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CONFERENCE PROGRAMS AND ABSTRACT

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

OCTOBER 30-31, 2018

*Palembang, Province of South Sumatera
Indonesia*

Organized By :



Collaborate With :





FOREWORD FROM GENERAL CHAIR 2nd FIRST 2018 INTERNATIONAL CONFERENCE

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

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

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

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

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



FOREWORD FROM DIRECTOR OF STATE POLYTECHNIC OF SRIWIJAYA

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

			Sriwijaya, Indonesia)
1114	14.30 – 14.40	The Factors Affecting Students for Choosing The Business Administration Departement as A College in Higher Education	Afrizawati, SE, M.Si (Business Administration State Polytechnic Sriwijaya Palembang Indonesia), Dr. Paisal, SE, M.Si (Business Administration State Polytechnic Sriwijaya Palembang Indonesia) Hendra Sastrawinata, SE, M.M (Business Administration State Polytechnic Sriwijaya Palembang Indonesia)
1120	14.40 – 14.50	Ownership Structure, Corporate Social Responsibility (CSR) Disclosure and Company's Financial Performance	Neneng Miskiyah(Department of business administration, Polytechnic State of Sriwijaya, Indonesia), Hadi Jauhari(Department of business administration, Polytechnic State of Sriwijaya, Indonesia), Sari Lestari Zainal Ridho(Department of business administration, Polytechnic State of Sriwijaya, Indonesia)
990	14.50 – 15.00	Analysis of the Influence of Tourist / Tourism Satisfaction on Competitiveness of Tourism Destination in Palembang Citi	Mutiara Lusiana Annisa (Accounting Study Program, Politeknik PalComTech, Palembang, 30129, Indonesia), Ganda Hutasoit (Accounting Study Program, Politeknik PalComTech, Palembang, 30129, Indonesia)
993	15.00 – 15.10	Multimedia Implementation in Tourism Promotion for Increase Regional Original Revenue by Pagaram City Government	J Febriantoko(Accounting Study Program, Politeknik Palcomtech, Palembang, Indonesia), Hendra Rotama (Visual Communication Design Study Program, Politeknik Palcomtech, Palembang, Indonesia)
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1104	16.10 – 16.20	Performance of Provincial Government Implementation of Indonesia in Financial Sector	Kuo Keo Pisey(Enterpreneurship Development Institute, CIEDI Cambodia-India, Cambodia), Rita Martini(Department of Accounting, State Polytechnic of Sriwijaya, Palembang, Indonesia), Selviana Chalifah(Department of Accounting, State Polytechnic of Sriwijaya, Palembang, Indonesia), Yuli Antina Aryani(Department of Accounting, State Polytechnic of Sriwijaya, Palembang, Indonesia), Kartika Rachma Sari(Department of Accounting, State Polytechnic of Sriwijaya, Palembang, Indonesia), and Choiruddin Choiruddin(Department of Accounting, State Polytechnic of Sriwijaya, Palembang, Indonesia)
1111	16.20 – 16.30	The Effect of Good Governance and Accrual Accounting on Apparatus Behavior with Supporting Devices as Moderators	Henny Yulsiati, SE, M.Ak.(Lecturer in Accounting Department State Polytechnic of Sriwijaya), Sandrayati, SE, M.Sc., Ak.(Lecturer in Accounting Department State Polytechnic of Sriwijaya), Dra. Susi Ardiani, M.Si.(Lecturer in Accounting Department State Polytechnic of Sriwijaya), Sarikadarwati, SE, M.Sc., Ak., CA(Lecturer in Accounting Department State Polytechnic of Sriwijaya)
1113	16.30 – 16.40	The Quality Of SIMDA BMD and User Satisfaction : Study on The Government of South Sumatera Province	Kartika Rachma Sari(Department of Accounting, Sriwijaya State Polytechnic, Palembang , Indonesia), Zainal Arifin(Department of Accounting, Sriwijaya State Polytechnic, Palembang , Indonesia), Desi Indriasari(Department of Accounting, Sriwijaya State Polytechnic, Palembang , Indonesia) , Choirudin ³ , and Rita Martini(Department of Accounting, Sriwijaya State Polytechnic, Palembang , Indonesia)
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Solar Panel Performance Improvement using Heatsink Fan as the Cooling Effect

