henriquez ⁴ , Ikhtison Mekongga ³ , Aaron Raymond See ^{1*}	132
Challenges of Teaching in Massive Open Online Course	133



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



M A Ahmad ¹ , A R C Hussin, H M Dahlan ¹ , J Mahmood	133
Analysis of Service Oriented Architecture and Enterprise Architecture Alignment for Loan Financing System.....	134
Ahmad Nurul Fajar	134
Analysis of Service Oriented Architecture and Enterprise Architecture Alignment for Loan Financing System.....	135
Ahmad Nurul Fajar	135
Analysis of Server Virtualization Service Performance Using Citrix Xenserver”	136
Surahmat, Alfred Tenggono	136
The Pattern of The Marketing Ground Coffee Beans Using Decision Support System	137
Suparto Darudiato, Eliando Eliando	137
The Pattern of The Marketing Ground Coffee Beans Using Decision Support System	138
Suparto Darudiato, Eliando Eliando.....	138
The Utilization of Ontology in Association Rule.....	139
Dewi Wardani, Achmad Khusyaini	139
The Evaluation of Semantic Mapping	140
Dewi Wardani ¹	140
Measurement of User Satisfaction Level on Implementation of SISKEUDES Application	141
¹ Mardiana and ² Eka Hartati	141
Garbage Collector Robot (GACOBOT) Design for Dry Waste Distribution.....	142
Aditya P. P. Prasetyo, Rendyansyah, Sri Desy Siswanti, Siti Nurmaini, Abdurahman.....	142
Use of Haversine Formula in Finding Distance Between Temporary Shelter and Waste End Processing Sites.....	143
Rezania Agramanisti Azdy, Febriyanti Darnis.....	143
Geographic Information Systems Search Test Location For Admission Of New Students In Sriwijaya State Polytechnic Using Location Based Service (LBS) Method.....	144
Book Catalog Information System in The Reading Room (Library) Web-Based at Informatics Management Department in State Polytechnic of Sriwijaya.....	145
Henny Madora ¹ , Yusniarti ² , Ida Wahyunigrum ³ , Muhammad Noval ⁴	145
Pull-down Fitness Technique Analysis using Motion Capture	146



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Sriwijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



R Passarella, A S Nugroho, and F N Arsyad	146
Analysis of EDFAT Methods in Photography Techniques	147
Meiyi Darlies, Ema Laila, Ali Firdaus, Muhamad Erwin.....	147
Predicting Cost Recovery Rate of Ischemic Stroke Patients: A Potential Application of Big Data Analysis in Hospital	148
^{1*} Heru Fahlevi, ² Teuku Roli Ilhamsyah Putra and ³ Rina Suryani Oktari.....	148
Development Analysis For Numbers And Colors Learning Media	149
Yesi Sriyeni and Maria Veronica.....	149
Animation Design as an Educational Media of Adolescents’ Social Behavior Deviation” has been accepted with major revision	150
Heki Aprianto and Alan Saputro	150
Designing Mobile Based User Interface for Promotion of Lakeur Craft Art Application at Balaputra Dewa State Museum.....	151
Syahrul, Pertiwi	151
Prototype of RFID –Based Parking Slot Availability Detection System	152
Lindawati ¹ , I Salamah ¹ , Asriyadi ¹ , M Fadhli ¹	152
Mobile Robot Motion Control Based on Static Hand Gesture.....	153
DS Sri , FP Rian , Z Ahmad	153
Object-Based Design and Modeling Batik Nusantara Catalog Wibatara.com	154
Adelin Adelin, Febria Sri Handayani.....	154
Genetic Algorithm Based Feature Selection With Ensemble Methods For Student Academic Performance Prediction	155
Al Farissi, Halina Mohamed Dahlan, Samsuryadi.....	155
Information System Strategy Planning In The Private Universities Of South Sumatera.....	156
Engine Replacement Scheduling Optimization Using Data Mining	158
Farizal1 and Albert Joelian	158
User Experience Analysis on Class I LPKA Palembang Filial E-School	159
D. Tri Octafian, Febrianty, Hendra Hadiwijaya	159
Information System of Student’s Final Report And Final Assignment At State Polytechnic of Sriwijaya with Android Based.....	160



