IC.ITS '21

2ND INTERNATIONAL CONFERENCE ON INNOVATIVE TECHNOLOGY & SCIENCE

2ND INTERNATIONAL CONFERENCE ON INNOVATIVE TECHNOLOGY & SCIENCE 2021

THEME : FORGING A SMART TECHNOLOGICAL WORLD

25TH & 26TH NOVEMBER 2021
(THURSDAY & FRIDAY)

Scope :
Engineering, Computer Science, Agriculture, Safety

PROGRAM BOOK

Organized by: UCYP University College of Yayasan Pahang, An Adaptive University

Faculty of Science, Engineering & Agrotechnology (FSEA) and Research Management Centre (RMC)

In collaboration with: MBOT Lembaga Teknologis Malaysia, Malaysia Board of Technologists; ISSAS; 北京信息科技大学 Beijing Information Science & Technology University

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2ND INTERNATIONAL CONFERENCE ON INNOVATIVE TECHNOLOGY & SCIENCE 2021 (IC.ITS'21)

"Forging A Smart Technological World"

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INTRODUCTION

CO-ORGANIZER

IN COLLABORATION WITH

PUBLICATION SUPPORT

Assalamu'alaikum WBT.
Distinguished Keynote Speakers
Invited Speakers, Delegates
Presenters, participants, and committee
Thank you one and all.

Welcome to the 2nd International Conference on Innovative Technology and Science (IC.ITS'21). It is a glorious moment to extend my warm wishes on behalf of University College of Yayasan Pahang or UCYP Malaysia. I would like to convey my heartfelt gratitude to the Keynote Speaker for accepting the invitation and presiding over this conference's theme on "Forging A Smart Technological World".

It gives me immense warmth and great pleasure to grace all of your presence in the interest of the entire committee. It also gives me tremendous contentment to be presenting the welcome speech amongst the most esteemed personalities who have won accolades in their respective fields. Before we begin this conference, I would like to express my heartfelt gratitude to all of you who sincerely committed to this event to make it a success. This event would have been impossible without the support of each and every one present here.

The dawn of the 21st century brought a technological revolution that we are still riding today. Transitioning from IR4.0 to the fifth, we have become so used to the fast pace of innovation that we continue to expect more effective and work efficient technological solutions. Thus, making the world a better place through application of science and technology can contribute to less electricity consumption and energy efficiency, reduces the ecological footprint of farming, develops global food security and reducing climate change. Hereby, this seminar was organized and conducted for the general audience to gain insight and information that would remain effective in their life, exercises, and work.

Each topic for presentation involving scope of Computer Science, Engineering Agriculture and Multidisciplinary science for these two days' conference was chosen, keeping in mind the interest of experts.

Through this conference, an individual is given an international platform to share their knowledge, research findings and ideas, and to publish their papers in international reputable journals, which are indexed such as in Scopus and Google Scholar.

I hope you will enjoy the hospitality during this virtual conference. I also would like to thank the committee members who have great effort to make this event well-organized. Then, we do hope that this conference can give beneficial contributions in order to merging the element of Computer Science, Engineering, Agrotechnology and Safety for better societies.

Thank you one and all.
Assalamu'alaikum WBT.

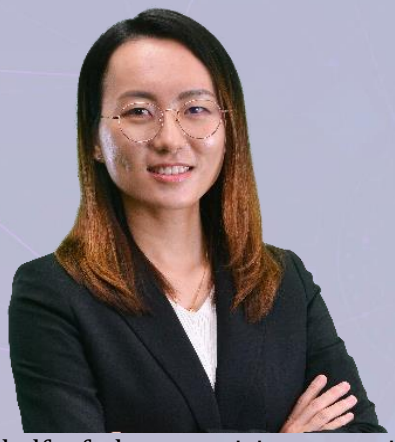
Prof. Emeritus Dato' Dr. Ahmad bin Hj Zainuddin
Vice-Chancellor
University College of Yayasan Pahang

Good day.

Distinguished Keynote Speaker and Invited Speakers
Distinguished guests from some universities
Presenters, participants, and committee

It is my utmost pleasure to welcome all participants to the 2nd International Conference on Innovative Technology and Science 2021 (IC.ITS'21). The theme for the conference is "Forging A Smart Technological World". Science and technology are improving the lives of many people in different ways and it is advancing so quickly that it is making things possible that have never before. Everyone includes researchers and practitioners are trying to innovate and transform things into smart and become digitalised with the advanced integrative technologies. We hope that this conference will provide an excellent platform and ample opportunity to share research ideas related to the current and future advanced smart technologies and sciences. These insightful research results, hopefully, will be able to provide comprehensive, adaptive, creative, and innovative solutions to deal with the issues. Furthermore, the participants will have the privilege to gather and exchange knowledge and establish networking across various integrative disciplines in a single platform.

In this virtual conference, we are honored to have a distinguished keynote speaker and 4 invited speakers from 4 countries, namely Tan Sri Dato' Ir. Ts. Ahmad Zaidee Laidin from Malaysia, Prof. Li Ning from China, Assoc. Prof. Dr. Tan Li Pin from Malaysia, Dr. Ir. Suwardi from Indonesia and Asst. Prof. Dr. Poonsiri Thipnate from Thailand. We are also delighted to receive approximately 40 presenters from various countries such as Malaysia, China, Indonesia, Thailand, and many more.



On behalf of the organizing committee, I would like to take this opportunity to express my sincere appreciation to Malaysia Board of Technologists (MBOT), Universitas Teuku Umar, Universitas Prima Indonesia, Beijing Information Science and Technology University (BISTU), International Society of Southeast Asian Agricultural Sciences (ISSAAS) and Phetchaburi Rajabhat University for the collaboration in organizing this conference. Our sincere thanks should also be conveyed to all the keynote speaker and invited speakers for their willingness to present their knowledge and ideas at the conference. Besides that, I would like to take this opportunity to express my heartfelt appreciation to all parties who have directly and indirectly contributed towards the success of this auspicious event, especially the dedicated and passionate committee members.

Lastly, wish you all the best in sharing ideas and benefiting from the conference. Thank you very much for your participation and hope to see you at our future event.

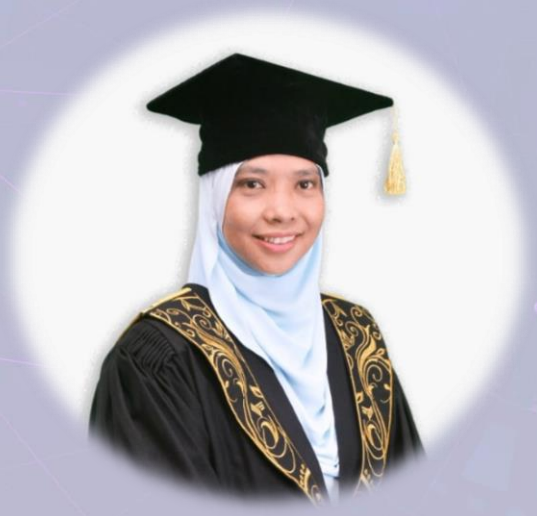
Associate Professor Dr. Tan Li Pin
Deputy Vice Chancellor
Research & Industry Linkages
University College of Yayasan Pahang

Assalamu'alaikum Wr. Wb. and Good Day
Distinguished Keynote Speaker and Invited Speakers
Distinguished guests from local and international universities, presenters, participants, and committees

On behalf of IC.ITS'21 Organizing Committee, I would like to express my gratitude and welcome all participants to the 2nd International Conference on Innovative Technology and Science 2021 with the theme, "Forging a Smart Technological World". In this critical era, exploring and highlighting something new in a different perspective is the main agenda for moving on with life. Being smart is about using a technology and data for a better decision to deliver a better quality of life. It is an expression of our mission in this globalized world.