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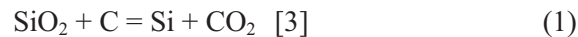
Abstract. Currently, technological developments in Indonesia are growing very fast, one of which is technology in the field of renewable energy. As a tropical country, Indonesia gets a lot of daylight. National Energy Board data on solar irradiation in Indonesia with irradiation distribution in the Western Region of Indonesia (KBI) around 4.5 kWh / m² / day and in Eastern Indonesia (KTI) around 5.1 kWh / m² / day. We must focus on the development of renewable energy and be a solution to the current energy problems where fossil energy is increasingly depleted of its supplies, especially solar energy with unlimited resources. The problem is if you want to build a solar power plant (PLTS) in a tropical country where the ambient temperature is quite hot if you want to improve the performance of the solar panel you must get the maximum open circuit voltage by maintaining the standard operational temperature of the solar panel. Polycrystalline Sankelux solar panel type SPV 1610-100 with a standard temperature of 25°C will produce a maximum open circuit Voc voltage of 22.94 V. The study was conducted in Palembang between 9:00 a.m. to 3:00 p.m. where the temperature could reach 38°C, the temperature on the surface of the solar panel reached 55°C and solar radiation reached 1447 W / m² at 12:30 a.m. By adding cooling heatsink fan to keep the surface temperature of the solar panel close to the standard operational temperature, the temperature decreased to 15 ° C so we could maximize the open circuit voltage.

1. Introduction

One of the abundant sources of renewable energy is solar energy. At present many people have used it to make energy sources substitute for fossil fuel energy sources, especially in areas that have not been reached by the electric current or just to reduce electricity costs every month by using photovoltaic (PV) solar panels. Solar panels consist of several solar cells in a series of panels, usually totaling 36 cells, 48 cells or 72 cells. Solar cells can convert sunlight radiation into electrical energy where the output is voltage and direct current (DC). When the sun rays on the solar cell in the crystal lattice, the sun's energy is channelled into the lattice, where the atom will turn into a paired electron hole. If this happens outside the p-n junction, the electron hole pair will reunite very quickly. Electron hole pairs around the p-n junction are separated from the local electric field. The results of electrons move to layer n while holes move to the p layer, resulting in a voltage build up in the solar cell. If the load is connected to the solar panel, the current will flow [1, 2].



The basic material of the solar cell is SiO₂ quartz sand where silicon (Si) is produced as the second most common substance in the earth's crust, SiO₂ quartz sand is present in very large quantities. The chemical process of how to get silicon (Si) by adding carbon and heated in a furnace with a large power supply, as follows:



Although silicon (Si) produced has in this process 98% purity is not enough to make solar cells because additional processes are needed to increase the purity of silicon (Si) near 100%, this silicon (Si) quality is very expensive to produce. This very pure Silicon (Si) is then used to make silicon wafers where the solar cell is finally produced. Silicon wafers can be produced using a variety of techniques, depending on the type needed to make solar cells [3].

If we make solar power plants (PLTS) solar panels are the main component in producing an output voltage in addition to other components such as charge controllers, inverters before they can be used by electronic devices. The open circuit voltage V_{oc} produced by solar panels is influenced by several factors.

The main factors that influence the performance of solar panels are [4].

1. Solar radiation intensity, the greater the solar radiation, the greater the current produced by solar panels, not the other way around, the voltage tends to remain even though the radiation level is higher. At 12:30 a.m. is the highest radiation level up to 1447 W / m², how do you increase the radiation intensity at hours outside of it? Several studies added reflectors in the form of glass on four sides of the solar panel, but the side effect of the surface temperature of solar panels also increased.
2. The angle of solar radiation, the Solar panel will get high radiation when the sun's position is perpendicular to 90 °. Several studies to get the best radiation by optimizing the angle of the solar panel that is adding a solar tracker where the motor is installed to move the solar panel angle following the angle of solar radiation.
3. Solar panel surface temperature, solar panels have a standard operating temperature of 25°C [5], Temperature can affect how electricity flows through an electrical circuit by changing the speed at which the electrons travel. Also, since solar panels work best at certain weather and temperature conditions [6]. A PLTS in the tropics, of course, the temperature of the area needs to be considered, for example Palembang where the average temperature in the day reaches 38 ° C. Several studies in tropical countries such as Indonesia, India, Morocco, Iraq, and others add a cooling system for solar panels so that the temperature is maintained and is close to the temperature of the operational standard [7].