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Sriwijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



Rika Sadariawati, A. Ari Gunawan, Meivi Kusnandar.....	160
Design of Semester Exam Scheduling at The State Polytechnic of Sriwijaya Application	161
Nita Novita, M. Aris Ganiardi, Indri Ariyanti, Delta Khairunnisa.....	161
Augmented Reality in the Registration Flow for Entrance Examination at State Polytechnic of Sriwijaya Based on Android	162
Rike Sucihati,Ahmad Bahri Joni Malyan, Ervi Cofriyanti	162
Design and Build Application of Campus Parking Area for State Polytechnic of Sriwijaya Based on Smartphone	163
Leni Novianti, Devi Sartika , Dewi Irmawati, Ienda Meiriska	163
Implementation of Biometric Fingerprint Barbasis Security Doors with Attendance Database on Sriwijaya State Polytechnic	164
A.Bahri Joni M , Herlambang Saputra , Ahyar Supani , Indarto	164
Designing and Applying Flood Early Warning System with Fuzzy Logic Based on Rainfall and Water Level for Special of Palembang City	165
Ahyar Supani, Yuli Adriani.....	165
Performance of RUS and SMOTE Method on Twitter Spam Data Using Random Forest.....	166
Huda Ubaya and Ria Siti Juairiah	166
Mobile Android Based Geographic Information System (GIS) Software Development for Tourist Destination Seekers in Palembang City Using RASCH Model Measurements.....	167
Sanjaya, Kurniawan, Saputra, Azhar	167
GIS Android Mobile Based Software Development for Tourism Objects, Public Places List, Transportations List, and Culinary Places List Using Usability Measurement	168
M. Rudi Sanjaya, Dedy Kurniawan, Ariansyah Saputra, Iman Saladin B Azhar	168
TRACK 3	172
MANAGEMENT ECONOMICS, BUSINESS ADMINISTRATION, ACCOUNTING	172
Impact of Learning, Socialization and Financial Lifestyle on Student' Intention to Invest in Capital Market.....	172
Dewi Fadila, Hendra Satrawinata, Mariskha Z, Riska Maulana.....	172
The Effect Of Capital Readiness And E-Commerce Utilization On The Competitiveness Of Micro Small And Medium Enterprises (Msmes) Woven Palembang.....	173
Dimensions of Village Expenditure in Development Sector	174



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



Zulkifli Zulkifli, Rita Martini, Sukmini Hartati, Endah Widyastuti.....	174
Comparison Analysis of Organic Rice and an Organic Rice Added Value Approach.....	175
Dwi Eva Nirmagustina, Sri Handayani and Luluk Irawati	175
Analysis of Political Connection, Profitability and Capital Intensity Against Tax Avoidance in Coal Companies on The Indonesia Stock Exchange.....	176
Rizki Fitri Amalia.....	176
Human Resource Role and Application of Technology in the Fourth Industrial Revolution	177
Relationship Model among Employee Engagement, Organizational Commitment and Employee Performance	178
Munparidi, L.Suhairi Hazizma & A.Jalaludin Sayuti.....	178
The Effect of Customer Orientation and Service Quality on Trust and Customer Loyalty	179
Gst Ayu Oka Widarti, Esya Alhadi, Elvia Zahara, Titi Andriani.....	179
Fetty Maretha, Yulia Pebrianti, Rini, Lisnini.....	180
E-government Policy, Leadership Commitment, Apparatus Resources Development, and Their Implications on Public Service Performance.....	181
Koesharijadi, Hardiyansyah and Muhamad Akbar.....	181
Industrial Clasterization to Improve The Competitiveness of Small and Medium Industries in The City of Palembang	182
Evada Dewata, Yuli Antina Aryani, Yuliana Sari, Aladin	182
The Influence Of Competence, Leadership, Motivation Work Impact On The Commitment Of Civil State Apparatus In The Office Of The Governor South Sumatera Province	183
Sopian.A.R, Periansya, Ardiyan Natoen, Indra Satriawan.....	183
Analysis Method Economic Value Added (EVA) of Cosmetics Companies Listed on the Stock Exchange Period 2013-2017.....	184
Lupikawaty, Alhamdari, Bustan	184
Anggeraini Oktarida, Eka Jumarni Fithri, Lambok Vera Riama, Sri Hartati	185
The Effect of Hospital Image And Service Quality on Customer Loyalty Through Customer Satisfaction as Intervening Variables in Siti Khadijah Hospital in Palembang City.....	186
Susi Ardiani, Sarikadarwati, Henny Yulsiati, Sandrayati.....	186
The Impact of Village Fund Program Implementation towards Society Welfare in Indonesia	187