IC.ITS'21 is a platform to gather all academician, researchers and students to share and exchange knowledge in latest issues related to sciences and technologies. The combination of multidisciplinary fields including engineering, computer science, agriculture and others exposes the broad dimension in forging the world to a smart technology. The results from various types of research, hopefully will discover the importance of creative and innovative solutions to deal with many challenges issues. All participants will have the privilege to gather and exchange knowledge and establish networking across numerous disciplines.

A special thanks to Tan Sri Dato' Ir. Ts. Ahmad Zaidee Laidin from Malaysia as our keynote speaker and four invited speakers, namely, Prof. Li Ning from China, Assoc. Prof. Dr. Tan Li Pin from Malaysia, Dr. Ir. Suwardi from Indonesia and Asst. Prof. Dr. Poonsiri Thipnate from Thailand for presenting their ideas in this virtual conference. We are also appreciating to welcome all presenters from



various countries including Malaysia, Indonesia, China, Thailand and participants from Nigeria, Morocco, Pakistan and many more to take part in our 2-days conference.

A grateful appreciation also given to our co-organizers for their tremendous support to collaborate with University College of Yayasan Pahang in organizing this conference.

As a Conference Director of IC.ITS'21, I truly understand that the success of the conference is ultimately depends on the people who have giving full commitment in planning, organizing and supporting this event. I would like to express my deepest appreciation to our committee members and all parties for the commitment and effort to realize the international conference event.

Thank you very much for your participation. I wish you a successful conference and all the best.

Ainul Hayati Yunus
Director IC.ITS'21
Faculty of Science, Engineering & Agrotechnology (FSEA)
University College of Yayasan Pahang (UCYP)

Ladies and Gentlemen,

I am glad that in the end of this year 2021, the International Society for Southeast Asian Agricultural Sciences (ISSAAS) can collaborate with the Faculty of Science, Engineering and Agrotechnology (FSEA), University College of Yayasan Pahang (UCYP) to held the 2nd International Conference on Innovative Technology and Science (IC.ITS21). Hopefully holding joint events like todays can continue to be done in the future. Actually, we wanted to discuss together directly in same room, however, because of the pandemic, this event is conducted online. We have learned that Corona Virus 19 (COVID-19) disease outbreak since March last year has changed the world including our daily life known as a new normal. As scientists, researchers, students, practitioners, policy makers and business persons, we somehow managed to adapt to this new normal to continue our programs and activities. We have to keep the contacts with our fellows and make the new ones that nowadays could be done through different means among other like today's virtual event.

The theme of this seminar is “Forging A Smart Technological World”. The seminar is an excellent forum for those who are involved in scientific disciplines on emerging issues and trends in innovative technology and science. The new era teaches us to become more adaptive and even agile to

many uncertainties, to enhance the cooperation with soft diplomacy, and to develop our confidence in overcoming the problems relating to technological advancement, climate change, population growth as well as socio-economic dynamics. For that reason, I am convinced that this seminar can be a successful event to share another new perspective on innovative technology in various fields of engineering and biotechnology that are developing rapidly at this time.

We hope that this event will generate new perspectives for strengthening the development of technology and science which in the end can facilitate human beings in their work, improve community welfare, and maintain the environment.

Dr. Ir. Suwardi
President,
International Society for Southeast Asian Agricultural Sciences (ISSAAS)

RUNDOWN

Day 1

Thursday, November 25th, 2021

RUNDOWN
2ND INTERNATIONAL CONFERENCE ON
INNOVATIVE TECHNOLOGY & SCIENCE 2021 (IC.ITS'21)
"Forging A Smart Technological World"
25th & 26th NOVEMBER 2021

DAY 1
Thursday | 25th November 2021

MYT	
9.00 a.m.	Registration Video Messages UCYP Corporate Video Co-organizer Videos Doa Recital
9.30 a.m.	Remarks, UCYP Malaysia Vice Chancellor **Professor Emeritus Dato' Dr. Ahmad bin Haji Zainuddin**
9.45 a.m.	Keynote Speaker **Tan Sri Dato' Ir. Ts. Ahmad Zaidee Laidin** Honorary Fellow, Tun Ghazali Shafie Institute for Strategic Leadership (Engineering Technology Leadership) Chairman, ENRICO Sdn. Bhd. Past President, Malaysia Board of Technologists (MBOT)
10.00 a.m.	Invited Speaker 1 **Prof. Li Ning** Dean, School of Computer Science Beijing Information Science & Technology University (BISTU) China
10.30 a.m.	Invited Speaker 2 **Assoc. Prof. Dr. Tan Li Pin** Deputy Vice Chancellor (Research & Industry Linkages) UCYP Malaysia
11.00 a.m.	Invited Speaker 3 **Dr. Ir. Suwardi** Department of Soil Science and Land Resources Faculty of Agriculture, IPB University Bogor, Indonesia
11.30 a.m.	Invited Speaker 4 **Asst. Prof. Dr. Poonsiri Thipnate** Head of Natural Product Chemistry Division of Chemistry, Faculty of Science & Technology Phetchaburi Rajabhat University, Thailand
12.00 p.m	**BREAK**

Parallel Session 1 (15 minutes including Q & A Session)		
MYT	**ROOM A**	**ROOM B**
2.00 P.M	**Development of Conceptual Design for Wheel Hub Retainer Tool** **Mohd Hanapi bin Jusoh** *Politeknik Sultan Mizan Zainal Abidin* **Mohd Fais bin Ismail** *Politeknik Sultan Mizan Zainal Abidin* **Faizul Zaiman bin Yusof** *Politeknik Sultan Mizan Zainal Abidin* *Abstract-* *Engineering: No. 1*	**Soil Characterisation and its Effect on Depth Accuracy using Ground Penetrating Radar** **Noor Khairul Idham Nordin** *Politeknik Sultan Haji Ahmad Shah* **Che Ku Ahmad Fuad** *Politeknik Kuching Sarawak* **Mohd Nizar Hashim** *Abstract-* *Computer Science: No. 10*
2.15 P.M	**Development of Concept Idea for Batteryless Solar Powered Portable Air Conditioning System** **A. H. Hamisa** **A.N. Aziah** **R. Razman** **I.M. Zamri** **L.P. Tan** *University College of Yayasan Pahang* *Abstract-* *Engineering: No. 2*	**Student Centered Post Covid Teaching using Asynchronous Platform in Malaysia Polytechnic** **Siti Faridah binti Ismail** **Rohani binti Ahsan@Hamsan** *Politeknik Seberang Perai* **Elmi Abu Bakar** *Universiti Sains Malaysia* *Abstract-* *Computer Science: No. 2*
2.30 P.M	**Performance Study of Aluminium Oxide (Al_2O_3) Nano Cutting Fluids in CNC Turning of Aluminium Alloy Al7075 via Minimum Quantity Lubricant (MQL) Cooling Technique** **A. Arifuddin** **A.M. Syafiq** **A. H. Hamisa** **L.P. Tan** *University College of Yayasan Pahang* **A.A.M. Redhwan** **R.I.N. Fatihah** *University College TATI* *Abstract-* *Engineering: No. 3*	**Daily River Water Level Prediction using Artificial Neural Network Model** **Muhammad Zulaizat Zulfikri** **Zuraidah Derasit** **S. Sarifah Radiah Shariff** **Mohd Fikri Hadrawi** *Universiti Teknologi MARA* *Abstract-* *Computer Science: No. 3*