Some research that has been carried out by several researchers in Indonesia or other tropical countries, in particular, added a cooling system in solar panels, including methods:

1. Water cooling method, by continuously flushing the solar panel surface [8].
2. Heatsink (HS) profile L degree 45 °, 90 °, 135 ° with cooling fan [9] [10].
3. Liquid active cooling [11].
4. Force air stream method, exhaled strong winds to the back of the solar panel [12].
5. Thermoelectric cooling [13].

The above cooling methods can achieve a temperature reduction on the surface of the solar panel between 15° to 15.9°, a voltage increase of 0.28 V - 0.35 V and the efficiency of 10% - 12%.

This paper presents the application of heatsink as the cooling effect to reduce PV panels surface temperature to improve the performance of solar panel applied in a tropical condition.

2. Methods and experiment setup

2.1. Efficiency of photovoltaic (PV)

The strength that can be given by a PV cell or module depends not only on radiation but also how well the consumer is matched. The point of no-load operation with $I = 0$ mA and the short-circuit operation point with $V = 0$ V, produces output power $P = 0$ W according to the formula $P = V.I$. Between these two operating points, product $P = V.I$ must, therefore, reach the maximum value. This operating point

is referred to as Maximum Power Point (MPP). The maximum power of P_{max} a PV cell can convey to consumers is always smaller than the product of the short-circuit current and open-circuit voltage [3].

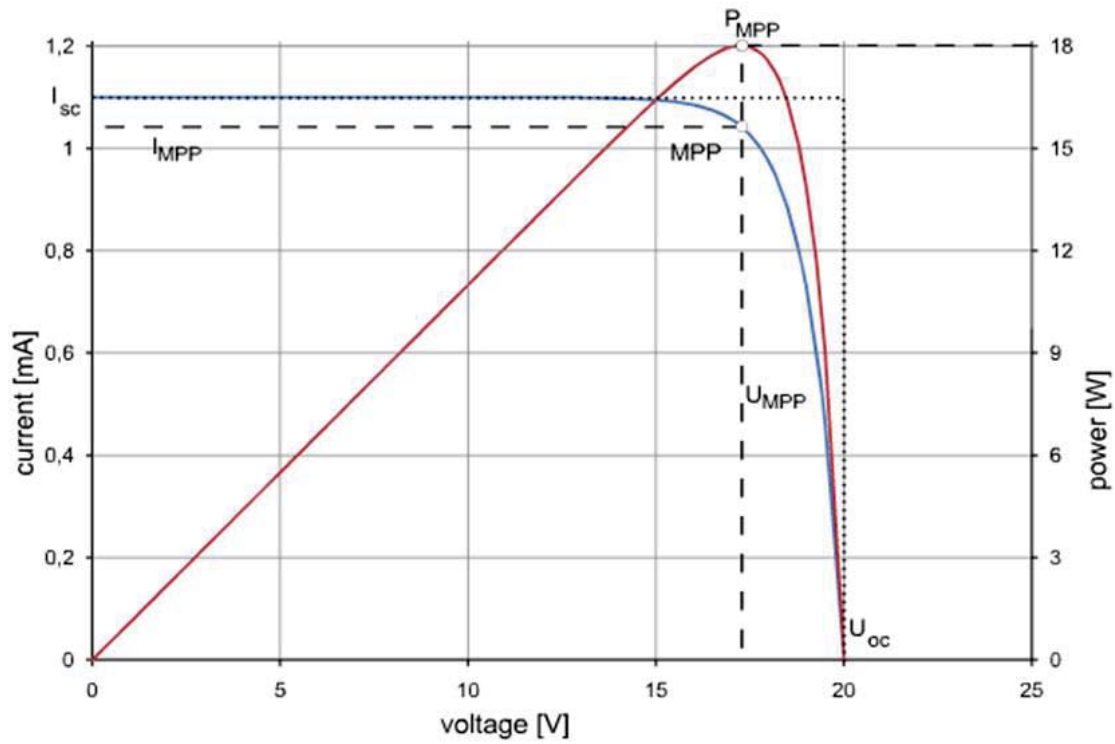


Figure 1. PV efficiency graphic.