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Sriwijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



Yevi Dwitayanti, Maria Maria, Nurhasanah Nurhasanah, Rosy Armaini	187
Determinants of Village Financial Management Accountability (Study of Villages in Pampangan Sub-District, OKI Regency and Rambutan Sub-District, Banyuasin Regency)	188
Desi Indriasari, Kartika Rachma Sari, Kiagus Zainal Arifin, Choiruddin	188
Evaluation of Sales Price within Calculation Cost of Good Production SMEs Pempek Ilir Barat I and Bukit Kecil District Palembang	189
Elisa, Marieska Lupikawaty, Yusleli Herawati, Purwati.....	189
The Effect of Taxpayer Awareness and Tax Sanctions on Compliance In Paying Land And Building Taxes in Bukit Kecil Sub-District of Palembang.....	190
M. Husni Mubarak, Faridah, Nelly Masnila.....	190
The Environmental Compliance Management of Palm Oil Plantation in Ogan Komering Ilir Regency, Sumatera Selatan, Indonesia	191
M. Yusuf, Yusnizal Firdaus, Markoni Badri, AlHusori	191
Attitude, Motivation, and Parental Involvement towards Students' Reading Comprehension Achievement	192
Nurul Aryanti, Welly Ardiansyah, Murwani Ujihanti	192
Relationship between GPA, Length of Study, and Competence with The Length of Time to Get A Job at Alumni of The Mathematics and Natural Sciences, University of Sriwijaya.....	193
Ali Amran ¹ , Irmeilyana ¹ * and Anita Desiani ¹	193
Testing the Role of Charismatic Leadership, Psychological Climate, and OCB on Resilience	194
Wustari L. Mangundjaya	194
Individual Readiness For Change and Affective Commitment To Change: The Mediation Effect Of Technology Readiness On Public Sector	195
Hermina Agustina Mahendrati, Wustari Mangundjaya.....	195
Leader-Member Exchange and Affective Commitment to Change: Mediating Role of Change Self-Efficacy	196
Dwi Andriani Puspitasari, Wustari L Mangundjaya.....	196
Testing Mediation of Psychological Empowerment, Work Engagement to Affective Commitment to Change	197
Susilo ¹ , Wustari L. Mangundjaya ²	197
Aim, Concept, and Objectives of Education in Islam	198



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Sriwijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



Suroso ¹ , Wasitoh Meirani ² , Muhammad Erwin ³ , Ayu Puspasari ⁴	198
Testing the Impacts of Organizational Justice on Affective Commitment to Change with Work Engagement as Mediator.....	199
Yurnalis, Wustari Mangundjaya	199
The Effect of Directed Reading - Thinking Activity on Students' Critical Thinking Abilities.....	200
Eliyeny, Herman, Sunani, Muhammad Nadjmuddin	200
The Development of Teaching Material Speaking 2 Based on Communicative Approach for Students in English Department of State Polytechnic of Sriwijaya.....	201
Darmaliana, Risnawati, Risa, Sri Endah Kusmartini.....	201
Exploring Linkage among Experiential Value, Destination Image and Revisit Intention in Natural-based Tourism.....	202
Heri Setiawan, Taufiq Marwa, Zakaria Wahab, Muchsin Sagaf	202
Students' Perception of English Blended Learning in State Polytechnic of Sriwijaya.....	203
Munaja Rahma, Zakaria, Moehammad Ridhwan.....	203
Online Transportation Technology and Women's Driver Communication Skills.....	204
Pridson Mandiangan, Desloehal Djumrianti, Hanifati	204
The Importance of The Language Experience Approach (LEA) in Teaching Reading Comprehension to The Third Semester of Engineering Students in State Polytechnic of Sriwijaya	205
Zulkifli zulkifli, nian evawati, koryati koryati.....	205
The Effect of Organization Climate on Performance with Job Satisfaction as an Intervening Variable	206
Paisal Paisal, Afrizawati Afrizawati, Divianto Divianto, Yahya	206
The Clustering of Paddy Fields in The Province of South Sumatera as an Input for The Government in Determining Policy.....	207
Suryati, Ahmad Sanmorino	207
The Public Service Quality of The Library Services at The Library Unit of State Polytechnic of Sriwijaya	208
Deri Darfin, Zulkarnaini, Ridwan Effendi, Robinson,.....	208
The Effectiveness of Blended Learning Approach on Essay Writing Subject.....	209
Sri Gustiani, Yusri, Tiur Simanjuntak, Evi Agustinasari.....	209



