



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
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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
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Dr. Maya Fitri Oktarini S.T., M.T., Universitas Sriwijaya, Indonesia
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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

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Aladin SE, M.Si.,Ak ,CA, Politeknik Negeri Sriwijaya, Indonesia

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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

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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.

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Educational background:

1. Training on Tropical Veterinary Parasitology, Institut fuer Parasitologie und Tropische Krankheit, Veterinarmedizinische Fakultät der Freien Universität (FU) Standort Mitte, Berlin, Germany. 1993
2. PhD in Molecular Parasitology (Isolation and characterization of recombinant Variance Surface Glycoprotein Trypanosoma congolense in Escherichia coli), Freie Universität (FU) Berlin, Germany (DAAD Scholarship), 1993-1998
3. Postdoctoral Research Fellowship, Institut fuer Molekularparasitologie der Humboldt Universität 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	Event Section Committee	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	Event Section Committee	08.35 – 09.00		
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	
– Closing Ceremony – Announcement of: 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
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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, Riman 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



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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



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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 Seprianto1, 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, Gebby 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,



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				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 Aft 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 Suhaejji,	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



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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, Anerasari 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



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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, saron saron, 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



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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



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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



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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 Wei-cong, 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



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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



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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



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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



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

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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



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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
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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



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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

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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	Elieny, 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



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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
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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, Meiyl 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



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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
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1799	14.28 – 14.36	Alan Novi Tompunu, Yulian Mirza, and Azwardi	Room Door Security System Using Microcontroller-Based E-KTP	Polsri



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Evaluation of Main Parameter Process of Anaerobic Digestion of Cow Dung in Fixed Dome Biodigester on Methane Gas Quality

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Evaluation of Main Parameter Process of Anaerobic Digestion of Cow Dung in Fixed Dome Biodigester on Methane Gas Quality

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Abstract. Methane gas produced from anaerobic digestion has been widely studied through some of the researches, but the quality of methane gas produced is still a problem because the concentration of methane gas produced is generally low. Biogas formation is a complex process involving several process parameters that must be controlled such as temperature, pH, and fermentation time. Therefore the use of biogas is still problems and it has not been widely used. This study aimed to evaluate the main parameter process of anaerobic digestion of cow dung in fixed dome biodigester on methane gas quality. The research was carried out for 30 days and every 5 days the quality of methane gas (CH₄), organic content (COD) and total solids (TSS) were analyzed. From the results of the study, it was found that temperature, pH, and fermentation time greatly effect on biogas produced. at high methane gas concentrations (59,12%) occur at pH 7.1, temperatures 35°C and fermentation time of 25 days. Besides that the longer the fermentation time, the COD and TSS content decreases and the concentration of methane gas increases.

Keyword: Organic content, total solid content, biogas, gas methane, cow dung

1. Introduction

Waste material including biowaste is a product that cannot be avoided from human activities. Various techniques have been used to manage and reduce the amount of biomass. Some technologies such as gasification, pyrolysis, incineration and land filling are among the most widely used in various countries to convert solid waste such into energy, but there are still effects on the environment that are difficult to avoid [1].

Anaerobic digestion is a biochemical process in which several groups of microorganisms degrade organic matter into a mixture of gases that mainly consists of methane gas and carbon dioxide called biogas in an oxygen-free environment. Anaerobic digestion is usually used for animal dung



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management for two reasons where emissions of methane related to the atmosphere will be reduced. Anaerobic digestion consists of four stages [2]:

- (1).Hydrolysis: In this step serves the purpose rendering organic macromolecules into its smaller components (carbohydrates, fats, and proteins) into monomers (sugars, long chain fatty acids, and amino acids);
- (2).Acidogenesis: In this step, the dissolved compounds present in cells of fermentative bacteria convert simple monomers into volatile fatty acids (VFAs), alcohols, lactic acid, CO_2 , H_2 , NH_3 , and H_2S ;
- (3).Acetogenesis (intermediary acid production): In this step, digestion products (higher volatile fatty acids) are transformed into acetate, H_2 , and CO_2 , as well as new cell material;
- (4).Methanogenesis: In this stage, acetate, hydrogen plus carbonate, formate or methanol are converted into methane, CO_2 and new cell material.