Factor fill is the quality criteria for solar cells and states the extent to which the characteristics of the IV rectangular approach consist of no-load V_{oc} and short-circuit I_{sc} stresses shown below. Fill factors are calculated using the following equation [14]:

$$FF = \frac{P_{mp}}{V_{OC} \cdot I_{SC}} \quad (2)$$

$$= \frac{V_{mp} \cdot I_{mp}}{V_{oc} \cdot I_{sc}} \quad (3)$$

The conversion of efficiency is calculated as the ratio between the maximal generated power and the incident power. The irradiance value $P_{in} = 1000 \text{ W / m}^2$ for the AM1.5 spectrum has become a standard for measuring the conversion efficiency of solar cells [3]:

$$\eta = \frac{P_{max}}{P_{in}} = \frac{V_{mp} \cdot I_{mp}}{P_{in}} \quad (4)$$

$$= \frac{V_{oc} \cdot I_{sc} \cdot FF}{P_{in}} \quad (5)$$

2.2. Experiment Setup

In figure 2 block diagram which describes the research method to produce the desired research results, the results of the study note the measurement results of solar panel surface temperature, solar radiation, and output voltage. It would be compared the surface temperature between the two solar panels that were expected to used heatsink fan could be lower 18° to 20° so that the output voltage would be greater. Heatsink (HS) as the main additional component to reduce the temperature in this

experiment used aluminum material was expected to absorb heat and then channelled with the help of the wind from the fan.

