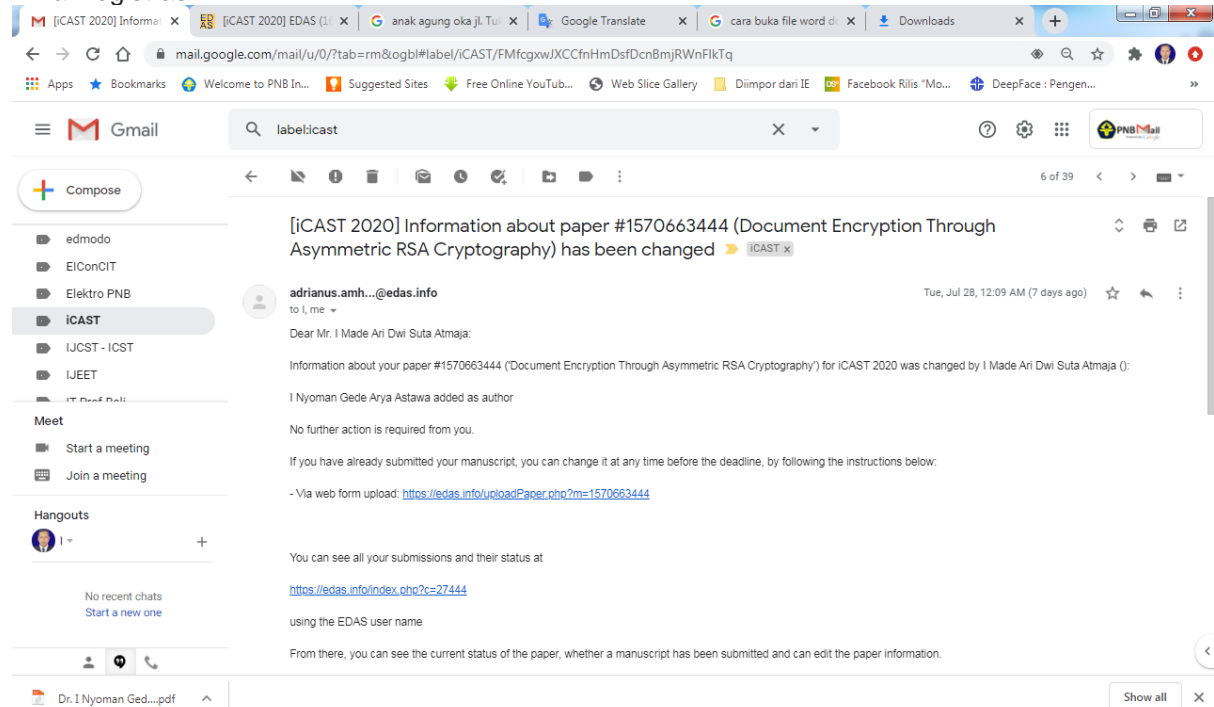# Email-email dari ICAST 2020 untuk seminar internasional dan terbit di IEEE

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In recognition of his/her full support and invaluable services rendered as a

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Document Encryption Through Asymmetric RSA Cryptography

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Abstract—**With advances in technology like today, documents can be sent digitally via the internet media. An important problem faced in sending digital documents is that often documents sent can be accessed by parties who do not have the authority over these documents. The solution to this problem is to secure digital documents before transmission. One of the methods to secure data is cryptography. Cryptography with asymmetric keys is the strongest data security technique to use. One of the most widely used asymmetric cryptography is the RSA (Rivest-Shamir-Adleman) algorithm. The type of document that is encrypted is the most commonly attached document when sent e-mails. The document types are .docx, .pptx, .xlsx, .pdf, .jpg and .mp4. In the encryption process, a public key and a private key will be generated which can be sent separately by sending encrypted digital documents. The decryption process for digital documents is carried out from the receiving end of the document using a private key generated in the encryption process. The encryption result has a size larger than the original file size because it has been encoded in another form according to the RSA algorithm. The longer and bigger the input size, the longer it will take required for encryption.**

Keywords--Cryptography, Encryption, Decryption, Document.

I. INTRODUCTION

The advancement of information technology today has provided many benefits in everyday life, both for individuals and organizations. Technological advances are characterized by easy and fast access to information. Each individual can exchange information in seconds even though the distance is quite far. This convenience is of course accompanied by challenges, namely the security of information exchanged. The easier access to information is, the less secure it will be. Information security includes 3 main aspects, namely: confidentiality, data integrity, and availability [1]. Confidentiality is related to the assurance that information can only be accessed by those who have authority over the information. Data integrity relates to information received by authorized recipients that is intact and free from changes by unauthorized parties. Availability, namely the assurance of system services for authorized parties.

The study of data security is cryptography. According to Rodriguez-Henriquez, cryptography is a discipline that studies mathematical techniques related to information security, such as providing security services in the form of confidentiality, data integrity, authentication, and non-repudiation (cannot be denied) [2]. Until now, various cryptographic algorithms has founded to secure data. Cryptographic algorithms have been classified into 2 based on the key, namely the symmetric key algorithm and the asymmetric key. The symmetric key only uses a secret key that is the same between the sender of the message and the recipient of the message. The message is encrypted (encoded) and decrypted (decoded) with a secret key so that both the sender and receiver will share a secret key. In an asymmetric key, the sender and receiver use different keys [3]. If a message is confidential and only has the right to be known by the recipient, then the recipient will give the public key that has been generated from the private key to the sender. The sender then encrypts the information with that public key. When the recipient receives an encrypted message, the recipient will decrypt it using his private key. The use of this asymmetric key is very widely used today because the recipient does not need to give the secret key to other parties so that only the recipient knows the key.

Nowadays, the use of asymmetric keys is becoming more and more common. Various asymmetric key algorithms have been widely known, among which the most widely used is Rivest-Shamir-Adleman (RSA). Various studies on the RSA algorithm have been carried out, including Chandel and Patel conducting a literature review to encrypt image data, and it was found that RSA is good for doing it [4]. Parkin 2003 conducted a study to use RSA as a digital signature in e-commerce transactions [5]. Shen in 2009 carried out an object-based implementation to accelerate the RSA algorithm [6].

In this study, the implementation of RSA was carried out in document form information. This algorithm is implemented to be able to secure data in documents so that they are safe from unauthorized.

II. RESEARCH METHOD

The data in this study were document text files in the .docx, .xlsx, .pdf format, .ppt, .jpg and also .mp4. The document file will be tested with the built application, they will decode with the RSA encryption algorithm. The results of each encryption will be saved into a text file with text

format. When the end-user receives the file and will do the decryption, the opposite of the encryption algorithm used previously. For each encrypted text file, the encryption time will be calculated based on the length of the key used and the file size formed after the encryption process.

In the system design process, it is necessary to make the system process flow itself. The document security system application created has an architecture as shown in Figure 1 below:
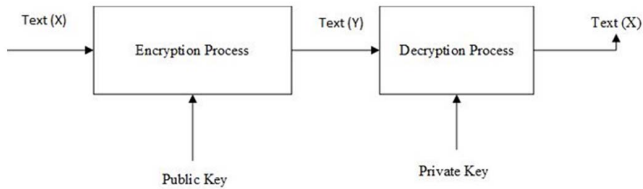
Fig. 1. Asymmetric Key Encryption Application Architecture

In Figure 1, there are 2 users, namely A as the sender and B as the recipient of the message. A has previously been told the private key B. The X text document data which will be referred to as plaintext is input into the system. The system will encrypt X using the RSA algorithm to produce a private key. The encryption result is a ciphertext named Y. B as the recipient will decrypt Y using an existing private key and obtain a text X which has the same content as the plaintext sent by A

For more specific, the process of encryption and decryption of documents is described in the following flowchart:
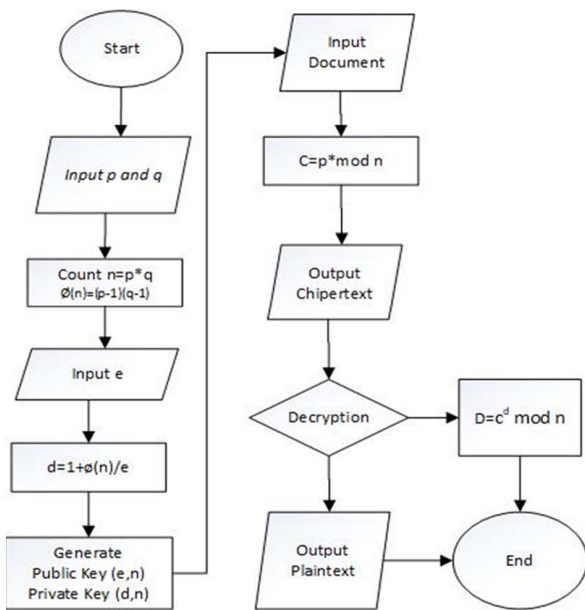
Fig. 2. Flowchart of RSA Asymmetric Key Encryption Application

The process of encryption and decryption of documents following the flow chart in Figure 2 is explained as follows:

1. Key Forming Process:

a. Choose two prime numbers p and q, (try p> q)

b. Calculate n = p x q

c. Calculate Φ (n) = (p-1) x (q-1)

d. Choose a public key that is relatively prime with Φ (n)

e. Calculate the private key with SK = 1 + Φ (n) / PK

2. Encryption Process:

a. Change the plaintext into ASCII code

b. ASCII characters are stored in blocks of bytes.

c. Multiply each block to get the ciphertext with the formula: $C = p \char`\^ e \bmod n$

3. Decryption Process:

a. Change the plaintext into ASCII code

b. ASCII characters are stored in blocks of bytes.

c. Multiply each block to get the plaintext with the formula: $P = c \char`\^ d \bmod n$

The data used are 6 types of files with different formats and for file size, there are no restrictions.