According to [1], anaerobic digestion are conducted by various groups of microorganisms. Complex organic compounds are first hydrolyzed through enzymatic reactions to monomers, such as glucose, amino acids, and long chain fatty acids (LCFAs), and they are subsequently converted in the acidogenic pathway to volatile fatty acids, H_2 , and acetic acid. During the metabolic pathway of β oxidation, LCFAs break down in multiple stages to H_2 . The acetogenic bacteria convert volatile fatty acids to H_2 , CO_2 , and acetic acid in acetogenesis stage. In homoacetogenesis, hydrogen is used to reduce carbon dioxide to acetate. In the last, methanogens convert H_2 , CO_2 , and acetate to CH_4 and CO_2 . These pathways are shown in Figure 1.

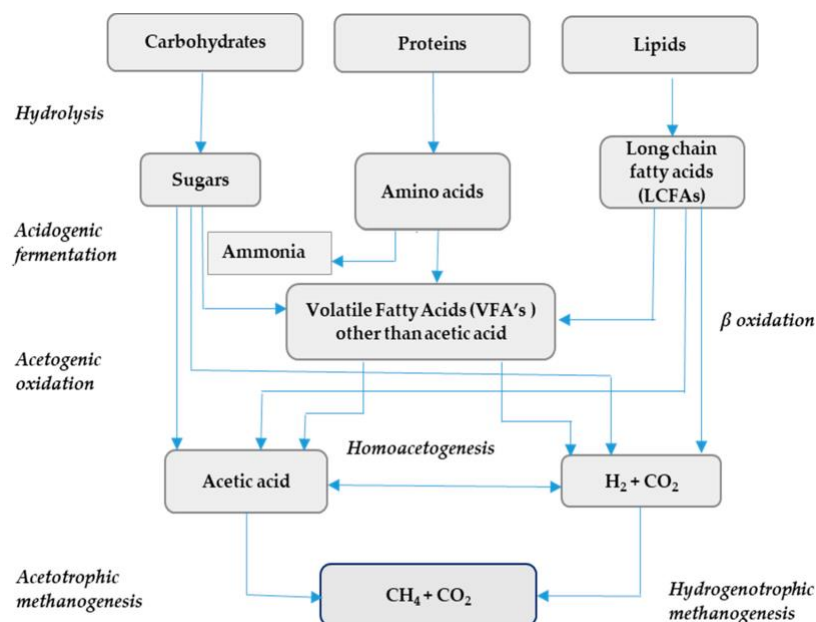


Figure 1. Pathway of anaerobic digestion for biomethane production

Global energy supply is still very dependent on fossil fuel sources such as crude oil, coal and natural gas. The fuel source is non-renewable and is limited because it cannot be renewed. To cope with

the depletion of the world fossil fuel reserves, efforts are needed to diversify energy sources. The excessive use of fossil fuels has an impact on the environment because it causes CO₂ emissions of greenhouse gases into the air. One source of energy that can be renewed and can be used for gas fuel is biomass. There are many of biomass that can be utilized as biogas including livestock waste such as cow dung. Utilization of cow dung into biogas is also one of the solutions to sanitation and environmental health problems, especially around the livestock area [3]. By processing organic waste such as cow dung into biogas, uncontrolled methane gas emissions from anaerobic decomposition can be avoided. Methane is about 21 times more powerful at warming the atmosphere than CO₂ and Methane chemical lifetime in the atmosphere is approximately 12 years, compared with approximately 100 years for CO₂ [4].