The 3rd FIRST 2019
(FORUM IN RESEARCH, SCIENCE, AND TECHNOLOGY)
International Conference

Jl. Srijaya Negara Bukit Besar Palembang 30139 South Sumatera – Indonesia
phone +62711 353414 Fax: +62711 355918



Analysis of Student Services at State Polytechnic of Sriwijaya	210
Hadi Winarko, Zaliah, Aimi.....	210
The Effect of Culinary Knowledge and Culinary Experience on Local Culinary Attractiveness.....	211
Heri Setiawan ¹ , Abd. Hamid ² , Ummasyroh ³ & Jusmawi Bustan ⁴	211
Criminal Law Policy In The Crime Of Persecution Carried Out By People Who Come From Outside Orang Rimba Group Against Members Of Orang Rimba Tribe Around The Bukit Duabelas National Park, Jambi Province, Indonesia	212

The Performance of Reverse Osmosis (RO) Membrane in Producing Pure Water

Robert Junaidi¹⁾, Abu Hasan²⁾, dan Muhammad Yerizam³⁾, Indah Purnamasari⁴⁾

^{1&4} teaching staf of Bachelor Degree (D IV) Chemical Engineering
State Polytechnic of Sriwijaya

^{2&3}teaching staff of Master of Applied Renewable Energy Technique of
State Polytechnic of Sriwijaya
robert.junaidi@polsri.ac.id

Abstract. This research was conducted to determine the performance of Reverse Osmosis (RO) membranes in producing pure water, pure water known as mineral-free water or water with zero dissolved solids (TDS = 0 ppm). PDAM (Regional Drinking Water Company) Tirta Musi in Palembang, South Sumatra and water from the Micro Filtration (MF) and Ultrafiltration (UF) processes are fed to the RO process using two feeding methods, namely a single pass and a circulation feed. In a single pass feed, the operating pressure is set at 20 - 50 Psig, where an increase in the product rate and the rejection rate so that the flux increases.

Rejection of TDS obtained increased from 96.6% - 97.5%. Furthermore, the circulating feed system with a constant pressure of 50 Psig decreases TDS and Conductivity. Rejection of TDS 96.1% for PDAM water feed and Rejection of TDS for feed water from MF&UF 97.3% in subsequent feedings there was a decrease in TDS and conductivity but not significantly. The purified water produced has a TDS content of 0.16 - 0.48 ppm, a conductivity of 0.17 - 0.49 $\mu\text{s} / \text{cm}$, a pH of 6.99 - 7.2 and a resistivity of 177 - 185 $\text{k}\Omega$, the characteristics of this pure water are according to the standard pure water in ASTM D1193 - 99e1 and NCCLS.

Key words : Pure water, Reverse osmosis, Rejection, single pass and circulation feed

1. Introduction.

Pure water is water that is processed so that it is free of ions or minerals contained in it. Pure water is known as Aquadest and Aquabidest also known as demineralized water, deion water, or distillate water according to the method of its manufacture. Pure water is often called TDS 0 water, which is widely recommended for cosmetic factories, food industries, hospitals and laboratory purposes. Pure water / Aquadest is often used as a thinner or solvent for chemicals, as a reagent, cleaning glassware / laboratory equipment. In the steel processing industry: Aquades are widely used as coolants for steel cutting machines, such as Wire Cut, and others that require water for cooling, with Aquadest / pure water it will inhibit scale and lichens. Aquades can also be used as battery water [1].