TABLE I. TYPES OF TEST DOCUMENTS

No	File Type	File Size (KB/MB)	RSA	
			Encryption Time (s)	Decryption Time (s)
1	File 1.docx	Size 1		
2	File 2.pptx	Size 2		
3	File 3.xlsx	Size 3		
4	File 4.pdf	Size 4		
5	File 5.jpg	Size 5		
6	File 6.mp4	Size 6		

Table 1 above shows the file types that will be used for testing. In the testing process, the time spent in the encryption and decryption process will be calculated for each type of document. System testing will be carried out using several types of documents and videos that are most often transmitted through the internet. The file formats such as *.docx, *.pptx, *.xlsx, *.pdf, *.jpg and *.mp4. This decryption encryption application goal that the document has security so it can't be accessed by unauthorized people.

III. RESULT AND DISCUSSION

The results obtained from this study is a document encryption application with the RSA method. This application was built using the programming language used in building this information system is PHP using the Code Igniter Framework where the storage process is carried out directly into the user's computer internal storage. The results of the research are as follows:

A. Result

The results of this application have been implemented and can be accessed online through the page: https://rsacryptography.com. The following is a view of the

47

document encryption application based on the RSA Asymmetric method, on this page, there are 2 main menus, namely Encryption, and Decryption.

Fig. 3. Main Page of RSA Asymmetric Encryption Application

For menu 1, namely the encryption process, the document to be encrypted is input into the system and then the encryption process will be carried out. After the encryption process is running, the system will generate information from the document that has been encrypted in the form of the original file name, file type, the resulting private and public key, the name of the encryption file, and the time it takes in the encryption process. As seen in Figure 3 below:
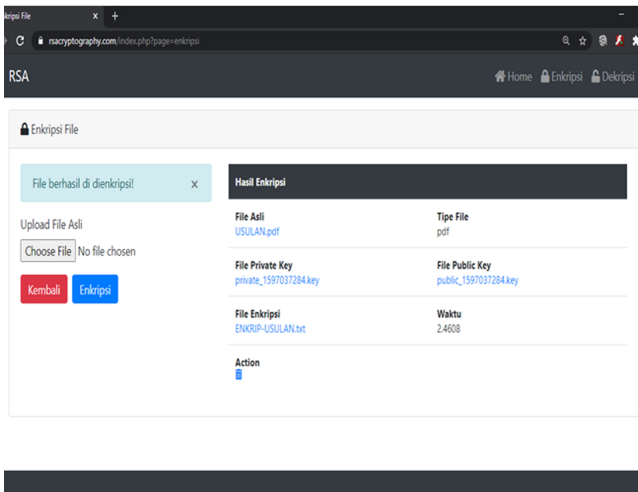
Fig. 4. RSA Asymmetric Key Document Encryption Process

All encrypted files are saved in .txt format. This format is the easiest file format to transmit or send on the internet. After the encryption process is carried out, the document and private key can be downloaded for further use in the decryption process. Encryption files that have been downloaded will be stored directly into the internal storage of the computer used by the user.

The encryption-decryption process produces 2 keys. namely Public Key and Private Key. The Public Key can be known by others. While the private key can only be known by the recipient of the encryption file, where later the private

key will be used to decrypt the received document. The private key is generated differently for each encryption process. So each key will not be the same as one another. Private key files can also be downloaded directly and stored in the internal storage of the computer

An example of the results of the private key generated from the encryption process is shown in Figure 5 below :

Fig. 5. Private Key of RSA Asymmetric Encryption Application

Likewise, the generated public key will be different for each time the encryption process is performed. For an example of the results of the public key generated from the encryption process is shown in Figure 6 below :
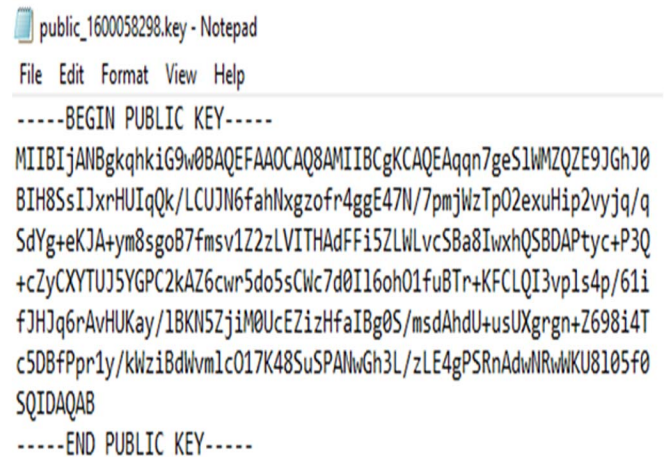
Fig. 6. Private Key of RSA Asymmetric Encryption Application

In the decryption process, the private key plays a very important role so that the document can be successfully decrypted back into the original document. Each file decryption process uses his private key. in other words each document has its private key, so only the corresponding private key can decrypt the document itself. The decryption process is shown in Figure 7 below:

48
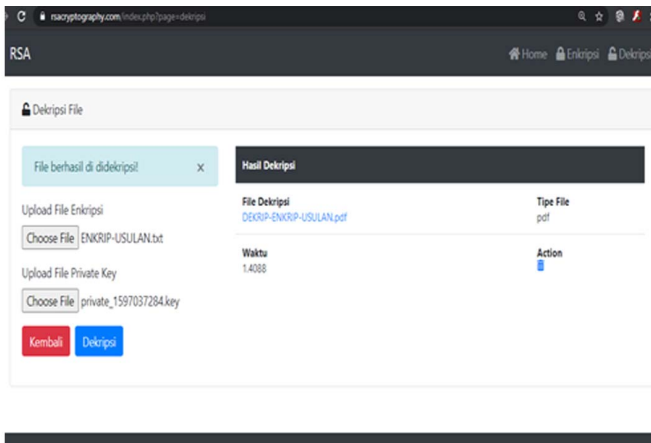
Fig. 7. RSA Asymmetric Key Document Decryption Process

B. Result Evaluation Process

The test carried out is the description test of the 6 types of documents that are most commonly transmitted via internet media. All document types have been successfully encrypted and decrypted. When the encryption file is opened, the original information has been encoded according to the RSA encryption result. The insured message information is shown in Figure 8 below:

Fig. 8. Contents of RSA Encrypted Document Files

All types of documents are tested by obtaining the results as shown in Table II below:

TABLE II.   RESULTS OF TESTING ALL TYPES OF DOCUMENTS

| No | File Type | File Size (KB) | RSA | | Status |
			Encryption Time (s)	Decryption Time (s)	
1	Enkripsi.docx	284	0.2808	0.2386	Succeed
2	JSA.pptx	535	0.5034	0.4411	Succeed
3	Rab.xlsx	102	0.1018	0.1131	Succeed
4	Usulan.pdf	1.662	1.5733	1.3877	Succeed
5	Flowchart.jpg	23	0.0274	0.0343	Succeed
6	Video.mp4	1.878	1.7106	1.5132	Succeed

From the testing that has been completed, all types of documents running properly encrypted and decrypted. From the test results, it is also seen that the larger the document size will affect the time in the encryption and decryption process. In this system, there are no restrictions on the size of the documents to be encrypted but in general, in the process of sending documents through the internet, each application has different restrictions. So it is still recommended that the size of the document file to be encrypted can adjust to the application that will be used to transmit the encrypted results. Decryption and encryption with a shorter time is necessary so that the process becomes effective and efficient

IV. CONCLUSION

The conclusion of this research is application software can perform process encryption, decryption, and verification with success, thus providing security that is an aspect of confidentiality and data authentication.   In all processes handled by the RSA algorithm, the key size is directly proportional to the processing time/speed. The average Encryption time is faster compared to the decryption time. The encryption result has a size larger than the original file size because it has been encoded in another form according to the RSA algorithm. The longer and bigger the input size, the longer it will take required for encryption.

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PROGRAM BOOK

The 3rd International Conference on Applied Science and Technology (iCAST) 2020

Padang, Indonesia
24-25 October 2020

The 3ʳᵈ International Conference of Applied Science and Technology (ICAST) 2020

October 24-25th 2020
Padang, Indonesia

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Program Book
The 3rd International Conference of Applied Science and Technology (ICAST) 2020

Politeknik Negeri Padang - PNP
Padang, Indonesia, October 24-25th, 2020

Table of Contents ──────────────

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Welcome Message from General Chair of iCAST 2020 ──────

Welcome to the iCAST 2020, the third international conference held by Indonesian Polytechnics Consortium.

For this year, the iCAST 2020 conference is held in Padang, and hosted by Politeknik Negeri Padang, Indonesia, as a continuation of the previous iCAST conference in Bali. The theme for this conference is "The Emergence of Green and Model-Based Technology in Developing Economy, Social Life, and Culture for Glocalization".

This theme is taken by considering that improving worldwide technology can be adopted and implemented in local society in Indonesia. Polytechnic, as a higher-educational institution that provides hands-on experience within a dynamic and progressive learning environment producing skilled and professional graduates in their knowledge background. Therefore, supporting green development that focused on responsiveness to the environment, efficiency in uses of earth's limited resources, and sensitivity to the community and culture has become the concern of this vocational institution. To answer this challenge, this conference will be divided into two groups of science, i.e., social science and engineering science to present the results of applied research, and to find the balance between economic and environmental sustainability.

As the general chair of this conference committee, I have the honor to welcome all the plenary speakers, presenters, and participants to the iCAST 2020 conference. I sincerely hope that you will enjoy the conference, and thank you for your participation.