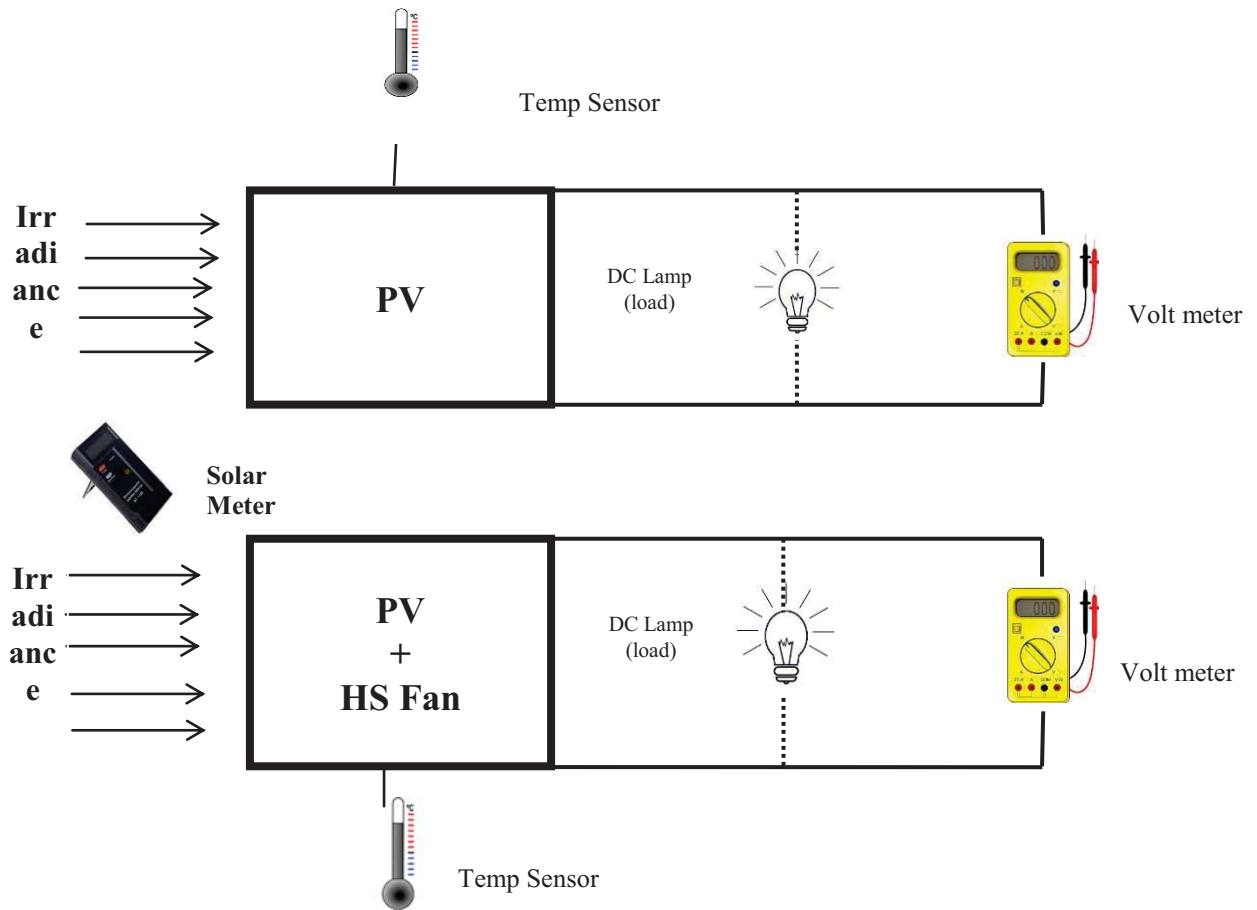


Figure 2. Block diagram

The key to the success of this research was a cooling system that was attached to a solar panel of an aluminum heatsink to absorb the heat and wind blowing from the fan so that heat was quickly discharged into the air. Figure 3 described the solar panel with the added cooling and figure 4 illustrated the airflow concept on the heatsink.

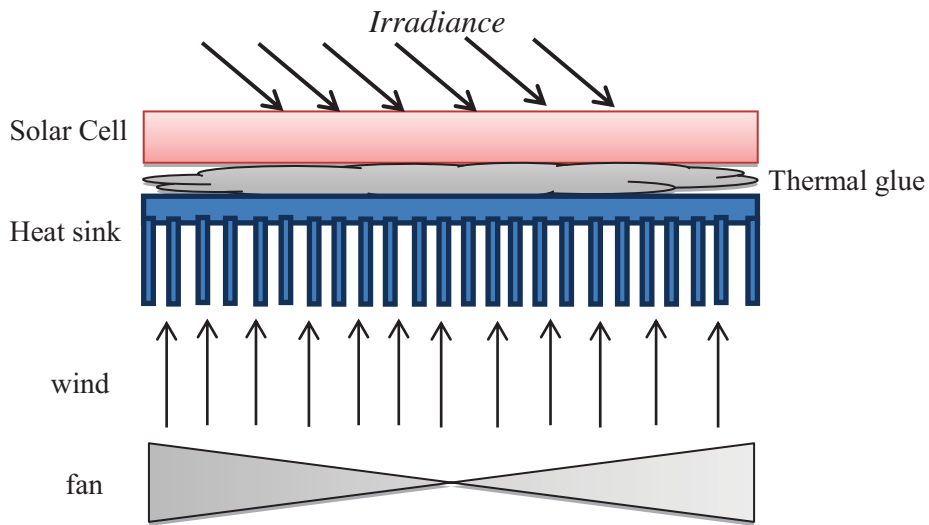


Figure 3. PV with heatsink fan

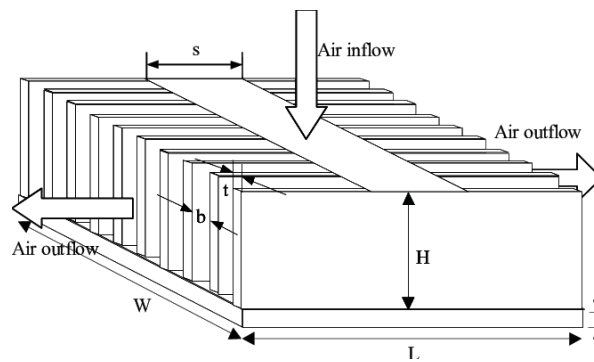


Figure 4. Airflow concept. [15]