The process to remove minerals in water can be done in several ways, namely with ion exchange resins (IE), electrodialysis, membrane transfer distillation, flash evaporation, and reverse osmosis (RO) [2-3], the process can be done individually; Ion Exchange [4] and also with combined processes such as a combination of Microfiltration (MF) and IE [5], heat process and RO process [4]. RO is able to reduce conductivity and TDS reaches 81% and 82%, even the conductivity and TDS of water produced can reach $0 \mu\text{S} / \text{cm}$, $0 \text{ mg} / \text{l TDS}$ [5].

The application of RO in the water treatment and desalination process is very widely used today [6]. RO process can be used to overcome the problem of water in areas where the source of water is sea water or brackish water [7-9], processing brackish water into clean water using a reverse osmosis membrane [10], taking back water from wastewater [11] Reverse Osmosis for reduce the salinity of raw water [12]. RO processes are preferred over thermal processes [8]. The advantage of reverse osmosis membrane technology is its speed in producing water [9], RO method can reduce costs [13].

In the research process the RO is applied to obtain pure water, the water used is sourced from PDAM Tirta Musi Palembang South Sumatra water and water from MF and UF products. RO performance can be seen from the method of feeding, the water feed is processed one way (single pass) and the feed process is in circulation.

2. Material and Methods

There are two types of feed water in the RO process; firstly the water sourced from the PDAM taken at the Posri Chemical Engineering Laboratory, secondly the water produced from the MF and UF processes. The MF membrane of the Watertech product used is $0.1 \mu\text{m}$, $0.3 \mu\text{m}$, $0.5 \mu\text{m}$, while UF is $0.01 \mu\text{m}$ and CSM type RO membrane is $0,0001 \mu\text{m}$.

Feed water used in the form of PDAM water and water produced by MF and UF, both of which are fed to the RO membrane with two types of feed, the first feed is processed once through a single pass at a pressure of 20-50 psi, the second type of feed is by The method of repetitive circulation is the result of a single pass being re-fed three times. Feed water and products produced from each process are analyzed using Waterproof Instruments. The parameters measured are conductivity, TDS, pH, and resistivity.

3. Results and Discussion

Table 1 data is the result of parameter analysis on RO feed for single pass feed type, this water contains TDS of 8.15 ppm, pH of 6.98, conductivity of $8.16 \mu\text{S} / \text{cm}$, and Resistivity of $6.143 \text{ k}\Omega$. Whereas in Table 2 the water results from microfiltration (MF) and ultrafiltration (UF) processes.

Table 1. Feed Water Analysis for a single pass Process

TDS (ppm)	Conductivity ($\mu\text{S}/\text{cm}$)	Resistivity ($\text{k}\Omega$)	pH
8,15	8,16	6,143	6,98

Water that is fed by circulation can be seen in Table 2. There are two types of water, namely PDAM water and water produced by the MF and UF process which are fed by recirculation. PDAM water content of TDS is 12.33 ppm and the conductivity is $12.3 \mu\text{S} / \text{cm}$, while the results of MF and UF of TDS and Conductivity are 8.21 ppm and $8.2 \mu\text{S} / \text{cm}$, and the pH of the two is almost the same 7.01 and 7, 04.

Table 2. Feed Water Analysis for the circulation process

Feed Water	TDS (ppm)	Conductivity ($\mu\text{S}/\text{cm}$)	Resistivity ($\text{k}\Omega$)	pH
MF&UF	8,21	8,2	6,094	7,04
PDAM	12,33	12.3	4,407	7,01

The performance of the RO process is determined by the ability of this membrane to reduce TDS, namely the concentration of dissolved solids and their conductivity which also shows the number of ions dissolved in water. Furthermore, the ability of the membrane is also determined from the rate of product produced by the unity of membrane area known as Flux.