2.45 P.M	**The Flexural Performance of RC Beam with Spiral Reinforcement without Concrete at Tension Area** **Astiah Amir** **Aulia Rahman** *Teuku Umar University* *Abstract-* *Engineering: No. 4*	**Online Attendance Management System using Face Recognition** **Lee Weng Yew** **Kasmawahida Ab Wahab** **Nor Amizam Jusoh** *University College of Yayasan Pahang* *Abstract-* *Computer Science: No. 4*
3.00 P.M	**Detection of the Potential Fishing ground under Overlay Technique** **Mirna R. Andini** **Murhaban** *Universitas Teuku Umar* *Abstract-* *Engineering: No. 5*	**Web-based Student Task Management System** **Farhan Ahmad Nurzi** **Kasmawahida Ab Wahab** *University College of Yayasan Pahang,* *Abstract-* *Computer Science: No. 5*
3.15 P.M	**The Effect of Substitution of Plastic-Coated Aggregate (PCA) on the Compressive Strength and Split Tensile Strength of Concrete** **Samsunan** **Amir, A.** **Salena, I.Y.** **Opirina, L.** **Rahmawati, S.** **Resi R.J.** *Teuku Umar University,* *Abstract-* *Engineering: No. 6*	**Implementing Artificial Intelligence Chatbot in Moodle Learning Management System** **Mahendran a/l Shilowaras** **Nor Amizam Jusoh** *University College of Yayasan Pahang* *Abstract-* *Computer Science: No. 6*
3.30 P.M	**Economic Feasibility Study on Irrigation Development (Case Study in Blang Monlung Village, Sampoiniet District, Aceh Jaya, Province Aceh)** **Rita Fazlina** **Dr. Astiah Amir** *Teuku Umar University* *Abstract-* *Engineering: No. 7*	**Android-based Fleet Maintenance System** **Pradeban a/l Mahinthan** **Hazlina Mohd Hussen** *University College of Yayasan Pahang* *Abstract-* *Computer Science: No. 7*

3.45 P.M	**Finite Element Modeling of a Seating System Frame for Children with Special Needs** ***Nazlin Hanie Abdullah*** ***Amal Suraya Azhan*** ***Noor Izzul Hamzan Bin Noor Hamdan*** *Universiti Selangor, Malaysia* **Suhairi Abdullah** **Nurhayati Mohd Nur** *Universiti Kuala Lumpur* **Ghazali Yusri** *Universiti Teknologi MARA* *Abstract-* *Engineering: No. 8*	**Building Synergy between Ground Stations to fulfil National Remote Sensing Satellite Data needs through the Indonesian National Remote Sensing Ground Station Network (NRSGSN)** ***Muchammad Soleh*** ***Hidayat Gunawan*** ***Donna Monica*** ***Hanna Afida*** *Remote Sensing Technology and Data Center – LAPAN-BRIN* *Abstract-* *Computer Science: No. 8*
4.00 P.M	**Additively Manufactured Closed Cell Polyurethane Foam Filled Lattice Structures for Damping Application** **Mayur Jiyalal Prajapati** **Ajeet Kumar** **Jeng-Ywan Jeng** **Lunghwa** *National Taiwan University of Science and Technology* *Abstract-* *Engineering: No. 11*	**Development of Landsat-9 Data Processing and Receiving Ground Station System in Parepare and Rumpin to Support National Remote Sensing Data Bank** **Hidayat Gunawan** **Ali Syahputra Nasution** **Arif Hidayat** **Suhermanto STA Munawar** **Dedi Irawadi** *Indonesian Aeronotics and Space Research Organization, LAPAN-BRIN* *Abstract-* *Computer Science: No. 9*
4.15 P.M	**Fundamental Study on The Raw Material Selection for The Formulation of Novel Dolomite A+ Concentrated Solution** **Muhammad Auni Bin Hairunnaja** **Mohd Aizudin bin Abd Aziz** *Universiti Malaysia Pahang* ***Norasiha binti Hamid*** *University College of Yayasan Pahang* *Abstract-* *Multidisciplinary Science: No. 2*	**Improving Public Awareness of Covid-19 by Using A Serious Game** **Abdul Halim bin Abdul Rahman** *Cosmopoint College Kuantan* *Abstract-* *Computer Science: No. 1*

4.30 P.M	**Effect of Rainfall on Stability of Slope** **Siti Amirah Binti Aziz** *University College of Yayasan Pahang* **IH. Razali** **WHMW Mohtar** **NA Rahman** **SA. Aziz** *Universiti Kebangsaan Malaysia* *Abstract-* *Engineering: No. 9*	**A Proposition of Business Intelligence (BI) Governance Framework in UCYP** **Hafizan Matsom** **Suriyani Sulaiman** *Univesity College of Yayasan Pahang* *Abstract-* *Computer Science: No. 11*
4.45 P.M	**Cocopeat Insulated Cool Box Performance Test on Traditional Fishing Boats** **Nuzuli Fitriadi,** **Balkhaya** *Politeknik Aceh Selatan* **Herdi Susanto** *Universitas Teuku Umar* *Abstract-* *Engineering: No. 12*	
5.00 P.M	**End of Parallel Session 1**	

RUNDOWN

Day 2
Friday, November 26th, 2021

Parallel Session II (15 minutes including Q & A Session)		
MYT	**ROOM A**	**ROOM B**
9.00 A.M	**The Development of Concept Ideas of Solar Panel Aquaponic System Technology** **Norasiha binti Hamid** **Nor Aziah binti Azman** **Zahidah binti Ab Razak** *University College of Yayasan Pahang* *Abstract-* *Agriculture: No. 1*	**Perlaksanaan Teknologi EML dan GPR bagi Kerja Pengesanan Utiliti bawah Tanah** **Syed Idrus Syed Salim** **Nor Azme Nordin** **Asrul Zakaria** *Politeknik Sultan Hj Ahmad Shah* **Sulzakimin Mohamed** *Universiti Tun Hussein Onn Malaysia* *Abstract-* *Engineering: No. 10*
9.15 A.M	**Development of Vertical Hydroponics Control Concept System** **A.R. Zahidah** **Y.H. Ainul** **I.M. Zamri** *University College of Yayasan Pahang* *Abstract-* *Agriculture: No. 2*	**Analysis of the Effect of Leadership, Internal Supervision, Work Knowledge, Discipline and Commitment on Performance At RSU Royal Prima Medan** **Brigad Mahardika Winato** **Sri Lestari Ramadhani Nasution** **Ermi Girsang** *Universitas Prima Indonesia* *Abstract-* *Multidisciplinary Science: No. 6*
9.30 A.M	**Enhancing Oil Palm Empty Fruit Bunch (EFB) Compost by Addition of Burnt Rice Husk as Carrier Material for Selected Nitrogen-fixing Bacteria** **Syafina Fasya Saiful Anuar** *College of Yayasan Pahang* **Adzmi Yaacob** *Universiti Teknologi MARA* **Radziah Othman** *Universiti Putra Malaysia* *Abstract-* *Agriculture: No. 3*	**Analysis of Manpower Need in Laboratory Unit Based on Working Load Using the Workload Indicator of Staffing Need (WISN) Method in Royal Prima Hospital** **Katherine Gunawan** **Sri Wahyuni Nasution** **Chrismis Novalinda Ginting** *Universitas Prima Indonesia* *Abstract-* *Multidisciplinary Science: No. 7*