According to [5], biogas technology is not a new technology in Indonesia, but until now there has not been an encouraging development. The use of biogas as a source of energy so far has been aimed at people who have not yet received adequate fossil energy services such as far from urban areas and in an area where people have a cow so they need to use cow dung into energy. The use of biogas as an energy source has good potential because of the abundant amount of raw materials and energy needs that also continue to increase. The composition of biogas produced in a biodigester varies depend on feedstock types, even though it usually contains CH₄ 50 - 75% , CO₂ 25 - 45%, H₂ <1%, O₂ < 2%, N₂ < 2, water vapor 2-7% and H₂S <1% [6].

To produce biogas from cow dung a biodigester that needs a well-controlled process such as temperature, pH, fermentation time and substrate conditions of biogas feedstock must meet a C/N ratio between 10-30 [6]. Based on [7] The environmental factors that are important in the process of anaerobic digestion include temperature, pH, buffering systems, retention time, process configuration, solubility of gas, availability of nutrient and the presence of toxic component in the process. In the present study temperature, pH, time of fermentasi has been investigated for 30 days in fixed dome biodigester using cow dung as substrat and evaluated methane gas production. COD and TSS controlled during the process.

2. Research Methods

The study was conducted in fixed dome biodigester as the principles reactor as shown in Fig.2 The capacity of the biodigester was 500 liters. Biodigester was equipped with inlet, outlet, temperatur control, pH control, pressure control and gas holder.

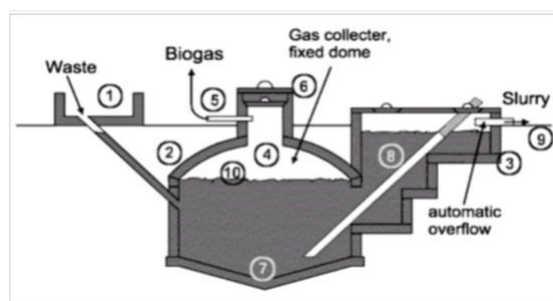


Figure 2. Principles of Fixed Dome Biodigester

Cow dung samples were collected from cattle farm in Palembang city. The cow dung was blended with water at the ratio 1:2 and loaded to biodigester. Before cow dung is feed into a biodigester, the raw material analyzed includes pH, temperature, COD, TSS, Nitrogen and water content. C/N ratio of raw material was setting at 25:1 that it was commonly used as characterization of nutrients. Anaerobic digestion process was carried out for 30 days. In the period of five days, an analysis of pH, temperature, COD, TSS and biogas composition was analyzed. The effective biodigester volume used is 80% of the total volume and the remaining space is 20% for biogas space.

Laboratory equipment used in this study includes COD refluxes, ovens, furnaces, porcelain cups, pH meters, and gas chromatography (GC). While the materials used are cow dung, water, $K_2Cr_2O_7$, H_2SO_4 , FAS, $HgSO_4$, $AgSO_4$, NaOH, HCL, K_2SO_4 , boric acid, and HgO. Parameter analyzed were COD and TSS according to SNI methods. COD using SNI method No:06-6989.15.2004 and TSS using SNI method No: 06-6989.3.2004. Biogas composition is measured using Gas Chromatography (GC) equipment.

3.Result and Discussion

3.1 The Main Parameter in Anaerobic Digestion

According to [8-9] in most cases, the anaerobic transformation of organic matter is achieved most efficiently at a neutral pH and at low value of pH (5-6) will inhibit the growth of methanogenic bacteria. From the results of the study it can be seen that during the anaerobic digestion pH the process is in the range of 6.7 to 7.1. The following in Table 2 is the relationship between temperature, pH and time of fermentation to methane gas produced.

Tabel 1. Relation between the main parameter to CH_4 concentration

Time (day)	Temperature (°C)	pH	CH_4 (%)
0	26	6,7	0
5	30	6,8	5
10	30	6,9	8,41
15	33	7,0	37,42
20	33	7,0	48,27
25	35	7,1	59,12
30	29	6,9	50,04

At a low pH of 6.8 methane gas produced 5% and at a high pH of 7.1 methane produced 59,12%. However fermentation time is very influential where the longer the fermentation time the methane gas concentration increases. It can be concluded that the highest concentration of methane gas is achieved at a neutral pH of 7.1.