In a one-way or single pass feed process with TDS and Conductivity as shown in Table 1, the resulting flux and rejection rates can be seen as shown in Figure 1. The product rate, rejection rate and flux will increase with increasing operating pressure, the product rate rises from 7.837 L / h at a pressure of 20 psig to 19,011 L / h at a pressure of 50 psig. Flux is obtained by dividing the rate of product by area of membrane.

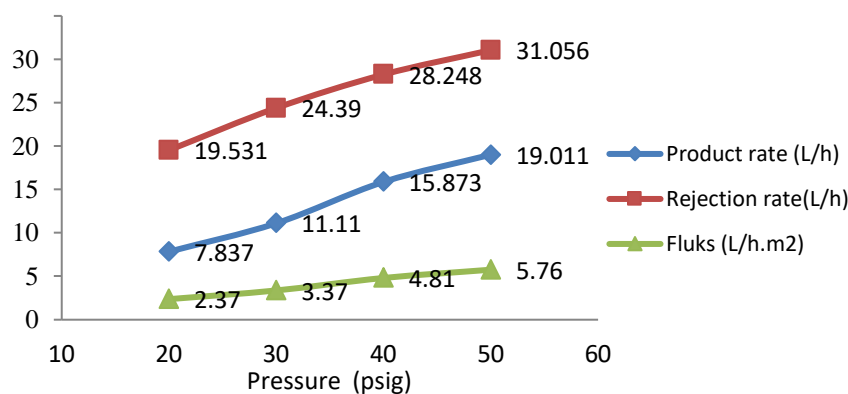


Figure 1. Fluxes and Rejection data on Reverse Osmosis (RO)

Rejection rate is greater when compared to the product rate, this is due to the compacting and polarization that occurs on the membrane surface [10-12]. Meanwhile Rejection to TDS increases with increasing operating pressure [10] starting from 96.6% at a pressure of 20 Psig and rising to 97.5% at a pressure of 50 Psig as shown in Figure 2.

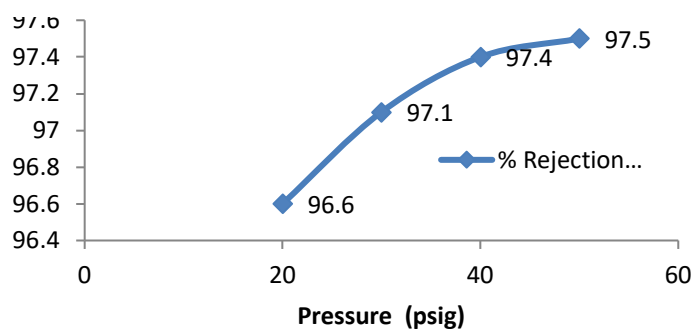


Figure 2. The Effects of Pressure on Rejection

In Table 3, it can be seen that the rate of pure water production rises with increasing pressure as well as in Table 4 the rejection rate increases with increasing pressure, TDS and conductivity also increases while resistivity decreases with increasing pressure due to increasing ions in the rejection flow [10-11].

Table 3. Product characteristics Analisis on RO

Pressure (psig)	Product rate (L/h)	TDS (ppm)	Conductivity ($\mu\text{S/cm}$)	Resistivity ($\text{k}\Omega$)	pH
20	7,837	0,28	0,28	161,5	7,01
30	11,11	0,24	0,24	185,3	7,01
40	15,873	0,22	0,23	194	7
50	19,011	0,21	0,22	201,1	7

In Table 3 above the quality of pure water produced is good enough with an average TDS content of 0.2375 ppm, with an average conductivity of 0.2325 $\mu\text{S/cm}$ of pH 7.0 and a resistivity of 185.475 $\text{k}\Omega$ is in accordance with the requirements ASTM and NCCLS standards [14].