9.45 A.M	**Engineering of Zeoponic: Plant Growth Media from Zeolite Mineral for Horticultural Crops** **Dyah Tjahyandari Suryaningtyas Fitri Lestari** **Hermanu Wijaya** **Suwardi** *Institut Pertanian Bogor* *Abstract-* *Agriculture: No. 4*	**Factors Affecting Nurse Compliance Influenced by the COVID-19 Isolation Inpatient Installation on The Use of Personal Protective Equipment in The Prevention Of COVID-19 Disease at Langsa Hospital** **Anjurniza Ulfa** **Sri Lestari Ramadhani Nasution** **Chrismis Novalinda Ginting** *Universitas Prima Indonesia* *Abstract-* *Multidisciplinary Science: No. 8*
10.00 A.M	**Comparison of Horticultural Crops Growth Planted on Zeoponic and Commercial Growth Media** **Putri Oktariani** **Miftakhul Hidayat** **Dyah Tjahyandari Suryaningtyas** **Suwardi** *Institut Pertanian Bogor* *Abstract-* *Agriculture: No. 5*	**Analysis of Clinical Characeristics of Covid-19 On Severity Level of Pre-Elderly and Elderly Patients at Royal Prima Medan General Hospital** **Yelin Gloria Laia** **Sri Wahyuni Nasution** **Sahna Ferdinan Ginting** *Universitas Prima Indonesia* *Abstract-* *Multidisciplinary Science: No. 9*
10.15 A.M	**Identification of Chemical Constituent of *Oroxylum Indicum* (Bonglai) Hydrosol (Remaining Water After Oil Distillation) Extracted by Hydrodistillation Method** **Nur Ain Qaisarah binti Azhar**, **Mohd Aizudin bin Abd Aziz** **Muhammad Auni Bin Hairunnaja** *Universiti Malaysia Pahang* **Norasiha binti Hamid** *University College of Yayasan Pahang* Abstract- Multidisciplinary Science: No. 1	**Analysis of the Effect of Work Discipline, Communication and Perception of Working Environment Conditions on Nurses' Work Productivity at Royal Prima General Hospital Medan** **Erfan Sanjaya** **Sri Lestari Ramadhani Nasution** **Ermi Girsang** *Universitas Prima Indonesia* *Abstract-* *Multidisciplinary Science: No. 10*
10.30 A.M	**Identification of Chemical Constituent of *Alpinia Purpurata* (Halia Bara) Hydrosol (Remaining Water After Oil Distillation) Extracted by Hydrodistillation Method** **Shamalah Sivem** **Mohd Aizudin bin Abd Aziz** *Universiti Malaysia Pahang* **Norasiha binti Hamid** *University College of Yayasan Pahang*	**Analysis of the Relationship Between Characteristics and Workload of Nurses with Documentation of Nursing Care At the Inpatient Installation Of Royal Prima Hospital** **Hendy** **Sri Wahyuni Nasution** **Chrismis Novalinda Ginting** *Universitas Prima Indonesia*

	Abstract- *Multidisciplinary Science: No. 3*	*Abstract-* *Multidisciplinary Science: No. 11*
10.45 A.M	**Molecular Identification of Enzyme-Producing Thermophilic Bacteria Isolated from Geothermal Hotspring in Simbolon Village, North Sumatera, Indonesia** **Dian Hardiyanti Rosda** **Edy Fachrial** *Universitas Prima Indonesia* **Saryono** **Titania T. Nugroho** *Universitas Riau* **Harmileni** *Politeknik Teknologi Kimia Industri* *Abstract-* *Multidisciplinary Science: No. 5*	**Impak dan Faktor yang Mempengaruhi Keputusan untuk Melancong di Malaysia ketika Pandemik Covid-19: Satu Perspektif Umum** **Mohamad Zaki Ahmad** **Norria Zakaria** **Malike Brahim** *Universiti Utara Malaysia* *Abstract-* *Multidisciplinary Science: No. 12*
11.00 A.M	**Closing** **Ainul Hayati Yunus (Director IC.ITS'21)** **Fillers** **Announcement: Best Presenter Award** **Virtual Photo Session**	
12.00 Noon	**Conference Ends**	

2nd International Conference on Innovative Technology and Science 2021 (IC.ITS'21)
Zoom Link, ID & Passcode

25th November 2021 / DAY 1		
	ROOM A	**ROOM B**
Opening 9.00 a.m. – 12.00 a.m. (MYT)	Zoom Link: https://bit.ly/ICITS-25November2021-Opening ID: **890 7717 2300** Passcode: **007649**	
Parallel Session 1 2.00 p.m. – 5.00 p.m. (MYT)	Zoom Link: https://bit.ly/ICITS-25Nov2021-RoomA ID: **851 1342 2854** Passcode: **884704**	Zoom Link: https://bit.ly/ICITS-25November2021-RoomB ID: **972 0722 4214** Passcode: **626577**
26th November 2021 / DAY 2		
Parallel Session 2 9.00 a.m. – 11.30 a.m. (MYT)	Zoom Link: https://bit.ly/ICITS-26November2021-Closing-RoomA ID: **853 6236 8702** Passcode: **384554**	Zoom Link: https://bit.ly/ICITS-26November2021-RoomB ID: **977 2370 8930** Passcode: **597446**
Closing 11.30 a.m. (MYT)	Zoom Link: https://bit.ly/ICITS-26November2021-Closing-RoomA ID: **853 6236 8702** Passcode: **384554**	

KEYNOTE AND INVITED SPEAKERS' ABSTRACT

2ND INTERNATIONAL CONFERENCE ON INNOVATIVE TECHNOLOGY & SCIENCE 2021 (IC.ITS'21)

"Forging A Smart Technological World"

No.	Paper's Title & Author (s)	Abstracts
1	**"Forging A Smart Technological World", covering Engineering, Computer Science, Agriculture and Safety.** ***Tan Sri Dato' Academician (Dr.) Ts. Ir. Ahmad Zaidee bin Laidin FASc*** *Honorary Fellow, Tun Ghazali Shafie Institute for Strategic Leadership (Engineering Technology Leadership)* *Chairman, ENRICO Sdn. Bhd.* *Past President, Malaysia Board of Technologists (MBOT).*	**Abstract:** The paper attempts to seize the experience of the writer in his life journey to understand that Innovative Technology is not new. In his youth he was chosen to attend a programme that opened the door to 1960s technology capturing the excitement of nuclear engineering and space technology at Jodrell Bank Science museum. However, the visit to the Pyramids of Giza opened his eyes to the remarkable knowledge of geometry, astronomy, and civil engineering, physics, chemistry and biology of the ancient Egyptians 4,500 years ago. A visit to ancient Iraq indicated a surprising civilisation that have the knowledge of building fortification and decorating the main gates with beautiful tiles that have lasted for thousands of years. Alas, the Hanging Gardens of Babylon was not in Babylon but probably in Nineveh. As cuneiform writing found in Nineveh described the Garden built on a man-made hill and watered by Archimedean Screw principle 400 years before Archimedes was born. It showed that agriculture would have reached a certain level of sophistication. Nevertheless, advanced technologies also carry with it some risks that can result in disproportionate damages such as the Deepwater oil spill. Modern sociologists have analyzed and classified the Industrial Revolution into four periods. Malaysia has grasped the Technological Changes by adopting the German system of dual or binary system of technological education and creating the Board of Technologists Act. **Keywords**: *Technology, Industrial Revolutions, Board of Technologists Act*

2	**Making Documents Smart** ***Prof. Ning Li,*** *Dean, School of Computer Science* *Beijing Information Science & Technology University (BISTU)* *China*	**Abstract:** This presentation will explore the features of documents in the era of big data -- are documents big data? How to make good use of document big data? Why do we want machines to understand documents, and what is the difference between document understanding and natural language understanding? How can we make a machine understand a document? What are the key technologies needed? What can a computer do once it understands the document? What are the typical applications? What kind of work are we carrying on in BISTU in terms of document understanding? It is hoped that audiences can cooperate with us to promote the development of intelligent documents. **Keywords:** *Big data, Intelligent Documents, Computer Technology*
3	**Development of an Integrative Framework between Knowledge Management and Artificial Intelligence** ***Assoc. Prof. Dr. Tan Li Pin*** *Deputy Vice Chancellor (Research & Industry Linkages)* *UCYP Malaysia*	**Abstract:** With the immense development of science and technology, it requires people to change the way they live, work and think. Artificial intelligence (AI) as one of the emerging advanced technologies will considerably influence the future of work and the way organizations manage their knowledge management (KM) processes. KM initiatives typically comprise the development, depository, transfer and evaluation of an organization's knowledge throughout the knowledge lifecycle. However, the initiatives often neglect ongoing advances in the AI area. As a result, organizations struggle to integrate AI into working environment in order to leverage outcome efficiency. Based on the literature review, two KM strategies which are personalization and codification have been drawn, and an adaptive, AI-specific framework for organizational KM implementation is been introduced. The integrative framework supports KM strategy and research as it outlines how AI influences current working processes and enables to understand which role AI can assimilate the human-AI interaction. Finally, this approach can act as guidelines for knowledge managers to align organizational KM with the business strategy and current technological progress in AI context. **Keywords:** *Knowledge Management, Artificial Intelligence, Integrative Framework*