Warm regards,

Dr. Yuhefizar
General Chair

Foreword of ICAST 2020 _____

Welcome, Ladies and Gentlemen, Dear Colleagues,

I am pleased as the chairman of the Director Forum of State Polytechnic of Indonesia to welcome you to the Third International Conference on Applied Science and Technology (ICAST) 2020.

The theme of this conference is "The Emergence of Green and Model-Based Technology in Developing Economy, Social Life, and Culture for Glocalization", which will be a good topic for researchers, scientists and the entire engineering community to meet each other and sharing their thoughts, knowledge and ideas. This Conference is also provide a valuable opportunity for industry specialists and decision-makers to share experiences.

This symposium would have not been possible without the contributions and hard works of the keynote and invited speaker, all the authors and reviewers, the advisory committee as well as chair persons, Technical Committee and Organizing Committee. Allow me to take this opportunity to express my sincere appreciation to all of you.

Also great appreciation to Politeknik Negeri Padang (PNP) for hosting this conference. However, due to Covid-19 and following the advice of local authorities, the conference will be held through online or virtual conference (VICON). And I would like to encourage the delegates to participate with an increasing number in all the activities and intersting discussion through online platform during the conference.

I am sure you will have fruitful and rewarding exchanges through this conference. I wish you every success with this important conference and I look forward to learning about the outcome.

Thank you.

Dr.Eng. Zainal Arief
Chairman of The Director Forum of State Polytechnic of Indonesia

Guidelines ICAST _____

1. Official Language
   The official language of iCAST 2020 is English. All presentations including Q&A will be delivered in English.

2. Guideline for Participants
   • Conference Venue
   The event of ICAST 2020 will be held online by using Cisco Webex as the virtual conference media.
   • Registration
   Time of Registration: 07.30 – 08.00 (Local Time Jakarta, GMT + 7), Saturday, October 24th 2020

3. Guideline for Presenters and Session Chair/Moderator
   • 3rd International Conference of Applied Science and Technology (iCAST) 2020 will be held using hybrid mode, namely virtual conference (main) and a pre-recorded video (spare) on the day of implementation. The pre-recorded video will be played when the author fails to join the virtual conference due to lack of the internet connection. It must be submitted to the committee a month before the conference date.
   • Presenters needs to attend both dry run and parallel session. Dry run and parallel session in virtual conference will be held using Cisco Webex. Both dry run and Parallel Session, The iCAST Committee will speak in English throughout the sessions which will also be recorded.
   • During parallel session, the presenters and session chairs are asked to keep to the paper sequence as shown in the Final Program. By following the predefined schedule, participants can switch between sessions without missing the particular papers of interest.
   • The presentation time for each presenter is 15 minutes including Q&A. The session chairs should allow the presenter for a 10 minutes presentation and leave 5 minutes for discussions. All presenters are requested to report their attendance to the session chair 10 minutes before the session begins.

Virtual Conference Room for ICAST 2020

A. Registration, Opening ceremony and Certificate delivery:
Webex Virtual Conference

B. Seminar Room

Saturday, October 24th, 2020

Room : 1 Time : 13.00 – 17.30 Track : Electrical Engineering 1
Room : 2 Time : 13.00 – 17.30 Track : Electrical Engineering 2
Room : 3 Time : 13.00 – 17.30 Track : Computer Science 1
Room : 4 Time : 13.00 – 17.30 Track : Computer Science 2
Room : 5 Time : 13.00 – 17.30 Track : Computer Science 3
Room : 6 Time : 13.00 – 17.30 Track : Computer Science 4
Room : 7 Time : 13.00 – 17.30 Track : Computer Science 5
Room : 8 Time : 13.00 – 17.30 Track : Mechanical Engineering 1
Room : 9 Time : 13.00 – 17.30 Track : Mechanical Engineering 2
Room : 10 Time : 13.00 – 17.30 Track : Engineering
Room : 11 Time : 13.00 – 17.30 Track : Civil Engineering 1
Room : 12 Time : 13.00 – 17.30 Track : Civil Engineering 2

C. Information

Link for Webex Virtual Conference

Main Room: http://bit.ly/mainroomicast

Room 1: http://bit.ly/room1icast
Room 2: http://bit.ly/room2icast
Room 3: http://bit.ly/room3icast
Room 4: http://bit.ly/room4icast
Room 5: http://bit.ly/room5icast
Room 6: http://bit.ly/room6icast
Room 7: http://bit.ly/room7icast
Room 8: http://bit.ly/room8icast
Room 9: http://bit.ly/room09icast
Room 10: http://bit.ly/room10icast
Room 11: http://bit.ly/room11icast
Room 12: http://bit.ly/room12icast

Technical Program _____

Rundown of 3rd International Conference of Applied Science and Technology (iCAST) 2020

Date: October 24-25th, 2020
Time Zone: Local Time Jakarta (GMT + 7)
Venue: Online by using Webex virtual conference.

Time	Activity
07.30-08.00	Participant's Registration
08.00-08.10	Informal Conference Opening (MC)
08.10-08.15	Qur'an Recitation and Du'a
08.15-08.20	Singing Indonesia's National Anthem
08.20-08.25	Welcome Speech from the General Chair of iCAST 2020
08.25-08.30	Welcome Speech from Chair of ISAS
08.30-08.35	Welcome Speech from IEEE Indonesia Section Chair
08.35-08.40	Welcome Speech from State Polytechnic Directors Forum of Indonesia, as well as officially opening iCAST 2020
08.40-08.45	Playback video traditional dance
08.45-08.50	Moderator
08.50-09.10	Keynote 1, Wikan Sakarinto, Ph.D
09.10-09.30	Keynote 2, Dr. Yuli Yetri
09.30-09.50	Keynote 3, Prof. Kathleen B. Aviso
09.50-10.25	QnA 1st session
10.25-10:45	Keynote 4, Assoc. Prof. Krista Danielle
10.45-11.05	Keynote 5, Assoc. Prof. Wahidul Biswas
11.05-11.25	Keynote 6, Assoc. Prof. Philipp Thies
11.25-12.00	QnA 2nd session
12.00-13.00	Lunch Break - Preparation for Parallel Sessions
13.00-15.15	Parallel Session 1
15.15-15.30	Break
15.30-17.30	Parallel Session 2
17.30-17.40	Announcement of Best Presenter and Best Paper iCAST 2020
17.40-17.50	Announcement of iCAST 2021 Host
	Speech from host ICAST 2021
17.50-17.30	Closing Statement by the First Vice Director Politeknik Negeri Padang
17.30-18.10	Closing by MC

Keynote Speakers

Wikan Sakarinto completed his bachelor degree at Gadjah Mada University in the Mechanical Engineering Program in 2001; Masters at the University of Twente, Netherlands and Dortmund University, Germany in the Mechanical Engineering Program in 2005; and a Ph.D in the 2016 Mechanical Engineering Program at Kobe University in Japan.

His career began by becoming Dean of the Vocational Program at Gadjah Mada University, then since May 8, 2020 became Director General of Vocational Education, the Indonesian Ministry of Education and Culture.

Wikan Sakarinto, Ph.D.

Director General of
Vocational Education
Ministry of Education and Culture

INDONESIA

Yuli Yetri is a Senior Lecturer in the Department of Mechanical Engineering, Politeknik Negeri Padang (Padang State Polytechnic), Padang, Indonesia. She received her Dr. degree from Andalas University, Padang, Indonesia in material chemistry expertise. She specializes in corrosion inhibitor from a natural product, material, and green chemistry. Currently, she has published papers in International RefereedJournals, and also participated in many seminars or conferences, both national and international level. Since the year 2017, under the Ministry of Research, Technology, and Higher Education, Republic of Indonesia, she has been appointed and approved to be one of the reviewers for several international refereed journals and grant competition, helping to develop one of the Ministry's programs in improving lecturer's performance. In addition, she is now an active member of the Indonesia Chemical Society, Global Illuminator, Global Research & Development Service (GRDS), the IRED Institute of Research Engineers and Doctors, Hong Kong Chemical, Biological & Environment Engineering Society (HKCBEES), and Association of Chemical Physics Indonesia.

Dr. Yuli Yetri

Mechanical Engineering
Politeknik Negeri Padang
Sumatera Barat

INDONESIA

Prof. Kathleen B. Aviso

Chemical Engineering
De La Salle University
Manila

PHILIPPINES

Kathleen B. Aviso is a Professor of the Chemical Engineering Department of De La Salle University, Manila, Philippines. Her main research interest is the development of decision support tools for environmental decision-making, which have been applied for the design of systems such as eco-industrial parks and low-carbon energy systems. She received her BS in Chemical Engineering (cum laude) from the University of the Philippines-Diliman and her MS in Environmental Engineering and Management from De La Salle University and her Ph.D. degree in Industrial Engineering from De La Salle University. She is the author of more than 130 Scopus-indexed publications with an h-index of 24. She is currently an associate editor of the Journal of Cleaner Production (published by Elsevier) and part of the editorial board of Process Integration and Optimization for Sustainability (published by Springer Nature), Computers in Industry (published by Elsevier) and Heliyon (published by Elsevier). For her scientific work, Prof. Aviso has received awards from the Commission on Higher Education (CHED), the Philippine National Academy of Science and Technology (NAST) and the National Research Council of the Philippines (NRCP). She was also the country finalist for the ASEAN-US Science Prize for Women in 2016.