Table 4. Rejection Analisis on Reverse Osmosis Procces

Pressure (psig)	Rejection rate (L/h)	TDS (ppm)	Conductivity ($\mu\text{S/cm}$)	Resistivity ($\text{k}\Omega$)	pH
20	19,531	11,42	11,44	4,37	7,01
30	24,39	12,01	11,9	4,164	7
40	28,248	12,77	12,68	3,915	6,99
50	31,056	13,1	13,11	3,832	7,01

The following Table 5 shows the characteristics of the products produced from two types of feed water and two types of feed systems on RO membranes. Rejection of TDS for PDAM water feed and water resulting from MF and UF of 96.10% and 97.31% on a single pass, then if the pure water is fed back to RO repeatedly (in circulation up to 3 times) the TDS content for both feed water continues to decrease until its TDS of 0.18 ppm for PDAM water feed and 0.16 ppm for MF&UF product water.

Table 5. Product characteristics and method of Feeding on Reverse Osmosis (RO)

Parameter	Unit	PDAM Water Feed					MF&UF Water Feed				
		Before	After	Circulated Product			Before	After	Circulated Product		
		Process	Single pass	1 time	2 time	3 time	Process	Single pass	1 time	2 time	3 time
Conductivity	$\mu\text{S/cm}$	12,3	0,49	0,39	0,23	0,18	8,21	0,22	0,22	0,17	0,17
TDS	ppm	12,33	0,48	0,4	0,22	0,19	8,2	0,22	0,21	0,17	0,16
Resistivity	$\text{k}\Omega$	4,047	86,81	109,8	192,8	234,3	6,094	200	217,7	267,9	278,9
pH	pH	7,01	7,2	7,03	7,03	7,01	7,04	7,04	7,03	7	7,01
NaCl	ppm	121,5	15,86	15,05	13,85	13,67	82,45	13,83	13,71	13,64	13,56

The quality of the pure water product produced is also getting better if the RO product produced continuously in circulation will reduce TDS and conductivity and likewise the salt content is equivalent to NaCl down, while the resistivity rises and the average pH 7.

Pure water / Aquadest is water that is free of impurities, water with zero clear TDS, is odorless, and has no taste, has the ability to dissolve many substances, so it is known as a universal solvent. From the Table of pure water produced from this study has a TDS of 0.16 - 0.48 ppm, a conductivity of 0.17 - 0.49 $\mu\text{S/cm}$, a pH of 6.99 - 7.2 and a resistivity of 177-185 $\text{k}\Omega$, characteristic of pure water This meets ASTM D1193 - 99e1 and NCCLS standards.

Tabel 6. ASTM D1193-91e1 *Standard Specification for Reagent Water*

Parameter	Type	Type	Type	Type
	I	II	III	IV
Electrical Conducti.. Max. ($\mu\text{S/cm}$ at 25°C)	0,056	1,0	4,0	5,0
Electrical Resistivity ($\text{M}\Omega\cdot\text{cm}$ at 25°C)	18,2	1,0	0,25	0,2
pH at 25°C	-	-	-	5,0 - 8,0
TOC max. ($\mu\text{g/L}$)	10	50	200	n/a
Sodium max. ($\mu\text{g/L}$)	1	5	10	50
Total Silica max. ($\mu\text{g/L}$)	3	3	500	n/a
Chlorides max. ($\mu\text{g/L}$)	1	5	10	50
Endotoxins IU/ml	< 0.03	< 0.25	-	-

<https://puretecwater.com/downloads/water-quality-standards.pdf> 27 /08/2019

Tabel 7. *National Committee for Clinical Laboratory Standards (NCCLS)*

Parameter	Type I	Type II	Type III
Bacteria (CFU/ml)	< 10	< 1000	NA
Ph	NA	NA	5,0 - 8,0
Resistivity ($\text{M}\Omega\cdot\text{cm}$ @ 25°C)	> 10*	> 1	> 0,1
Silica (mg/L)	< 0,05	< 0,1	< 1
Total Solids (mg/L)	0,1	1	5
Total Oxidisable Organic Carbon (mg/L)	< 0,05	< 0,2	< 1
Particulate matter	< 0.2 μm		

<https://puretecwater.com/downloads/water-quality-standards.pdf> 27 /08/2019

4. Conclusion

Reverse Osmosis provides rejection of TDS and a large Conductivity value above 96% with a product rate of 7-19 L / h. The method of feeding with circulation can reduce even smaller TDS to even reach

zero TDS if the RO product is continuously fed back to the RO. Pure water produced from RO products meets ASTM D1193-91e1 and NCCLS standards.