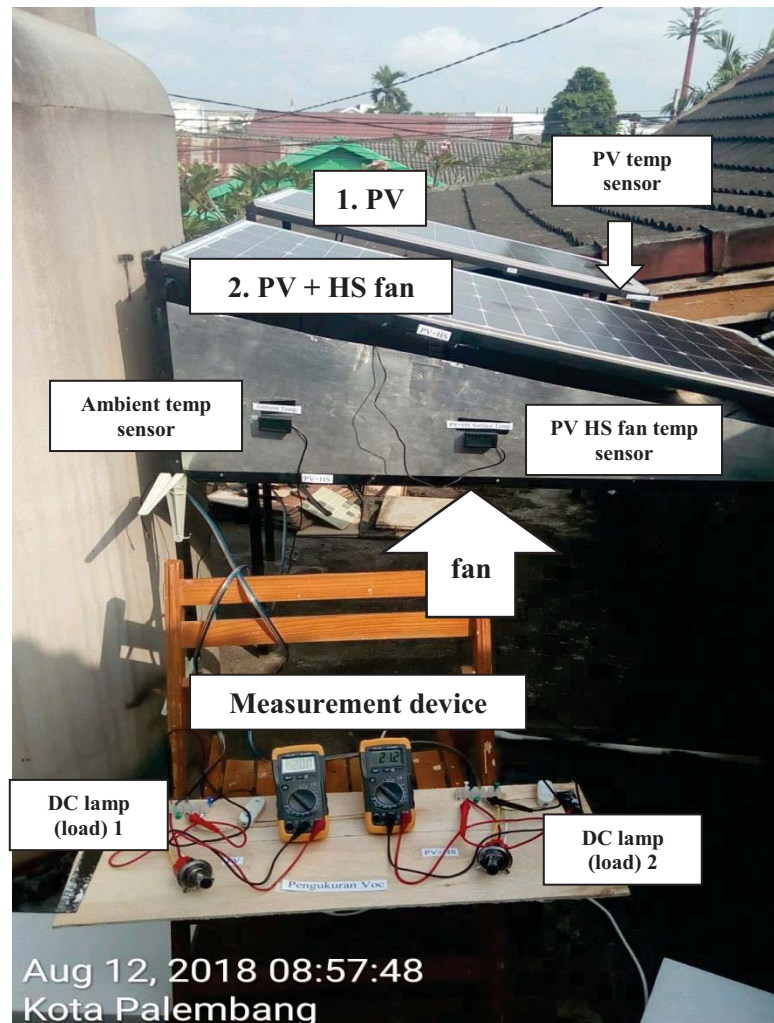


Figure 5. Experiment setup and measurement device.

In Figure 5 described the devices used for research where solar panels used sankelux SPV 1610 mono crystalline as much as 2 units, the first panel was attached to the heatsink in all cells on the back of the panel and a fan was added to accelerate the disposal of heat circulation. At the solar output, panel was paired each load a DC lamp 24V 100 / 90W where the load would be connected if for V_{pm} voltage measurement while the DC lamp was off if for V_{oc} voltage measurement. For solar meters measuring instruments for solar radiation in figure 6.



Figure 6. Solar meter for measuring irradiance.

In this research, the recording was done every 30 minutes with the important point of increasing solar radiation would increase the temperature on the surface of the solar panel and of course it would affect the voltage generated. The cooling system with heatsink fan was very cheap and requires not much energy to turned on the fan and switch at low speed positions throughout the study at 9:00 a.m. to 3:00 p.m. When measuring the V_{pm} voltage the solar panel needed to be loaded using a 24V DC lamp so that the V_{pm} voltage could be measured.

3. Results and discussion

The research was conducted in August 2018 in the city of Palembang where the month is still in dry season and the temperature is very hot during the day to 38.7°C and the surface temperature of the solar panel reaches 55.5°C . Solar panels that were added with cooling heatsink (HS) fan could make the surface temperature of the solar panel more stable, the wind blows quite tightly in some time recording could make the solar panel surface temperature decreased than before. Research data showed windy weather conditions made the panel conditions cooler.

Solar radiation at daytime (11:30 a.m. - 13:00 p.m) showed the highest point and had an effect on increasing the surface temperature of the panel but at 12:00 p.m – 13:00 p.m when the weather was windy enough to cause the surface temperature to decrease: this was due to strong wind blowing could make the panel surface temperature decrease even though solar radiation was high.