A/Prof. Krista Danielle S Yu

School of Economics
De La Salle University
Manila

PHILIPPINES

Dr Krista Danielle S Yu is an Associate Professor at the School of Economics, De La Salle University, Manila, Philippines. Her research interests and areas of specialization are inoperable input-output models, economic systems analysis, and economics of climate change. She received her BS in Applied Economics, MS Economics, and PhD in Economics from De La Salle University. Her professional experience as a visiting researcher, University of Derby (2016) and visiting research fellow, George Washington University (2013-14).

https://www.dlsu.edu.ph/colleges/soe/faculty-profile/krista-danielle-s-yu/

Keynote Speakers

A/Prof. Wahidul Biswas

Civil and Mechanical Engineering
Curtin University
Perth
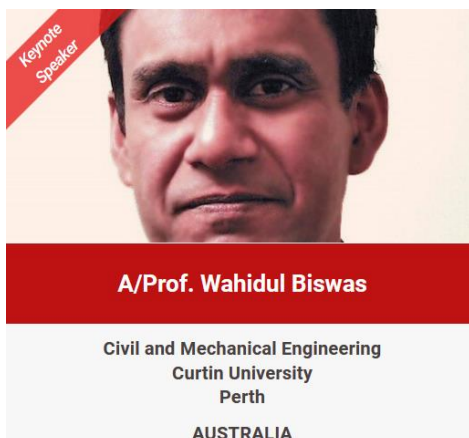
AUSTRALIA

Dr Wahidul Biswas is an Associate Professor at the Sustainable Energy Group, Curtin University, Western Australia. Wahidul was trained as a Mechanical Engineer, researching the performance of diesel engines using biogas fuel. He has a Masters in Environmental Technology from Imperial College, London, and a PhD in Sustainable Futures from the University of Technology, Sydney. A/Prof Biswas teaches and coordinates postgraduate units on Life Cycle Management, Eco-Efficiency Strategies, Industrial Ecology, Environmental Systems, and Sustainable Energy and a core undergraduate Engineering unit, Engineering for Sustainable Development. He has so far carried out extensive life cycle assessment, industrial symbiosis and sustainability related research projects for the Australian agricultural, alternative fuels, building and construction, manufacturing, livestock, mining, gas and water sectors in collaboration with the Department of Climate Change, the Grains Research and Development Commission, Department of Agriculture and Food, University of Western Australia, Department of Primary Industries, Meat and Livestock Australia, Worley Parsons, Water Corporation, Alcoa World Alumina, Enterprise Connect, Recom Engineering, Cedar Woods, Earth Care, Department of State Development, Kwinana Industrial Council, Cockburn Cement and Waste Authority. A/Prof Biswas expanded his LCA research overseas as he completed the LCA of water treatment process and developed environmental product declaration (EPD) of building materials for Gulf Organization of Research and Development (GORD), Qatar. He is the recipient of USD545K competitive grant provided by Qatar National Research Fund to carry out a project entitled, "Techno-economic and environmental assessment of future water supply options for Qatar's water supply".

https://staffportal.curtin.edu.au/staff/profile/view/W.Biswas

Life cycle assessment for achieving circular and green economy

Abstract :Life cycle assessment (LCA) tool can potentially assist in the development of circular and green economy principles. Life cycle thinking assists innovation of products and processes (e.g. resource recovery, remanufacturing, multi-functional devices, energy storage system, digitization) during the product/service life cycle to help achieve closed loop material flow and to decouple emissions and resource use from economic growth. LCA is an approach that estimates the environmental, social and economic impacts of a product or service over its entire life cycle. Environmental Life Cycle Assessment (ELCA), Life Cycle Costing (LCC) and Social Life Cycle Assessment (SLCA) tools of LCA are not only used to assess the environmental, economic and social implications of goods

and services but also to reduce a product's resource use and environmental impact, improve its social and socio-economic performance throughout its life cycle, help redesign more efficient product supply chains and to avoid shifting problems from one stage of life cycle to another, from one geographic location to another. This analysis is used as a decision making tool to reduce energy, water and material consumption and associated environmental impacts of products and services during all phases of their life cycle in order to enable businesses to achieve circular and green economy.

A/Prof. Philipp Thies

Renewable Energy
University of Exeter
England

UNITED KINGDOM

Dr Philipp R. Thies is an Associate Professor in Renewable Energy (E&R) in the College of Engineering, Mathematics and Physical Sciences (CEMPS) at the University of Exeter. He holds a Dipl.-Wi.-Ing. degree in Energy and Environmental Energy from the University of Flensburg (Germany) and a PhD in Renewable Energy from the University of Exeter (UK). His research interest lies in the reliability engineering of renewable energy technologies with a focus on offshore energy. He has developed novel component reliability testing approaches, Bayesian statistical analysis approaches for situations of data uncertainty and has been deeply involved in several national and international research and industry-led projects seeking to technology demonstration in the field and at large-scale in the lab. His work has aligned computational modelling with application-driven design improvements and extensive planning, execution and evaluation of component reliability and testing campaigns. He was the Principal Investigator in the UK-China Newton Fund Marine Energy Challenge project "Energy absorbing mooring systems: Risk-based investigation for high-intensity typhoon conditions in China" (EP/M019942/1). The project investigated novel mooring solutions for extreme load conditions in China. He also the academic PI on an industry-led project funded by Innovate UK, titled "Dynamic Load Reduction and Station Keeping Mooring System for Floating Offshore Wind" (Grant Ref:101970) and is acting as the Program Lead for the BEng/MEng Energy Engineering.

https://emps.exeter.ac.uk/renewable-energy/staff/prt205

Room Parallel Sessions

Location : Room 1
Moderator : Ihsan Lumasa Rimra
Date : Saturday, October 24th
Track : Electrical Engineering

No	Time	Paper ID	Paper Title	Authors
1	13.00 – 13.15	1570659080	Solar Fish Dryers as a Solution for Improving the Quality of Fisheries Products to Support Green Technology during the Pandemic Covid-19	Mey Risa; Agus Irawan; Adi Pratomo; Anhar Khalid; Yusuf R Fauzi
2	13.15 – 13.30	1570659463	Design of Brackish Water Distillator Using Box and Corrugated Solar Radiation Absorbers Based on Stainless Steel for Communities on the Coast of Nada	Dedy Nataniel Ully; Agus Laka; Lukas Lantang
3	13.30 – 13.45	1570662328	Equal Gain Combining and Time-Reversal Precoding for Underwater Acoustic Communication	Yuning Widiarti
4	13.45 – 14.00	1570662867	Development of Spatial-Temporal Energy Consumption Model from Nighttime Radiance Satellite Data	I Ketut Swardika; Putri Alit Widyastuti Santiary; Ni Made Karmiathi
5	14.00 – 14.15	1570663206	Heat Transfer Comparison Between Continues And Intermittent Flow Controlled by Electrical System for Heat Recovery Unit in the Air Conditioning System	Putu Wijaya Sunu; Daud Simon Anakottapary; I Dewa Made Susila; Kadek Amerta Yasa; I Nyoman Eddy Indrayana; I Made Ari Dwi Suta Atmaja; I Wayan Edi Arsawan; I Ketut Suarsana; Andoko Andoko
6	14.15 – 14.30	1570663208	Preliminary Studies on Thermal Performance of Thermosyphon Solar Water Heating System	Putu Wijaya Sunu; I P G Sopan Rahtika; Idg Agustriputra; Anak Agung Mulawarman; I Nyoman Eddy Indrayana; I Made Suarta; I Wayan Edi Arsawan; I Gede Santosa; Ni Made Dwidiani

7	14.30-14.45	1570664660	Designing Local Culture-Based Radar Reflector for Increasing Safety Fishing Practices on Indonesian Traditional Fishing Vessel	Dian Asa Utari; I Putu Arta Wibawa; Mohammad Basuki Rahmat
8	14.45-15.00	1570664708	Analysis of Polycrystalline Solar Panel Energy Supply in Series and Parallel Circuits for On-grid PLTS	I Nyoman Sugiarta
9	15.00-15.15	1570664742	Design and Construction of a Portable Solar Water Pump 3000 Liter per Hour	Rusman Sinaga; Julius Tanesab; Marthen Beily; Agusthinus Sampeallo
	15.15-15.30		BREAK	
10	15.30-15.45	1570664833	The optimization of coal supply for planned pltu in west kalimantan province	Sartika Sartika
11	15.45-16.00	1570664851	Closed Loop System BLDC Motor For Electric-Bike	Hendi Purnata; Muhamad Yusuf; S Dwi
12	16.00-16.15	1570665128	The Designing of Local Culture-Based Radar Reflector for Improving Safety Fishing Practices on Indonesian Traditional Fishing Vessel	Dian Asa Utari; I Putu Arta Wibawa; Mohammad Basuki Rahmat
13	16.15-16.30	1570666605	Heating Fish Larvae Ponds with Halogen Lamps Using Solar Cells Source	I Gede Suputra Widharma; I Gde Nyoman Sangka; I N Sunaya; I Made Sajayasa; I Ketut Darminta
14	16.30-16.45	1570668695	Arrhythmia And Normal Identification Of Electrocardiogram (Ecg) Signals	Prihatin Oktivasari
15	16.45-17.00	1570668784	The feasibility Of Electrical Safety Grounding Tool For Medium Voltage Distribution With A3CS Cables	I Wayan Jondra; I N Sunaya; I Made Wiryawan

16	17.00-17.15	1570669397	Performance Evaluation Using FLC to Optimize the Output Power PV	Eni Wulandari; Indhana Sudiharto; Farid Dwi Murdianto

Location   : Room 2
Moderator   : Yulindon
Date   : Saturday, October 24th
Track   : Electrical Engineering