5. Acknowledgements

Thanks to the Directorate General of Higher Education Ministry of Technology & Higher Education who has provided research grants, Director of Sriwijaya State Polytechnic, Department of Chemical Engineering Polstri especially Chemical Engineering Laboratory that has helped the implementation of this research

References

- [1] https://www.mataharicourse.com/blog/4126-2_26/9/2019 (Indonesian)
- [2] Montgomery, J.M., 2005, *Water Treatment Principles and Design*. Johan Weley Inc. USA.
- [3] Berne F dan Cordornier J, 1995, “*Industrial Water Treatment*”, Gulf Publishing Company Editions Technip.
- [4] Laila Mustahiqul Falah, Drs. Gunawan, M.Si, Drs. Abdul Haris, M.Si, *Pembuatan Aquadm (Aquademineralized) Dari air AC (Air Conditioner) Menggunakan Resin Kation Dan Anion*’ file:///E:/Air%20murni/mustahiqul.pdf (Indonesian)
- [5] Reni Desmiarti, Munas Martynis, Jeni Novita, Nanda Saputra, “*Kombinasi Proses Filtrasi dan Ion Exchange Secara Kontinu pada Pembuatan Aquadm (Demineralized Water)*” file:///E:/Air%20murni/Desmiarti%20RO&IE.pdf (Indonesian)
- [6] Katie Baransi-Karkaby 1,2,* , Maria Bass 1 and Viatcheslav Freger 1,* “*In Situ Modification of Reverse Osmosis Membrane Elements for Enhanced Removal of Multiple Micropollutants*” www.mdpi.com/journal/membranes
- [7] Wahyu Widayat Pusat Teknologi Lingkungan, Badan Pengkajian dan Penerapan Teknologi (BPPT) “*Aplikasi Teknologi Pengolahan Air Asin Desa Tarupa Kecamatan Takabonete Kabupten Selayar*” file:///E:/Air%20murni/2322-4060-1-SM%20(1).pdf (Indonesian)
- [8] Linda A.Yoshi, I Nyoman Widiasta, “*Sistem Desalinasi Membran Reverse Osmosis (RO) untuk Penyediaan Air Bersih*” file:///E:/Air%20murni/1552-4154-1-PB.pdf (Indonesian)
- [9] Nusa Idaman Said, ” *Aplikasi Teknologi Osmosis Balik Untuk Memenuhi Kebutuhan Air Minum Di Kawasan Pesisir Atau Pulau Terpencil*” file:///E:/Air%20murni/makalaRO.pdf (Indonesian)
- [10] Etikasari Yusuf – Tuhu Agung Rachmanto – Rudi Laksmono, *Pengolahan Air Payau Menjadi Air Bersih Dengan Menggunakan Membran Reverse Osmosis*, file: ///E: /Air%20murni/ air%20 payau.pdf (Indonesian)
- [11] Virapana , R. Saravananeb , and V Murugaiyanb, 2017, *Treatment of Reverse Osmosis Reject Water from Industries* , International Journal of Applied Environmental Sciences ISSN 0973-6077 Volume 12, Number 3 (2017), pp. 489-503
- [12] Alexei Pervov, Konstantin Tikhonov and Nikolay Makisha, 2018, *Application of reverse osmosis techniques to treat and reuse biologically treated wastewater* , IOP Conf. Series: Materials Science and Engineering 365 (2018)
- [13] Wahyu Widayat, 2007, *JAI Vol. 3, No1 2007*, (Indonesian)
- [14] <https://www.astm.org/Database.Cart/Historical/D1193-99E1.htm> (*American Society for Testing and Materials*)



CERTIFICATE OF APPRECIATION

Present to

ABU HASAN

in recognition & appreciation of the contribution as

CO AUTHOR

FIRST International Conference
"Integration of Advanced Technology to Enhance Social Welfare"
Held On October, 09-10, 2019
The Excelton Hotel Palembang, Indonesia



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



Dr. Rita Martini, S.E., M.Si., Ak., CA.
Chair of the 3rd FIRST 2019

Organized :



Collaborate With :