4	**Sustainable Peatland Management for Plantations in Indonesia** ***Dr. Ir. Suwardi*** *President of International Society for Southeast Asian Agricultural Sciences (ISSAAS)* *Department of Soil Science and Land Resources, Faculty of Agriculture, IPB University*	**Abstract**: Total area of peatlands in Indonesia is 13.4 million ha spreading over Sumatra, Kalimantan and Papua. The utilization of peatland near the rivers for rice and secondary food crops as well as coconut plantations has long been practiced by local people. Massive development of peatlands for rice field by the government was carried out in the 1980s on the islands of Sumatra and Kalimantan for transmigration program. Some of the peatland reclamations were successful and some others failed due to the lack of experience in managing peatland. The most monumental failure was when the government reclaimed 1 million ha of peatland in Central Kalimantan. Learning from past successes and failures, peatland management for agricultural development must consider ecological, economic, and social aspects. The key to peatland management for sustainable agriculture must be based on the characteristic of peat, which is often waterlogged, nutrient-poor, acidic, and low in bulk density. Due to natural condition of peatland is often flooded, the most important key is water management. The groundwater level needs to be maintained so that the peat remains moist by draining water through canals during the rainy season and retaining water in the land by closing the floodgates during the dry season. Considering that peat is poor in nutrients, the management of organic matter and fertilizers is very important so that plant is met with the needs for nutrients. Selection of adaptive agricultural commodities on peatlands is very important in order to obtain high economic value. Some adapted of agricultural commodities in the peatlands are acacia (*Acacia crassicarpa*, oil palm (*Elaeis guineensis*), and coconut (*Cocos nucifera*). The advantage of acacia as a raw material for pulp cultivated on tropical peatlands is its speed of growth. This commodity can be harvested at the age of only 4.5 years with production reaching 120 tons/ha. Oil palm plants can grow well on peatlands besides water and fertilizers management, they also need to manage the physical properties of peat by compacting the peat as well as selecting short and fruitful varieties of oil palm. Oil palm on peat can produce fresh fruit bunches of 25 tons/ha/year. Peat management for coconuts on Burung Island, Riau, Sumatra is very good in management so that even though it is 33 years old, coconut plants still grow well and can produce 80-100 coconuts/tree with a plant population of 170 plants per ha. Sustainable peatland management for agriculture must maintain the environment so that plants remain productive and sustainable in the long term.

		Keywords: *Organic Matter Management, Peatland Management, Sustainable Agriculture, Water Management*
5	**Smart Technology for New Normal Life in Thailand** ***Asst. Prof. Dr. Poonsiri Thipnate*** *Head of Natural Product Chemistry Division of Chemistry, Faculty of Science & Technology, Phetchaburi Rajabhat University, Thailand*	**Abstract:** In the crisis that the world has to face due to the COVID-19 epidemic, Thailand is another country that has to face a sudden change. Doctors and nurses have to bear the burden of caring for a large number of patients and there is a potential for infection from the patient. With the increasing number of patients, there is an alertness in the education and business sectors to develop new innovations for reduce the risks incurred for healthcare professionals and the public such as InTouch Vici Robot, Powered Air Purifying Respirator (PAPR), Aerosol Box, Protective Suit, Washable Innovative Nano-Masks, and Intelligent Sterilization Robot etc. In addition, Thai people have to adapt themselves to a new lifestyle by using technology in meetings, online teaching and online shopping. **Keywords:** *Thailand, Innovation, COVID-19, New normal life, Technology*

SELECTED ABSTRACTS

2ND INTERNATIONAL CONFERENCE ON INNOVATIVE TECHNOLOGY & SCIENCE 2021 (IC.ITS'21)

"Forging A Smart Technological World"

Theme: Agriculture

No.	Paper's Title & Author (s)	Abstracts
1	**The Development of Concept Ideas of Solar Panel Aquaponic System Technology** ***Norasiha binti Hamid*** *Foresight and Strategic Unit, University College of Yayasan Pahang* ***Nor Aziah binti Azman*** *School of Engineering, Faculty of Science, Engineering and Agrotechnology, University College of Yayasan Pahang* ***Zahidah binti Ab Razak*** *School of Agrotechnology, Faculty of Science, Engineering & Agrotechnology, University College of Yayasan Pahang* *Corresponding author:* *norasiha@ucyp.edu.my*	**Abstract:** Aquaponic systems combine aquaculture (freshwater fish farming) and hydroponics (water-based farming methods). This aquaponics system can make the production of crops and fish farms more productive and done simultaneously. This study aims to develop concept ideas of an automated farming-based food production system by using solar panels as energy source generation to the water pump system. The aquaponic system consists of a fish farming tank, a reservoir for plants containing plant media and a water cycle system. Apart from these components, the pump is also one of the essential components to ensure that the wastewater of toxic aquatic life reservoirs will supply to plants as a source of nutrients for plant growth. As to generate electricity for water pumps, the solar panel will equip with an aquaponic system. This new automated solar panel- aquaponics concept was designed and implemented to be cost-effective and environmentally sound for local communities. **Keywords**: *Aquaponic, Solar panel, Hydroponics, Concept*
2	**Development of Vertical Hydroponics Control Concept System** ***A.R. Zahidah*** *School of Agrotechnology, Faculty of Science, Engineering and Agrotechnology, University College of Yayasan Pahang* *zahidah@ucyp.edu.my* ***Y.H. Ainul*** *School of Engineering, Faculty of Science, Engineering and Agrotechnology, University College of Yayasan Pahang* *ainul@ucyp.edu.my* ***I.M. Zamri*** *School of Engineering, Faculty of Science, Engineering and Agrotechnology, University College of Yayasan Pahang* *mohdzamri@ucyp.edu.my*	**Abstract:** With a rapidly increasing population on earth, man has invented newer and innovative ways to cultivate crops. This cultivation is mainly concentrated in rural areas of countries around the world; but with the massive urbanization nowadays, it is becoming increasingly difficult to have enough agricultural produce that will cater for the massive production. Vertical farming may eliminate the need to create additional farmland, help create a cleaner environment and solve the issues of food security. Recently, automation is considered to be an essential technology that is used in many fields and projects for control and monitoring of various phenomena such as the water supply, room temperature, voltage fluctuation, etc. Hence, this can make the vertical farming produce the best yield per area. Therefore, the objectives of this research is to develop a concept for vertical hydroponics control systems (VHCS) by identifying the components needed for the system, assembling the microcontroller, inputs and outputs of the system so that they can read the parameters that has effect on the plant growth and combining all these inputs and outputs so that it can become a whole vertical hydroponics control systems (VHCS). The scope of this work will cover the building of the vertical hydroponics tower for testing, assembling all the inputs and outputs of the system, writing programmes to read the data from the sensors and collecting readings from the sensors. The last phase is to test the whole system by planting a leafy vegetable and monitoring the quality and yield of the vegetables.