No	Time	Paper ID	Paper Title	Authors
1	13.00 – 13.15	1570669542	Energy Storage System Using Solar Energy Resources to Optimize Charging Process for DC Lighting Nanogrid System	Mukhammad Al Adi Fahtuz Zaqki; Farid Dwi Murdianto; Indhana Sudiharto; Kukuh Widarsono; Pressa Perdana Surya Saputra
2	13.15 – 13.30	1570669543	CUK Converter Using FLC to Manage Power Consumption from PV Directly	Anjas Wibisana; Indhana Sudiharto; Farid Dwi Murdianto; Anang Budikarso
3	13.30 – 13.45	1570669694	Solar Panel Characteristic Tracer for PV Test Solutions	Isdawimah Isdawimah; Nuha Nadhiroh; Damar Aji; Muhammad Rafi
4	13.45 – 14.00	1570672942	Development of Micro Hydro Power Screw Archimedes Turbines Types in Small Irrigation Channel	I Kadek Ervan Hadi Wiryanta; Achmad Wibolo
5	14.00 – 14.15	1570673271	The Prediction of Solar Energy in Supporting Green Energy at Bongkasa Pertiwi, Sangeh, Mengwi, Pelaga and Pangsan	Anak Agung Ngurah Gde Sapteka; Anak Agung Ngurah Made Narottama; I Gusti Agung Gede Wiadnyana; Kadek Amerta Yasa; I Wayan Suasnawa; I Gusti Putu Arka
6	14.15 – 14.30	1570673608	Effect of Turbine Inclination to the Performance of Micro Hydro Power Generator Screw Archimedes	Ketut Bangse; I Kadek Ervan Hadi Wiryanta
7	14.30-14.45	1570673706	Experimental Investigation of The Angle Inclination Variation Effects in Photovoltaic Array Prototype Modules	I Gusti Agung Bagus Wirajati; I Nengah Ardita; I Gede Nyoman Suta Waisnawa; I Dewa Made Cipta Santosa
8	14.45-15.00	1570673723	Analysis Key Performance of Refrigerator Prototype with Photovoltaic	I Dewa Made Cipta Santosa; I Gede Nyoman Suta Waisnawa; I Gusti Agung Bagus Wirajati

			Dynamic Characteristic Evaluation of the Hybrid Electric Vehicle by Simulation	Suryanto Suryanto
9	15.00-15.15	1570673853		
	15.15-15.30	BREAK		
10	15.30-15.45	1570673948	Monitoring System of 660Wp Solar Panel Connected to the ¾ hp Roasted Coffee Machine	I Gusti Ngurah Agung Dwijaya Saputra; Ida Bagus Ketut Sugirianta; Purbhawa I Made
11	15.45-16.00	1570677282	The Effect Of Electronic Disposition Of Spherical Electrode On Plasma Behavior In Argon Gas Media	David Koten; Monalisa Malelak; Mikael Namas
12	16.00-16.15	1570677563	Use of the Electronic Nose for Detection The Aroma of Brewing Coffee	Roza Susanti; Adriansyah Adriansyah; Fibriyanti Fibriyanti
13	16.15-16.30	1570677622	Implementation of Fuzzy-PI Controller for Constant Voltage Battery Charging System Using Zeta Converter	Sandra July Prananda; Epyk Sunarno; Indra Ferdiansyah
14	16.30-16.45	1570677628	Solar Panel Energy Modeling By Using Matlab Simulink	Tjeri Pangemanan; Vecky Poekoel; Alfrets Wauran; Arnold Rondonuwu
15	16.45-17.00	1570677637	Design and construction of a low cost of solar tracker two Degree of Freedom (DOF) Based on Arduino	Marthen Dangu Elu Beily; Rusman Sinaga; Mychel Pae; Zilman Syarif; Rochani Rochani
16	17.00-17.15	1570678334	The Use of Electronic-Nose for Detection of Ethanol Levels in Green Betel Leaf Stew	Zas Ressy Aidha; Milda Yuliza; Roza Susanti

Location   : Room 3
Moderator   : Deddy Prayama
Date   : Saturday, 24 October 2020
Track   : Computer Science 1

No.	Time	Paper ID	Paper Title	Author
1	13.00 – 13.15	1570642376	Fuzzy Logic for Automatic Watering System of Smart Agriculture with IoT	M. Udin Harun Al Rasyid; Ahmad Syauqi Ahsan
2	13.15 – 13.30	1570658450	Adaptive-gain second-order sliding mode control for balancing an underactuated unicycle robot	Yusie Rizal; Feriyadi Marzuki
3	13.30 – 13.45	1570659633	The Cascade Linear Quadratic Gaussian (LQG) Controller for Automatic Landing Systems in Aircraft	Mohammad Abu Jami`in
4	13.45 – 14.00	1570661582	Study of LORA System in the EEPIS Campus Environment	Tri Budi Santoso; Ahmad Zainudin
5	14.00 – 14.15	1570662792	Feature Extraction Performance on Classified Methods for Text Sentiment Analysis	Putu Manik Prihatini; Komang Ayu Triana, Indah; Gusti Ayu Nyoman Sukerti; I Nyoman Eddy Indrayana
6	14.15 – 14.30	1570662955	Static Web Workload Distribution Test on Cluster-based Web Server System with Locality-Based Least Connection Algorithm	Nongki Angsar; Petrisia Sudarmadji; Lita Alfriany Ndoloe
7	14.30 – 14.45	1570663444	Document Encryption Through Asymmetric RSA Cryptography	I Made Ari Dwi Suta Atmaja; I Nyoman Gede Arya Astawa; Ni Wayan Wisswani; I Made Riyan Adi Nugroho; Putu Wijaya Sunu; I Komang Wiratama
8	14.45 – 15.00	1570663483	Object Detection Using Color Dissimilarity Based Segmentation Method	I Gede Made Karma; I Made Dwi Jendra Sulastra; Jeni Susanti
9	15.00 – 15.15	1570663521	Augmented Reality Mobile Application Base On Marker Object	I Nyoman Gede Arya Astawa; I Made Ari Dwi Suta Atmaja; Ni Gusti Ayu Putu Harry Saptarini; Sri Andriati Asri; Made Leo

				Radhitya
	15.15 – 15.30		BREAK	
10	15.30 – 15.45	1570663694	Economic Dispatch in IEEE 26 Bus System using Quantum Behaved Particle Swarm Optimization	Pressa Perdana Surya Saputra; Farid Dwi Murdianto; Kukuh Widarsono; Rifqi Firmansyah
11	15.45 – 16.00	1570663815	Balancing Control System For Humanoid Robot Using Pressure Sensor	Novian Fajar Satria
12	16.00 – 16.15	1570663835	Warning System Design to Detect Suspicious Activities in a Network	Fajar Ratnawati; Agus Tedyyana
13	16.15 – 16.30	1570663845	Secure Electronic Document with QR Code and RSA Digital Signature Algorithm	Kadek Amerta Yasa; Putu Gde Sukarata; I Gusti Putu Mastawan Eka Putra; I Made Riyan Adi Nugroho; I Nyoman Gede Arya Astawa

Location   : Room 4
Moderator   : Yance Sonatha
Date   : Saturday, 24 October 2020
Track   : Computer Science 2

No.	Time	Paper ID	Paper Title	Author
1	13.00 – 13.15	1570664347	Application of Simple Additive Weighting (SAW) Method And Decision Table in Decision Support System Determines The Level of Problem Student Punishment Levels	Riyadi Purwanto
2	13.15 – 13.30	1570664506	State Management of API Web Service Using Redux on React Native App	Miftachudin Miftachudin; Muhammad Khoirul Hasin; Afif Zuhri Arfianto
3	13.30 – 13.45	1570664681	Optimization of Weighted Product Methods for Choosing Internet Providers	Niken Dwi Nirma; Linda Perdana Wanti; Riyadi Purwanto
4	13.45 – 14.00	1570664985	Android Application of Booking System of Parking Slot using MQTT Protocol	Muhammad Khoirul Hasin; Mohammad Basuki Rahmat; Angellia Kusuma Putri
5	14.00 – 14.15	1570665046	Big Data Analytics for COVID-19 Pandemic Prediction in Indonesia	Dewi Yanti Liliana; Hata Maulana
6	14.15 – 14.30	1570666255	Private Repository Of Bali State Polytechnic Lecturer	Putu Gde Sukarata; I Gede Suputra Widharma; I Gusti Ngurah Bagus Catur Bawa; Komang Ayu Triana, Indah; I Gde Nyoman Sangka; TA I Ketut
7	14.30 – 14.45	1570666779	Developing Monitoring System based Internet of Things for Vibration Analysis	M. Udin Harun Al Rasyid; Ahmad Rifa'i; Ahmad Syauqi Ahsan
8	14.45 – 15.00	1570668348	Implementation of Command Query Responsibility Segregation (CQRS) in The Competency Test Information System	I Gusti Ngurah Bagus Catur Bawa; Sri Andriati Asri; I Wayan Suasnawa; Anak Agung Ngurah Gde Sapteka; Ni Gusti Ayu Putu Harry Saptarini; Kadek