Temperature during the anaerobic digestion process in this study was in the range of 26°C to 35°C. As temperature increases, the biochemical reaction takes place at higher rate. The optimum temperature achieved in producing the largest methane gas was 35°C. The type of microorganism in this anaerobic digestion is mesophilic microorganisms, based on [8] optimum temperature of mesophilic in range of 30°C-40°C.

Fermentation time or Retention time (also known as Hydraulic retention Time, HRT) is the average period that a given quantity of inputs remains in the digester to be acted upon by the methanogens. In this study, the fermentation process was carried out for 30 days and based on the data on Tabel 1 the optimum time of fermentation was obtained at 25 days with methane gas concentration was 59,12%.

3.2 Organic Content (COD)

Chemical oxygen demand (COD) reflects the number of organic compounds present in the slurry of cow dung. COD content at the beginning of fermentation of cow dung in the fixed dome biodigester was 30.800 mg/l and on the 25th day it became 7.400 mg/l. The efficiency of anaerobic digestion can also be evaluated using COD, COD reduction can be reflective of the amount of degradation taking place within anaerobic digester [9]. Anaerobic digestion stabilizes the organic matter and reduces pathogens, odor, total solids by converting part of volatile solid fraction into biogas [10]. COD content at the time of fermentation can be seen in Figure 3. Based on Figure 4, the longer the fermentation time, the lower COD content.

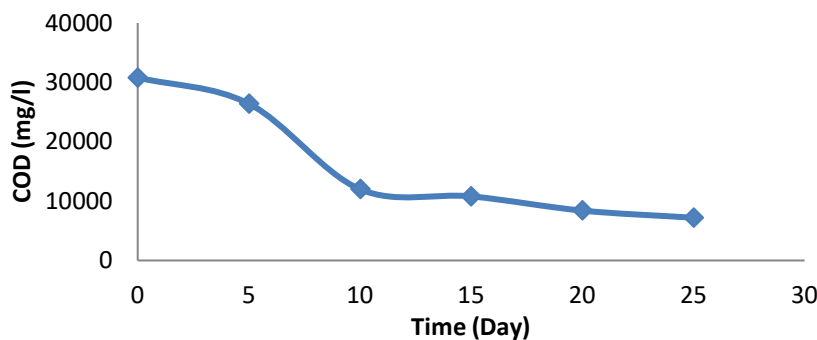


Figure 3. COD Content Versus Fermentation Time

3.3 Total Suspended Solid Content (TSS)

Total suspended solids (TSS) in this study was measured dry matter in the slurry of cow dung. TSS is the attribute of digester operation. TSS content at the time of fermentation can be seen in Figure 4. It can be seen that the longer the fermentation time the TSS content will decrease. The decrease in TSS shows the decomposition performance of organic compounds in the biodigester.

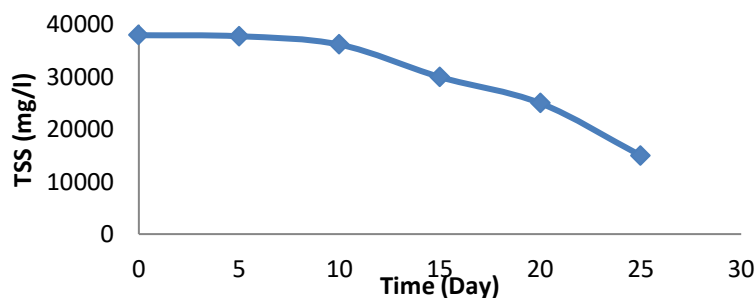


Figure 4. TSS Content Versus Fermentation Time

4. Conclusion

The main parameters of anaerobic digestion for pH, temperature, fermentation time and organic content greatly influences the production of methane gas. The optimum condition in the formation of methane gas is at pH 7.1, temperature 35°C and fermentation time of 25 days. The highest methane gas concentration at the optimum condition is 59,12%. The degradation of organic content of cow dung into biogas can also be seen in decrease in content of COD and TSS on the fermentation time.

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