		Keywords: *Vertical Hydroponics Control System, Vertical Farming, Programmes, Hydroponics Tower, Sensors, Leafy Vegetables*
3	**Enhancing Oil Palm Empty Fruit Bunch (EFB) Compost by Addition of Burnt Rice Husk as Carrier Material for Selected Nitrogen-fixing Bacteria** ***Syafina Fasya Saiful Anuar*** *School of Science and Technology, College of Yayasan Pahang, Indera Mahkota, 25200 Kuantan, Pahang Darul Makmur, Malaysia* ***Adzmi Yaacob*** *Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA Melaka Kampus Jasin, 77300 Merlimau, Melaka, Malaysia* ***Radziah Othman*** *Department of Land Management, Faculty of Agriculture, Universiti Putra Malaysia, 43400 Serdang, Selangor Darul Ehsan, Malaysia* *Corresponding author:* *syafina@kyp.edu.my*	**Abstract:** The current interests in reducing the application of chemical fertilizers and the increasing demand for combined effects of microorganisms with agro-waste materials are perceived to give positive impact on soil, crop productivity and sustainable agriculture. The aims of this study were to prepare a series of combinations of empty fruit bunch compost (EFBC) with burnt rice husk (BRH) as carrier materials for selected nitrogen-fixing bacteria, evaluate their suitability and determine the ability of the inoculated EFBC-BRH carrier materials. Different ratios of EFBC and BRH were used to prepare the carrier materials for the selected N_2-fixing bacteria namely, Bacillus spp strains Sb35 and Sb42. Both coarse and fine EFBC were used in the preparations. The suitability of the EFBC-BRH combinations as carrier materials were tested by inoculating the different carrier materials combinations with the N_2-fixing bacteria and incubated at room temperature for eight weeks after which, the effects on bacteria population, pH, moisture content and contaminants were determined. The results showed that the fine textured EFBC-BRH carrier materials combinations (T5, T6, T7 and T8) were better carrier materials compared to the coarse textured EFBC-BRH carrier materials combinations (T1, T2, T3 and T4). The T6 (1 fine textured EFBC: 1 BRH) inoculated carrier material showed the best response with Sb35 and Sb42 population increasing by 7.34% and 7.47% respectively. In conclusion, the T6 has potential as carrier materials for both Sb35 and Sb42 to be developed as biofertilizer. **Keywords:** *Oil palm EFB compost, Nitrogen-fixing bacteria, Biofertilizer*
4	**Engineering of Zeoponic: Plant Growth Media from Zeolite Mineral for Horticultural Crops** ***Dyah Tjahyandari Suryaningtyas, Fitri Lestari, Hermanu Wijaya, Suwardi*** *Department of Soil Science and Land Resources, Faculty of Agriculture, IPB University Jl. Meranti, Dramaga IPB Campus, Bogor, Indonesia* *Corresponding author:* *dyahsu@apps.ipb.ac.id*	**Abstract:** Zeolite is a hollow hydrated aluminosilicate mineral that has alkaline and alkaline earth cations with high cation exchange capacity (CEC) of 150-180 cmol (+).kg-1. Zeolite structure has cavities according to the size of the ammonium ion so that it has the capability to absorb ammonium ions. High CEC and capability to absorb ammonium ions, zeolite has capability to maintain a low electrical conductivity (EC). This unique characteristic is needed by plant growth media to keep plants growing well. With the above characteristics, zeolite has the potential to be used as a plant growth medium, hereinafter referred to as "zeoponic". In this research, we want to engineer zeoponic by looking for the grain size of the zeolite, the composition of the zeoponic mixture, and the amount of fertilizer. The research was carried out in the greenhouse of the Department of Soil Science and Land Resources, Faculty

		of Agriculture, IPB University. The horticultural crops tested were eggplant, tomato, and chili. The results showed that based on the growth of the three test plants showed that the grain size of zeolite 5 mm was better than the size of 1 mm. Meanwhile, the best mixture ratio is zeolitecompost-cocopeat with a ratio (by volume) of 2:1:1 with the addition of 1.5 g.L-1 of NPK fertilizer. **Keywords:** *Cation Exchange Capacity (CEC), Electrical Conductivity (EC), Horticulture Crops, Plant Growth Media, Zeoponic*
5	**Comparison of Horticultural Crops Growth Planted on Zeoponic and Commercial Growth Media** ***Putri Oktariani, Miftakhul Hidayat, Dyah Tjahyandari Suryaningtyas, Suwardi*** *Department of Soil Science and Land Resources, Faculty of Agriculture, IPB University Jl. Meranti, Dramaga IPB Campus, Bogor, Indonesia* *Corresponding author:* *putrioktariani@apps.ipb.ac.id*	**Abstract:** The quality of plant growth media (PGM) is one of the keys to the success of horticultural crops cultivation. In general, PGM is made from a mixture of materials such as compost, soil, sawdust, husk charcoal, etc. One of the weaknesses of PGM derived from this material is the low cation exchange capacity (CEC) value of about 20 meq/100g. The addition of fertilizer to PGM will trigger an increase in electrical conductivity (EC) so that plants do not grow normally. The PGM is expected to be able to maintain low EC value so that plants can absorb nutrients optimally. To obtain the ideal PGM, raw materials with high CEC are needed, such as zeolite having CEC 150 meq/100g. PGM made from zeolite materials is hereinafter referred to as "Zeoponic". The zeoponic formula was made from a mixture of zeolite (0.5 mm), compost, and cocopeat in a ratio (2:1:1) and added with macro and micro fertilizers. To evaluate the capability of zeoponic, we have conducted experiments in a greenhouse at the Department of Soil Science and Land Resources, Faculty of Agriculture, IPB University. Some types of plant growth media sold on the market were used together with zeoponic to grow several types of horticultural crops. Plant growth was measured and plant physical performance was observed to assess the quality and suitability of PGM with regard to plant species. The results showed that plants that used zeoponic were taller and had a heavier crown weight compared to plants that used other PGMs. However, for flower plants, it turns out that each type of flower requires a specific PGM. The biggest challenge in today's flower media is how to make zeoponic composition that can keep plants with variegated properties unchanged during their growth. Plants with variegated properties have very high economic value. **Keywords:** *Cation Exchange Capacity (CEC), Electrical Conductivity (EC), Plant Growth Media, Variegated Properties, Zeoponic*

SELECTED ABSTRACTS

2ND INTERNATIONAL CONFERENCE ON INNOVATIVE TECHNOLOGY & SCIENCE 2021 (IC.ITS'21)

"Forging A Smart Technological World"

Theme: Engineering

No.	Paper's Title & Author (s)	Abstracts
1	**Development of Conceptual Design for Wheel Hub Retainer Tool** ***Mohd Hanapi bin Jusoh*** *Politeknik Sultan Mizan Zainal Abidin* *hanapijusoh2414@gmail.com* ***Mohd Fais bin Ismail*** *Politeknik Sultan Mizan Zainal Abidin* *faisnurulmcb@gmail.com* ***Faizul Zaiman bin Yusof*** *Politeknik Sultan Mizan Zainal Abidin* *faizulzaiman@gmail.com*	**Abstract:** Wheel hub retainer tool is a tool used to facilitate maintenance and drive shaft replacement. The drive shaft will suffer from wear and tear as the age of a car increases and the driving style is relatively rugged on the side of the road. The method of opening the drive shaft nut manually requires a special tool as a hub retainer when the nut is opened so that the hub will not also rotate in the same direction as the nut rotation. The absence of special tools to hold the hub when opening the drive shaft nut led to the existence of various techniques and ways to open the drive shaft nut by mechanics. However, it is feared that this situation could cause damage to other components such as broken or bent bold studs that could slow down maintenance work or drive shaft replacement. The conceptual design for designing this tool involves morphology chart and design selection based on Weighing Result Matrix Table. There are four design concept options that have been studied. Based on the selection of the best concept, a selected design concept involves five components that can be stitched together. As a result of this study, a concept design has been produced with the appropriate dimensions. **Keywords:** *Wheel hub retainer tool, Conceptual design, Drive shaft*
2	**Development of Concept Idea for Batteryless Solar Powered Portable Air Conditioning System** ***A. H. Hamisa, A.N. Aziah, R. Razman and I.M. Zamri*** *School of Engineering, Faculty of Science, Engineering and Agrotechnology, University College of Yayasan Pahang* ***L.P. Tan*** *Research and Industry Linkages (RILI), University College of Yayasan Pahang* *Corresponding author:* *hamisa@ucyp.edu.my*	**Abstract:** Electricity requirements and demands in the use of air conditioning from year to year are increasing. Along with the development of technology, various studies have been made in energy saving. One of the energy options is solar energy because the source is easily available and will never run out. For this research, the three main objectives to be achieved are to develop schematic diagram of experiment setup of air-conditioning by using solar PV as power supply into AC system without battery storage, to identify the component of the setup and to identify the process to running the experiment. The methodology of this research will involve three main processes throughout to achieve the objectives which are the development of Solar AC setup, running the experiment and data collecting and data analysis and discussion. In this study, it will be focused on developing the experimental setup of the overall research. The expected result of this research, the main objectives will be achieved and prove that the system will