				Amerta Yasa
9	15.00 – 15.15	1570669242	Design and Development of Multiple Mobile Manipulator Robots using Gazebo-ROS	Pipit Anggraeni; Ismail Rokhim; Rois Salam
	15.15 – 15.30	BREAK		
10	15.30 – 15.45	1570669379	Nutrient Concentration Control System in Hydroponic Plants Based on Fuzzy Logic	Nurmahaludin Nurmahaludin; Gunawan Cahyono; Joni Riadi
11	15.45 – 16.00	1570669437	Developing English Grammar Learning Application based on Gamification	Andhik Ampuh Yunanto (Politeknik Elektronika Negeri Surabaya & Institut Teknologi Sepuluh Nopember, Indonesia); Yanuar Risah Prayogi and Zulhaydar Fairozal Akbar (Politeknik Elektronika Negeri Surabaya, Indonesia); Darlis Herumurti and Siti Rochimah (Institut Teknologi Sepuluh Nopember, Indonesia)
12	16.00 – 16.15	1570669558	Implementation and Monitoring Heart Rate and Body Temperature using IoT	Nurul Fahmi (Politeknik Negeri Bengkalis - Indonesia, Indonesia)
13	16.15 – 16.30	1570669617	Multiple Festo Robotino Navigation using Gazebo-ROS Simulator	Ismail Rokhim, Pipit Anggraeni and Rifqi Alvinda (Bandung Polytechnic for Manufacturing, Indonesia)

No.	Time	Paper ID	Paper Title	Author
1	13.00 – 13.15	1570669832	Non-contact thermometer for humans with internal data storage and voice output features	Hikmatul Amri, Stepan Asril and Jefri Lianda, Jef (Politeknik Negeri Bengkalis, Indonesia)
2	13.15 – 13.30	1570669863	Vehicle Additional Security System Design: Combination Of Touch Key And Voice Command	Muhammad Firdaus Jauhari, Rusmini Sri Maryati and Yuan Perdana (Politeknik Negeri Banjarmasin, Indonesia)
3	13.30 – 13.45	1570669883	Dynamic Obstacle Avoidance on Middle Size League Robot Soccer ERSOW Using Subtargets	Renardi Adryantoro Priambudi, Iwan Kurnianto Wibowo, Bagus Nugraha Deby Ariyadi, Bima Sena Bayu Dewantara, Mochamad Mobed Bachtiar and Erna Alfi Nurrohmah (Politeknik Elektronika Negeri Surabaya, Indonesia)
4	13.45 – 14.00	1570669886	The Effect of Font Variation in The Accuracy of Image to Text Conversion	Vera Firmansyah (Academy of Metrology and Instrumentation, Indonesia); Amalia Rakhmawati (Ministry of Trade & Calibration Laboratory / Academic Metrology, Indonesia)
5	14.00 – 14.15	1570669892	Automatic Guided Vehicle (AGV) Design Using an IoT-based RFID for Location Determination	Mohd Iqbal (Stikom Muhammadiyah Batam & University Tun Hussien Onn Malaysia, Indonesia)
6	14.15 – 14.30	1570671917	Comparison Gestures Recognition Using K-NN and Naïve Bayes	Daniel Pamungkas (Politeknik Negeri Batam, Indonesia)
7	14.30 – 14.45	1570672089	Disaster Robot Navigation using Behavior-based Systems	Son Kuswadi (Politeknik Elektronika Negeri Surabaya & Politeknik Negeri Banyuwangi, Indonesia); Mohamad Nasyir Tamara (Politeknik Elektronika

				Negeri Surabaya & EEPIS, Indonesia); Bagoes Brahmantio (PT Prima Nur Panurjwan, Samudera Indonesia Group, Indonesia); Debynata Sugijharto (PT Pabrik Kertas Tjiwi Kimia, Indonesia); Mohammad Nuh (Institut Teknologi Sepuluh Nopember, Indonesia)
8	14.45 – 15.00	1570672319	Design of Tracker Based PV System for Health Care Facilities in Remote Islanded	Syafii Syafii; Lovely Son; Rahmad Fahreza
9	15.00 – 15.15	1570672891	School Bus Routing in The City of Denpasar Using Differential Evolution Algorithm	I Wayan Suasnawa; I Ketut Gede Sudiartha; I Gusti Ngurah Bagus Catur Bawa; Anak Agung Ngurah Gde Sapteka; I Nyoman Eddy Indrayana; I Gusti Agung Made Sunaya
	15.15 – 15.30		BREAK	
10	15.30 – 15.45	1570673437	Application of Object Recognition for Plastic Waste Detection and Classification Using YOLOv3	I Wayan Raka Ardana; Ida Bagus Irawan Purnama; I Made Sumerta Yasa
11	15.45 – 16.00	1570673659	Multidimensional Echocardiography Image Segmentation using Deep Learning Convolutional Neural Network	Hasan Imaduddin; Riyanto Sigit; Anhar Risnumawan
12	16.00 – 16.15	1570673730	Autonomous Car Based on Teaching-and-Playback Control	Noor Cholis Basjaruddin
13	16.15 – 16.30	1570673741	Implementation of Using HMM-GA in Time Series Data	Agung Yuniarta Sosiawan; Rani Nooraeni; Liza Kurnia Sari

Location   : Room 6
Moderator   : Alde Alanda
Date   : Saturday, 24 October 2020
Track   : Computer Science 4

No.	Time	Paper ID	Paper Title	Author
1	13.00 – 13.15	1570673955	A Low Cost Fall Detection Device Base On Accelerometer Sensor And Notifications For Vertigo And Syncope Patient	Yulastri Yulastri; Era Madona; Muhammad Irmansyah; Anggara Nasution
2	13.15 – 13.30	1570676353	Real-time Monitoring of Electrical Energy Consumption Based on Internet Of Things	Riklan Kango; Hadiyanto Hadiyanto; Suhaedi Suhaedi; Billy Nurhadi; Mohamad Ilyas Abas; Steven Humena
3	13.30 – 13.45	1570676398	Optimization of Capacitor Placement in Radial Distribution System Using Integer Encoding Genetic Algorithm	I Ketut Suryawan; I Gusti Ngurah Agung Dwijaya Saputra
4	13.45 – 14.00	1570676780	Mobile Phone Scanner Technology Adoption - A Comparison Analysis	Indra Surya Permana; Taufik Hidayat; Rahutomo Mahardiko
5	14.00 – 14.15	1570677000	A pH Level Sensing Indicator and Regulation System Using Computer Vision	Renann G Baldovino; Tristan Joseph Limchesing
6	14.15 – 14.30	1570677256	Integrated Information System Model Development in Manado State Polytechnic	Marike Kondoj
7	14.30 – 14.45	1570677435	Learn From Home Application of Politeknik Negeri Padang Students During Covid 19 Pandemic	Hidra Amnur
8	14.45 – 15.00	1570677506	3D Asset for Web-based Virtual Engineering Platfrom as Implementation of Industry 4.0	Erlangga Hendrika Putra Utama; Dwi Kurnia Basuki; Sritrusta Sukaridhoto
9	15.00 – 15.15	1570677514	Segmentation of Finger Nails Image based on Image	Ima Kurniastuti; Tri Deviasari Wulan

			Processing methods	
	15.15 – 15.30		BREAK	
10	15.30 – 15.45	1570677533	Conditional Generative Adversarial Network for Multi-Pose Face Images Augmentation in Face Recognition	Made Satria Wibawa; I Md. Dendi Maysanjaya
11	15.45 – 16.00	1570677537	Management Information System Identification and Projection of Staff Requirements at Manado State Polytechnic	Willem Gilbert Pomantow; Alfrets Wauran; Jedithjah Papia; Anthonius Manginsela; Selvi Kalele
12	16.00 – 16.15	1570677556	Identifying the Existence of Crew Swaps on Airline Crew Recovery Problems	Khusnul Novianingsih
13	16.15 – 16.30	1570677592	Early Covid-19 Detection with Contactless Method	Mikael Namas; David Koten

No.	Time	Paper ID	Paper Title	Author
1	13.00 – 13.15	1570664009	User Requirement and Use Case Diagram for Traveler Tracking Application In Tourist Destination	I Ketut Gede Sudiartha; I Nyoman Eddy Indrayana; I Wayan Suasnawa; I Made Ari Dwi Suta Atmaja; Komang Ayu Triana, Indah; Putu Wijaya Sunu
2	13.15 – 13.30	1570664195	Design and Implementation of Smart Village Application	Sri Andriati Asri; I Nyoman Gede Arya Astawa; I Gusti Agung Made Sunaya; I Made Riyan Adi Nugroho; I Nyoman Eddy Indrayana; Widyadi Setiawan
3	13.30 – 13.45	1570664335	Deaerator Tank Level Control Using Direct Synthesis Tuning Method	Erik Tridianto; Prima Dewi Permatasari; Hendrik Elvian Gayuh Prasetya; Putri Febry Wulandari
4	13.45 – 14.00	1570669620	Face Detection Model for Thermal Images	Hendrick Hendrick, Surfa Yondri, Rahmat Hidayat, Albar Albar, Hanifa Fitri and Ivan Finiel Bagariang (Politeknik Negeri Padang, Indonesia)
5	14.00 – 14.15	1570669714	Low Cost Wireless Sensor Network for Smart Gas Metering using Antares IoT Platform	Muhamad Cahyo Ardi Prabowo and Sidiq Syamsul Hidayat (Politeknik Negeri Semarang, Indonesia); Fitya Luthfi (PT. Telekomunikasi Indonesia, Indonesia)
6	14.15 – 14.30	1570669820	Application of Google Map API for Web Tourism Destination Information Service in Southeast Minahasa Regency	Olga Melo, Anthon Kimbal and Octavianus Lintong (Politeknik Negeri Manado, Indonesia); Harson Kapoh (Politeknik Negeri Manado & Goverment, Indonesia); Ivonne Putong and Pearl Wenas (Politeknik Negeri