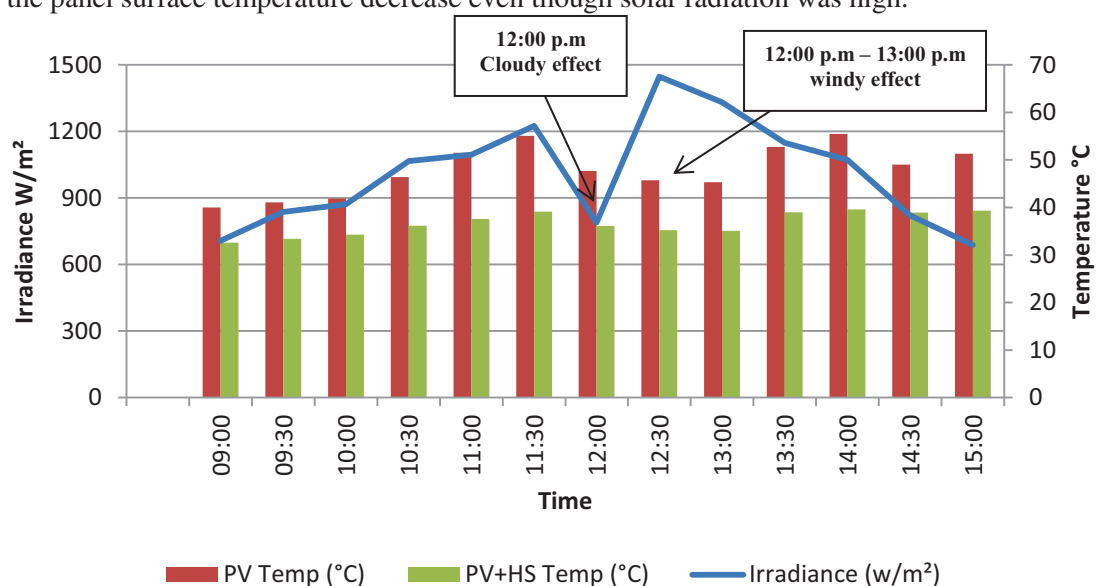


Figure 7. Irradiance vs PV temp.

Figure 7 could be concluded that the high solar radiation regarding photovoltaic solar panels did not automatically raise the surface temperature of solar panels (14.00-15.00), the wind blowing factor actually made the surface temperature more stable and could decrease (12.00 - 13.00). By adding a heatsink (HS) fan, the surface temperature of the solar panel can go down to 15.9 °C.

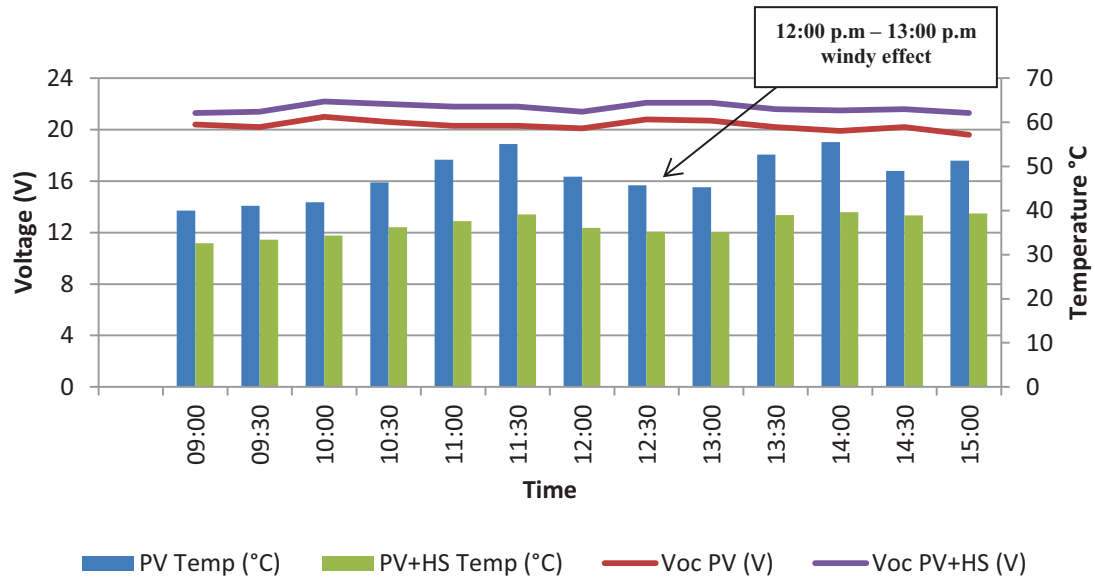


Figure 8. Voc vs Temperature.

Figure 8 showed the graph of the open circuit voltage Voc measurement compared to the surface temperature of the solar panel with cooling heatsink and without cooling the heatsink. From the results of the study showed the surface temperature of solar panels with cooling heatsink fan was more stable surface temperature than solar panels without cooling, this was due to the influence of the heatsink attached to the rear surface of the solar panel absorb heat and channel it through the ducting and the fan helped accelerate heat dissipation as in figure 3b with the stable surface temperature of the solar panel, photovoltaic produces a higher Voc open circuit voltage because this was a proof according to the technical specifications of the solar panel.