		function well and give good result compared to common electricity air conditioning system. **Keywords:** *Solar Energy, PV Solar Panel, Battery Less, Air Conditioning System, Power Usage, Electricity Usage*
3	**Performance Study of Aluminium Oxide (Al_2O_3) Nano Cutting Fluids in CNC Turning of Aluminium Alloy Al7075 via Minimum Quantity Lubricant (MQL) Cooling Technique** ***A. Arifuddin, A.M. Syafiq*** *School of Engineering, Faculty of Science, Engineering and Agrotechnology, University College of Yayasan Pahang* ***A.A.M. Redhwan and R.I.N. Fatihah*** *Faculty of Engineering Technology, University College TATI* ***A. H. Hamisa and L.P. Tan*** *School of Engineering, Faculty of Science, Engineering and Agrotechnology, University College of Yayasan Pahang* *Corresponding author: m.syafiq@ucyp.edu.my*	**Abstract:** Aluminium alloy AL7075 is a common alloy that has superior mechanical properties such as hardness and weldability. It is used for many purposes and widely in the aircraft and automotive industry. This study focuses on the performance of Al_2O_3 nano cutting fluid in CNC turning onto AL7075 aluminium alloy with MQL cooling technique. The cutting performance are cutting temperature, surface roughness, and tool wear was investigated against nano concentration, feed rate and depth of cut. The feedrate of 0.1 to 0.3 mm/rev and depth of cut of 0.3 to 0.9 mm were used as the input parameter for the CNC lathe machine. While the MQL nozzle pressure is kept constant at 0.5 MPa. The cutting performances of Al_2O_3 nano cutting fluid with three volume concentrations (0, 2, and 4%) were then compared to the MQL coolant, flood and dry cooling technique. Beforehand, Al_2O_3 is dissolved in CNC conventional coolant base by using one-step method. Response surface method (RSM) via Face Centered Design (FCD) was used in designing the experimental work along with the using of the variance analysis (ANOVA) to determine which parameters are statistically important. The stability of Al_2O_3 nano cutting fluid is analysis via visual sedimentation and UV-Vis spectrophotometer. The experimental outcome produces the lowest cutting temperature of 28.9°C, lowest value of surface roughness Ra of 0.547 µm and tool wear of 0.0335% when Al_2O_3 nano cutting fluid with 4% volume concentration is employed. Concluded that the higher the Al_2O_3 nano cutting fluid volume concentration, the lower the cutting temperature, the better the surface roughness quality and the longer the tool life will be. Longer cutting time, faster feedrate and deeper depth of cut are recommended in future work to obtain more significant results. The experimental study reveals that the performance of Al_2O_3 nano cutting fluid in terms of cutting temperature, surface roughness, and tool wear are found to be better compared to dry machining, flood and MQL machining using conventional cutting fluid.

		Keywords: *CNC turning, Al_2O_3 nano cutting fluid, AL7075 aluminium alloy, MQL technique, RSM, FCD, ANOVA, cutting temperature, surface roughness, tool wear*
4	**The Flexural Performance of RC Beam with Spiral Reinforcement without Concrete at Tension Area** ***Astiah Amir*** *Departemen of Civil Engineering, Faculty of Engineering, Teuku Umar University, Jl. Alue Peunyareng, Ujong Tanoh Darat, Kabupaten Aceh Barat, Aceh 23681* ***Aulia Rahman*** *Departemen of Civil Engineering, Faculty of Engineering, Teuku Umar University, Jl. Alue Peunyareng, Ujong Tanoh Darat, Kabupaten Aceh Barat, Aceh 23681* *Correspondent author:* *astiahamir@utu.ac.id*	**Abstract:** This study aimed to investigate the performance capacity of RC Beam spiral reinforcement without concrete at the tension area. Two specimens were tested, consisting of the normal beam as the control beam and one support strengthened spiral reinforced RC beam (CBS) with length 60D (D=reinforcement diameter). The dimension of specimen is 150 mm x 200 mm x 3100 mm. The test of conducted in monotonic of loading. The result showed that the flexural capacity of the RC beam (CBS) decreased 27.56% compared with the normal beam. The Failure mode was in the form of Cracked bending combination with shear and the destruction of concrete in the tension area. **Keywords:** *Flexural Performance, Spiral Reinforcement, Tension Zone, Without Concrete*
5	**Detection of the Potential Fishing Ground under Overlay Technique** ***Mirna R. Andini*** *Faculty of Engineering, Universitas Teuku Umar, Aceh Barat- Indonesia* ***Murhaban*** *Faculty of Engineering, Universitas Teuku Umar, Aceh Barat- Indonesia* *Corresponding author:* *mirnaryandi@utu.ac.id*	**Abstracts:** The development of remote sensing technology is increasing due to its ability to detect the vast area of data for further analysis. However, there are rooms for improvements that need to be done in order to improve detection accuracy. This study utilizes data sea surface temperature and chlorophyll-a concentration Aqua and Terra MODIS satellite in order to detect the potential fishing ground in Aceh sea water. Contour map technique is used to construct a new data images for sea surface temperature and chlorophyll-a. The main propose of this study is to determine fishing ground at Aceh sea waters based on image observation and literature search data. Fishing ground potential was detected alongside South-West coastal of Aceh sea water in November and December 2016 based on chlorophyll-a distribution along the coastal area. **Keyword:** *Chlorophyll-a concentration, SST, Aqua-Terra MODIS, Fishing Ground*

6	**The Effect of Substitution of Plastic-Coated Aggregate (PCA) on the Compressive Strength and Split Tensile Strength of Concrete** ***Samsunan, Amir, A., Salena, I.Y., Opirina, L.*** *Department of Civil Engineering, Faculty of Engineering, Teuku Umar University, Alue Peunyareng street, Ujong Tanoh Darat, Meureubo, Aceh Barat, Aceh 23615, Indonesia* ***Rahmawati, S., Resi R.J.*** *Student of Civil Engineering, Faculty of Engineering, Teuku Umar University, Alue Peunyareng street, Ujong Tanoh Darat, Meureubo, Aceh Barat, Aceh 23615, Indonesia* *Corresponding author:* *samsunan@utu.ac.id*	**Abstract:** This study aims to determine the effect of substitution of PP (polypropylene) plastic coated aggregate (PCA) on strength of the concrete. Coarse aggregate used of split and plastic-coated aggregate (PCA) with variations of 2.5%, 5% and 7.5% of the weight of coarse aggregate and normal specimens for comparison (0%). The research method was carried out experimentally in the laboratory in the form of compression tests and split tensile tests, at the age of 7 days and 28 days of concrete. Planning of concrete mix with design concrete quality of concrete strength (f'c) = 25 MPa, by ACI method. The test specimens are cylindrical (Ø15 cm, T= 30 cm) with each variable of percentage, age of concrete and type of test as many as 3 test objects, with a total of 48 test objects. The compression test and the split tensile test of the concrete used a compression testing machine (CTM). The results of the slump test showed that the substitution of plastic-coated aggregates decreased the slump value but was higher than the normal slump value of the normal specimen. The results of the concrete compressive test showed that the substitution of plastic-covered aggregates decreased the compressive strength of the concrete. While the substitution of plastic-coated aggregates increases the results of the split tensile test of concrete. **Keywords:** *Plastic Coated Aggregate, Compressive Strength, Split Tensile Strength, Substitution of PCA*
7	**Economic Feasibility Study on Irrigation Development (Case Study in Blang Monlung Village, Sampoiniet District, Aceh Jaya Province Aceh)** ***Rita Fazlina*** *Departement of civil engineering, Faculty of engineering Teuku Umar University, Aceh, Indonesia* ***Dr. Astiah Amir*** *Departement of civil engineering, Faculty of engineering Teuku Umar University, Aceh, Indonesia* *Corresponding author:* *ritafazlina@utu.ac.id*	**Abstract:** The high rate of development in Indonesia both on a national, regional and rural scale is inseparable from the failure of both functions and allocations. Of course, this causes various problems that lead to the loss of a country. On the other hand, this also affects the economic growth of the community, so there is a need for a special study related to the feasibility study of construction projects. Where, the importance of a feasibility study is carried out to assess the feasibility of investing in an ongoing project. It is suggested that this irrigation development can be used as an evaluation material for the Dinas PU Pengairan to find out about the economic feasibility study. Capital costs incurred for irrigation development are Rp. 1,498,824,000,-, possible/unexpected costs are Rp. 74,941,200,- and annual costs are Rp. 7,494,120,-. The benefits obtained from irrigation development are Rp. 451,528,509,-. Economic Feasibility Study on irrigation development aims to determine whether or not the project is feasible to run using