				Manado, Indonesia)
7	14.30 – 14.45	1570673803	Estimating Village Development Index Based on Satellite Imagery Using Machine Learning Application	Candra Dian Purnawanto; Rani Nooraeni; Nucke Widowati Kusumo Projo
8	14.45 – 15.00	1570673897	The Utilization of G-Suite Features Combination on Developing Small Size of Android Application	Shumaya Resty Ramadhani
9	15.00 – 15.15	1570673950	The Covid-19 Detection with Contactless Method based on Deep Learning	Ismail Ismail
	15.15 – 15.30	BREAK		
10	15.30 – 15.45	1570677595	Website Development as a Promotional Supporting Tool on Butterfly Park	Adhistya Erna Permanasari; Intan Sulistyaningrum Sakkinah
11	15.45 – 16.00	1570677602	A unity-norm preserving quaternion extended Kalman filter	Iyad Hashlamon
12	16.00 – 16.15	1570677612	Supply Chain Management: A Systematic Literature Review	Tri Pujadi; Bachtiar H. Simamora; Haris Setia Budi; Wahyu Sardjono; Ximing Ruan; Witarsyah Witarsyah
13	16.15 – 16.30	1570672094	Group Decision Support Systems with AHP, TOPSIS and BORDA for Determining Loan Approval in Cooperatives	Meri Azmi; Yance Sonatha; Indri Rahmayuni; Dwiny Meidelfi

Location   : Room 8
Moderator   : Desmarita Leni
Date   : Saturday, 24 October 2020
Track   : Mechanical Enginering 1

No.	Time	Paper ID	Paper Title	Author
1	13.00 – 13.15	1570661266	Effect of Carburizing Temperature and Size Schleichera Oleosa Carbonized Chorcoal on the Mechanical Properties of Low Carbon Steel	Agustinus Deka Betan; Amiruddin Abdullah; Fransisko Piri Niron
2	13.15 – 13.30	1570661267	The Comparison of Quality Snapper Selection Results Using WASPAS and WP Methods	Linda Perdana Wanti; Oman Somantri
3	13.30 – 13.45	1570662596	Study About Normalizing Of AISI 1010 Steel Result Hardened By Manganese Stone Powder Using True Experimental Method	Oktovianus Dharma Rerung; Fransiskus Sapar; Roymons Jimmy Dimu
4	13.45 – 14.00	1570662639	Optimizing The Performance Of Diesel Engine With Dexlite and Biodiesel Fuels From Local Virgin Coconut Oil	Aris Palinggi; Lukas Lantang
5	14.00 – 14.15	1570662752	Experimental Design Of Hard Facing Welding In Crusher Clinker Cooler Hammer With Factorial Methods	Fransiskus Sapar; Oktovianus Dharma Rerung; Roymons Jimmy Dimu
6	14.15 – 14.30	1570662866	Design, Fabrication and Performance Evaluation of Screw Conveyor Type of Pig feed mixing machine	Frans Mangngi; Aris SPd. MM; Rafael Mado; Made Aryana
7	14.30 – 14.45	1570663286	Design of Vehicle Disability User Seats Wheel	Yudi Oktriadi
8	14.45 – 15.00	1570663562	Physico-mechanical Characteristics Enhancement of Oil Palm Wood After Treatment with Polymerised Merbau Extractives Resin	Jamaludin Malik; Adi Santoso
9	15.00 – 15.15	1570664015	Performance Analysis Of Air Conditioning	Jhon Arnoldos Wabang; Edwin Pieter Hattu;

			System Using Freon R22 And Musicool (Mc 22) Based On Speed Of Variation Of Air Conditioning Condensers	Jufra Daud Abanat
	15.15 – 15.30		BREAK	
10	15.30 – 15.45	1570664039	Phytochemical and Antidiabetic Activity Studies of n-Hexane, Ethyl acetate and Methanol Extracts of Matoa (Pometia pinnata) Fruit Peel Using Alpha-Glucosidase Enzyme	Erna Styani; Candra Irawan; Imalia Putri; Maman Sukiman
11	15.45 – 16.00	1570664131	The Effect Of Heating Temperature And Duration Process Of Nira Fermentatiom By The Content Of Alcohol In The Process Of Arak Distilation	I Gede Nyoman Suta Waisnawa; I Made Sudana
12	16.00 – 16.15	1570664246	Process Statistic of Thermoplastics for Producing Injection Molding Product using On-Line Quality Control in The Injection Machine	Riona Ihsan Media; Riky Adhiharto
13	16.15 – 16.30	1570664663	Implementation of Response Surface Methods For Process Parameters Optimization In Laminated Wood Manufacturing	Farizi Rachman; Bayu Kurniawan; Oktaviana Vara
14	16.30 – 16.45	1570664784	Assessment of Positional Error in CNC Machine Tools Using Laser Interferometer	Herman Budi Harja; Addonis Candra
15	16.45 – 17.00	1570664875	Mechanical Feed System Performance Test On Houshold Grain Grinding Machine	I Made Sudana; I Gede Nyoman Suta Waisnawa
16	17.00 – 17.15	1570665142	Optimization Biodiesel Production using CaO Nanocatalyst from Egg Shell Waste	Rif'ah Amalia; Joke Pratilastiarso

Location   : Room 9
Moderator   : Khairul Amri
Date   : Saturday, 24 October 2020
Track   : Mechanical Enginering 2

No.	Time	Paper ID	Paper Title	Author
1	13.00 – 13.15	1570666037	The Effect of Gebang Midrib Fiber (Corypha Utan Lamarck) Length Variations For the Strength of the Composite Impact	Amros Alfonsius Tuati; Dedi Ully; Edwin Pieter Hattu
2	13.15 – 13.30	1570666672	Performance Optimalization and Techno-Economic Analysis Liquid Smoke Pyrolysator of Kesambi with LPG Fuel	Aloysius Leki; Mamik Mardyaningsih; Roymons Jimmy Dimu
3	13.30 – 13.45	1570668825	Design of Chicken Feed Mixer Machine Model To Increase Work Productivity	Ketut Gde Juli Suarbawa; Anak Agung Mulawarman; I Gede Santosa
4	13.45 – 14.00	1570669210	The Reduction of CO and SO2 by Natural Zeolites in Catalytic Converter of Diesel Engine	Abdul Hamid; Auliana Wilujeng; Ainur Rohman; Faizatur Rohmah; Susi Khalifah; Mohammad Abdullah
5	14.00 – 14.15	1570669477	AC8A Aluminum Quench Modification Using Banana Tree Sap Fluid	Roymons Jimmy Dimu; Antonius Pangalinan; Oktovianus Dharma Rerung; Mamik Mardyaningsih
6	14.15 – 14.30	1570669479	3D CFD Simulation Analysis of Drying Cabinet at Transient Condition	Arrad Ghani Safitra; Lohdy Diana; Julfan Hafiz Farezza
7	14.30 – 14.45	1570669599	Process Simulation of Glycerol Conversion to Formic Acid Using Hydrothermal Oxidation	Dhyna Analyes Trirahayu
8	14.45 – 15.00	1570669618	Numerical Analysis of the Effect of Serrated Fin To the Heat Transfer in the Condenser	Febrian Kusumawardani; Lohdy Diana; Wahyu Nur Fadilah
9	15.00 – 15.15	1570669656	Analysis of Total Cost Reduction on ID Fan Maintenance with Reliability Centered Maintenance	Muhammad Fakhrul Muqauwim; Hendrik Elvian Gayuh Prasetya; Radina Nurisma
	15.15 – 15.30		BREAK	
10	15.30 – 15.45	1570669665	Automatic Hull Fracture Detection	Agus Khumaidi; Ryan Adhitya

			System Using Template Matching	
11	15.45 – 16.00	1570669756	Comparative Analysis of Press Tool Design For Seat Lock Patch Of Mobilio Car With AutoForm Technology	Meri Rahmi
12	16.00 – 16.15	1570669824	Maintenance Analysis of Boiler Feed Water Pump Using Quantitative Methods	Hendrik Elvian Gayuh Prasetya; Wilda Safira Rahmania; Fifi Hesty
13	16.15 – 16.30	1570670937	The Effect Of Thermomechanic Treatment On The Mechanical Properties And Micro Structure Of The Titanium Ti-6al-4v Alloy For Orthopedic Applications	Sir Anderson; Fernando Fernando; Jon Affi; Yuli Yetri; Gunawarman Gunawarman
14	16.30 – 16.45	1570672657	Experimental Analysis Of The Effect Addition Heat Cover In Distillation Reactor	I Gusti Ngurah Ardana; Putu Darmawa; Ida Bagus Gde Widiantara
15	16.45 – 17.00	1570672921	Design of Prada Paint Dulang Craft Drying Machine to Improve Product Quality and Work Productivity of Dulang Fiber Crafters in Bangli Regency	Anak Agung Mulawarman; Ketut Gde Juli Suarbawa; Gede Oke Pujihadi
16	17.00 – 17.15	1570673086	Application of Forging Hammer to Increases Productivity of Balinesse Blacksmith	I Gede Santosa; M Yusuf; I Nyoman Gunung; Ketut Rimpung

Location   : Room 10
Moderator   : Valdi Rizki Yandri
Date   : Saturday, 24 October 2020
Track   : Enginering