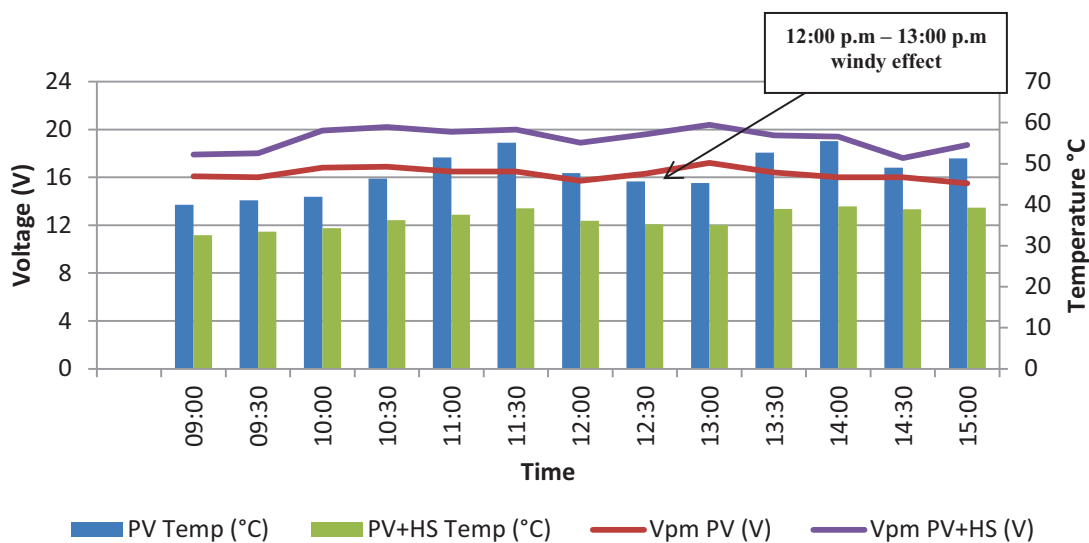


Figure 9. Vpm vs Temperature

Figure 9 shows a graph of measurement of maximum peak Vpm voltage compared to the surface temperature of solar panels. The difference with Voc here is added load in the form of DC lamp 24 V 100/90 W. The surface temperature of the solar panel is the same as figure 8 and the maximum peak voltage Vpm also shows that the solar panel that is attached to the cooling heatsink is greater than without cooling.

Tabel 1. Improvement of output Voltage PV+HS.

	Voc PV (V)	Voc PV+HS (V)	Improve Voc (V)	Vpm PV (V)	Vpm PV+HS (V)	Improve Vpm (V)
Average	20.33	21.7	1.37	16.30	19.22	2.92
The Highest	21.00	22.20	1.20	17.20	20.40	3.20

Tabel 2. Efficiency PV+HS result.

	PV Temp (°C)	PV+HS Temp (°C)	Delta (°C)	Efficiency
Average	47.94	36.65	11.29	23.56%
The Highest	55.50	39.60	15.90	28.65%

4. Conclusion

SPV 1610-100 solar panels which are cooled by adding heatsinks fans can be concluded to be very effective in reducing the surface temperature of solar panels when compared to the same solar panel without cooling. The research conducted in August 2018 in the city of Palembang can reduce the temperature to 15.9 ° C or efficiency reached 28.65%, increase the average output Voc 1.37 V and if added to the load DC lamp 24V 100/90W the Vpm output voltage increases by 2.92V on average.

The results of this study can also be concluded that between 9:00 a.m. and 3:00 p.m. wib the solar radiation level starts to increase followed by a rise in the linear panel surface temperature, see figure 6 between 09:00 a.m. to 10:30 p.m. but when solar radiation starts to fall the surface temperature of the solar panel did not drop significantly at 1:30 p.m. until 3:00 p.m. actually the strong wind blows could reduce the surface temperature of the panel to drop significantly between 12:00 a.m. to 13:00 a.m.

The output voltage of solar panels in either Voc or Vpm between 09:00 a.m. to 3:00 p.m. is relatively stable because the temperature in the city of Palembang at that hour is also stable between 29 ° C to 38 ° C and tends to be cloudy and wind blowing.

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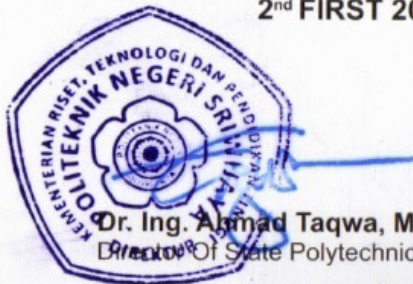
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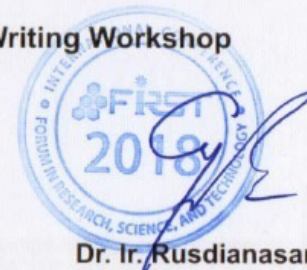
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