No.	Time	Paper ID	Paper Title	Author
1	13.00 – 13.15	1570673639	Tensile Test Simulation for Polymer Composites	Lohdy Diana; Arrad Ghani Safitra; Gilang Muhammad
2	13.15 – 13.30	1570676999	A Neural Network Approach in Reducing Offset Printing Spoilages on Solid Bleached Boards	Renann G Baldovino; Tristan Joseph Limchesing
3	13.30 – 13.45	1570677001	Implementation of Neural Network for the Liver Disease Classification	Aldrin Joshua Tolentino; Renann G Baldovino
4	13.45 – 14.00	1570677130	Control System in Crusher and Sorting Nutmeg Seed Machine Based on Arduino Uno	Alfred Mekel; Tineke Saroinsong
5	14.00 – 14.15	1570677286	Mechanical Properties of Imitation Sprocket Due to Treatment of Candlenut shell Charcoal	Fransisko Piri Niron; Agustinus Deka Betan
6	14.15 – 14.30	1570677649	Effects of Radius Threshold on Delaunay and Alpha-Shapes Mesh Generation	Dwi Anggara Putra; Indra Hardian
7	14.30 – 14.45	1570678037	Controlling the Temperature of Boiling Sugarcane Water Produces Biotanol	Tuti Anggraini; Efendi Muchtar; Alfian Alfian
8	14.45 – 15.00	1570677614	The Applications of ordering materials using Time Series Forecasting with CB Predictor	Tri Pujadi; Bachtiar H. Simamora; Ximing Ruan; Wihendro Wihendro; Wahyu Sardjono; Harkat Christian Zamasi
9	15.00 – 15.15	1570677650	MQTT Protocol Implementation for Monitoring of Environmental Based on IoT	Afritha Amelia; Roslina Roslina; Nurul Fahmi; Heru Pranoto; Bakti Viyata Sundawa
	15.15 – 15.30		BREAK	
10	15.30 – 15.45	1570677654	Prediction of Mining Corporation Stock	Prajna Deshanta Ibnugraha

			Index Based on Gold Price Index and Exchange Rate of Currency	
11	15.45 – 16.00	1570678853	Effect of Time and Temperature of Electrolyte Solution on Surface Thickness and Hardness Result of Electroplating Nickel on Steel with the Help of a Magnetic Stirrer	Rakiman Rakiman; Nico Rensen; Menhendry Menhendry; Hanif Hanif; Jon Affi; Yuli Yetri
12	16.00 – 16.15	1570669532	Modelling and Simulation of Battery Charger Li-Ion Using CC-CV PI Method	Munir Rifa'i; Novie Ayub Windarko; Farid Dwi Murdianto
13	16.15 – 16.30	1570663955	The Comparison Of Exhaust Gas Emission Between Fuel Injection and Conventional System	I Made Suarta and I P G Sopan Rahtika; Putu Wijaya Sunu, I Nengah Darma Susila and Ketut Bangse
14	16.30 – 16.45	1570677130	Control System in Crusher and Sorting Nutmeg Seed Machine Based on Arduino Uno	Alfred Mekel and Tineke Saroinsong

Location   : Room 11
Moderator   : Gusri Yaldi
Date   : Saturday, October 24th
Track   : Civil engineering

No	Time	Paper ID	Paper Title	Authors
1	13.00 – 13.15	1570656253	Structural safety and analytic comparison of mooring bollards	I Putu Sindhu Asmara; Budianto Budianto; Zullaiqa Nurrochmah; Tri Tiyasmihadi; Fais Hamzah; Putu Gede Bayu Agastya
2	13.15 – 13.30	1570658522	Perspective Of Population Growth And Clean Water Supply In Denpasar, Bali-Indonesia	Ni Made Nurcita Budi; Lilik Sudiajeng; I Made Tapa Yasa
3	13.30 – 13.45	1570659487	Effect of Oesapa Commercial Activities Towards Traffic Performance on Timor Raya Street Kupang	Mateus Sodanango; Amy Wadu; Johan Lada; Jusuf Rafael
4	13.45 – 14.00	1570659612	Plastic Waste Processing to be Alternative Fuels to Create Clean and Healthy Environment	Rafael Mado; Frans Mangngi; Irene Budayawati
5	14.00 – 14.15	1570663350	Application Of Geographic Information System For The Identification Of Flood And Landslide Mitigation In Badeng Watershed	Zulis Erwanto; Dewi Aras Pratiwi
6	14.15 – 14.30	1570664129	Conservation of Water Resources Based on Local Wisdom in Sangeh Village	I Gusti Lanang Made Parwita; Made Mudhina; I Nyoman Anom Purwa Winaya
7	14.30-14.45	1570664391	The influence of polypropylene fibers on crushed glass RC mixed using seawater curing	Albert Aun Umbu Nday

8	14.45-15.00	1570664466	Rock Slope Stability Analysis in Melasti Beach Area - Ungasan, Bali	I Arya; Suryanegara Dwipa RS; I wayan Wiraga; I Nyoman Ramia; I Made Wahyu Pramana
9	15.00-15.15	1570664593	Construction System of Building Block for the Child Pedestrian-Friendly Pathway Prototype	Febriane P Makalew
	15.15-15.30		break	
10	15.30-15.45	1570665016	Vehicle Classification and Violation Detection on Traffic Light Area using BLOB and Mean-Shift Tracking Method	Mochamad Mobed Bachtiar; Adnan Rachmat Anom Besari; Achmad Rahman Mawardi
11	15.45-16.00	1570665032	Connection Model Of Steel Pipe Construction Of Billboard Structure Pile	Joni Irawan; Luki Wicaksono; Aunur Rafik
12	16.00-16.15	1570667965	The Effect Of Application Of Vertical Garden In The Wall To The Wall Thermal Transmittance In The Room And Its Energy Consumption	Wardika Wardika; Ahmad Kartika; Fauzun Fauzun
13	16.15-16.30	1570668451	Effect of using laminated bamboo reinforcement and micro polypropylene fibers on the concrete slab	Faisal Ananda
14	16.30-16.45	1570668489	Effect of drying time, temperature and heating process of red brick on the pressure test using the response surface methodology	Yuliyanto Aziz

15	16.45-17.00	1570668575	Distribution of ideal Soil Composition combined with 3 Dimensional Contour of Mahat Watershed for sustainable Gambir farming	Aflizar Aflizar
16	17.00-17.15	1570668996	Analysis of Non Domestic Water Needs In The Clean Water Supply in Badung Regency,Bali	Suryanegara Dwipa RS; I Gusti Lanang Made Parwita; Made Mudhina; Anak Agung Putri Indrayanti

Location   : Room 12
Moderator   : Andi Syukri
Date   : Saturday, October 24th
Track   : Civil engineering

No	Time	Paper ID	Paper Title	Authors
1	13.00 – 13.15	1570669410	Structure Analysis of Building Functions Transition on the Earthquake Area Five Reviewed from Costs and Time Schedule	I Wayan Suasira; I Wayan Intara; I Gusti Agung Arie Krismayanti; I Nyoman bawa Bagiada
2	13.15 – 13.30	1570669424	Fulfilment Quality Of Service At El Tari Airport Kupang For Increasing Satisfaction Passenger	Anie Tuati; Deasy Daud; Amy Wadu
3	13.30 – 13.45	1570669429	Technical Review Of Port Terminal New Beach Rote Ndao	Deasy Daud; Anie Tuati; Yacop Hayer
4	13.45 – 14.00	1570672900	Redesign of Horizontal Coffee Roasters With Temperature, Time and Rotation Controls	Ketut Suherman; NiWayan Merda Surya Dewi; I Suirya
5	14.00 – 14.15	1570672911	Optimization Energy Demand of Balinese Building for Tourist Green Accommodation	I Dewa Made Cipta Santosa; I Gusti Agung Gede Wiadnyana
6	14.15 – 14.30	1570673724	Design of Windstorm Disaster Early Warning System Based on IoT and Hall Effect Sensor in the Critical Area Location	Herman Yuliandoko; Vivien Wardhany; Subono Subono; Sholeh Hadi Pramono; Ponco Siwindarto
7	14.30-14.45	1570673887	Application of Smart Waste Management in the Department of Civil Engineering, Bali State Polytechnic	I Gusti Agung Istri Mas Pertiwi; Wayan Sri Kristinayanti; Ketut Wiwin Andayani

8	14.45-15.00	1570673965	Analysis Of Batang Kandis River Capacity With Variation of Design Flood Discharge	Dalrino Dalrino
9	15.00-15.15	1570674634	Risk Management of Material Laboratory, Department of Civil Engineering, Bali State Polytechnic for Preparation of SMK3 Program	I Gusti Agung Istri Mas Pertiwi
	15.15-15.30		break	
10	15.30-15.45	1570676451	Hydrological Modeling Using SWAT Due to Landslides In The Badeng Watershed	Zulis Erwanto; Abdul Holik; Dadang Pranowo; Sandy Prastyo; Abdul Husna
11	15.45-16.00	1570677338	Settlement Characteristics on Soft Soils Due to Box Traffic on The Toll Road	Liliwarti Liliwarti
12	16.00-16.15	1570677425	Resistance and Intact Stability Calculation of Hull Form Tourism Boat Siak River For Passenger Safety	Romadhoni Romadhoni; Budhi Santoso; Muhammad Ikhsan
13	16.15-16.30	1570677523	Water Hyacinth Extract Addition Towards Tofu Wastewater Degradation by Anaerobic Treatment	Herawati Budiastuti; Yuliana Nur Amanah; Emma Hermawati Muhari; Laily Isna Ramadhani; Ranggi Octaviani Pratiwi
14	16.30-16.45	1570677564	Study of Rainfall Erosivity and Erosion Rate with MUSLE Method Using Geographic Information System In Badeng Watershed	Zulis Erwanto; Nila Lestari
15	16.45-17.00	1570677620	Experimental Study on Waste Valve Load's Effect on the Performance of Hydram to Water the Paddy Field in Pakandangan Village	Ichlas Nur; Nota Effiandi; Zulhendri Zulhendri; Vera Veronica

| 16 | 17.00-17.15 | 1570670924 | Prioritizing Economic Sectors for Post-Pandemic Recovery: Examining National and Provincial Scales in Indonesia | Adrianus Amheka; Kathleen Aviso; Vincent Joseph Dacanay; Hoa Thi Nguyen; Krista Danielle Yu |