		the NPV (Net Present Value), BCR (Benefit Cost Ratio), IRR (Internal Rate of Return) and BEP (Break Even Point). This feasibility study uses primary data collection methods, secondary data and assumptions to be used in the calculation of cash flow analysis. By using an interest rate of 5% and an economic life of 30 years, the NPV value obtained is Rp. 65,941,602,-, BCR of 1.04, IRR of 4.86% and BEP occurring in the 26th year. The results of the three methods indicate that this irrigation development project is feasible to be implemented or built, but the IRR method shows indicators of inadequacy **Keywords:** *economic feasibility study, irrigation canal, BEP, NPV, IRR, BCR*
8	**Finite Element Modeling of a Seating System Frame for Children with Special Needs** ***Nazlin Hanie Abdullah, Amal Suraya Azhan and Noor Izzul Hamzan Bin Noor Hamdan*** *Advanced Materials & Manufacturing Research Group (AMMRG), Faculty of Engineering and Life Sciences, Universiti Selangor, Malaysia* ***Suhairi Abdullah and Nurhayati Mohd Nur*** *Universiti Kuala Lumpur, Malaysian Institute of Aviation Technology, Dengkil, Selangor, Malaysia* ***Ghazali Yusri*** *Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia*	**Abstract:** This paper aims to perform the structural analysis for the seating system frame design using Finite Element Analysis (FEA). In this study, the mesh model of the seating system's frame and the Finite Element Analysis under static conditions were analysed using the ANSYS software. The results were investigated and presented in two areas which are total displacement and Von Mises Stress using three types of material: aluminium, steel, and titanium. The analysis result was obtained by applying the load, boundary conditions and material to the structure. The outcome of the analysis demonstrated that the maximum total displacement limit values for the chair frame for each material are aluminium (0.0038587m), steel (0.0014338m) and titanium (0.0029513m), respectively. In conclusion, the results obtained showed that aluminium has the highest deformation value compared to other materials and it is an optimum selection to be used for this application due to its material properties. Thus, the findings of this study provide important insights to improve the seating system and enhance user safety. **Keywords:** *Finite Element Analysis, displacement, Von Mises Stress, Seating system*

9	**Effect of Extreme Rainfall on Stability of Slopes in Malaysia** **Siti Amirah Binti Aziz** *School of Engineering, Faculty of Science, Engineering and Agrotechnology, University College of Yayasan Pahang, Kuantan, Pahang, Malaysia* **IH. Razali, WHMW Mohtar, NA Rahman, SA. Aziz** *Faculty of Engineering & Built Environment, The National University of Malaysia, UKM, Bangi, Selangor, Malaysia*	**Abstract:** Slope failure can result in property damage, substantial losses and even worse the loss of lives of innocent people. Study on rainfall is very important as it can affect the stability of slopes. Different rainfall intensity could cause slope failure. Rainwater could infiltrate in the soil and cause soil expansion that could potentially weakens the effective stress and causing slope failure. Places with heavy rainfall intensity and prolonged rainfall are more likely to be in such threat as it also cause significant runoff discharge and increasing the potential soil erosion. There are many researches has been done on the effects of rainfall on slopes and the effects of water infiltration of slope stability. This paper will review the effects of changing rainfall on partially saturated slopes. The study of factor of safety on the stability of slope is using Plaxis 2-dimesions computer software. **Keywords**: *Slope, Plaxis, rainfall, Factor of safety*
10	**Perlaksanaan Teknologi EML dan GPR bagi Kerja Pengesanan Utiliti bawah Tanah** ***Syed Idrus Syed Salim*** *Politeknik Sultan Hj Ahmad Shah, Kuantan, Pahang* ***Nor Azme Nordin*** *Politeknik Sultan Hj Ahmad Shah, Kuantan, Pahang* ***Asrul Zakaria*** *Politeknik Sultan Hj Ahmad Shah, Kuantan, Pahang* ***Sulzakimin Mohamed*** *Universiti Tun Hussein Onn Malaysia, Batu Pahat, Johor* *Correspondent author:* *idrus@polisas.edu.my*	**Abstract:** Pemetaan utiliti bawah tanah adalah penting untuk mengekstrak maklumat utiliti yang terdapat dibawah tanah seperti kabel elektrik dan telefon, paip gas, paip pembuangan dan paip air. Electromagnetic Location Surveys (EML) dan Ground Penetrating Radar (GPR) telah banyak digunakan untuk pemetaan utiliti bawah bawah tanah pada kedalaman tertentu bagi mengekstrak ciri utiliti yang ditanam. Sekiranya melibatkan tanah-tanah tertentu seperti melibatkan tanah yang lebih keras strukturnya, ada kemungkinan gelombang yang ditransmit oleh GPR lebih perlahan berbanding dengan tanah yang lebih lembut. Malahan kadar kelembapan pada tanah juga memberi kesan kepada imej GPR. Kajian ini dijalankan bagi mengetahui bagaimana kedua-dua peralatan ini digunakan dengan merujuk pada ketelitian imej hiperbola dalam Radargram GPR. Metodologi yang dijalankan adalah kerja pengesanan pepasangan utiliti dan penandaan makumat pengesanan menggunakan EML dan GPR dengan mengambil beberapa imej dengan menggunakan frekuensi yang sama di kawasan yang sama iaitu terletak di Perumahan Makmur Penor Utara Jaya (PUJ) dengan menggunakan peralatan GPR model (Leica DS2000), GPS (Topcon Hyper V) dan EML (RD8100). Justeru, analisis untuk menentukan keadaan yang sesuai di mana Kabel elektrik dapat dikesan lebih mudah dengan menggunakan kaedah clamping dengan menggunakan mode "peak" pada frekuensi 8KHz – 33 KHz untuk alat EML dan untuk GPR, penggunaan frekuensi yang tinggi (1GHz

		atau lebih) adalah lebih baik dalam membuat kerja-kerja pengesanan untuk utiliti yang bersaiz lebih kecil, selari dengan formula 0.1*λ, yang mana λ adalah jarak gelombang (wavelength).. Oleh kerana itu, hasil daripada kajian ini sangat penting untuk peningkatan kualiti sewaktu kerja pengumpulan data serta peningkatan dalam penghasilkan peta utiliti yang berkualiti tinggi. **Keywords:** *Pemetaan utiliti, Bawah tanah, EML dan GPR*
11	**Additively Manufactured Closed Cell Polyurethane Foam Filled Lattice Structures for Damping Application** ***Mayur Jiyalal Prajapati and Ajeet Kumar*** *High Speed 3D Printing Research Center, National Taiwan University of Science and Technology Department of Mechanical Engineering, National Taiwan University of Science and Technology* ***Jeng-Ywan Jeng*** *High Speed 3D Printing Research Center, National Taiwan University of Science and Technology Department of Mechanical Engineering, National Taiwan University of Science and Technology* *Lunghwa University of Science and Technology* *Corresponding author:* *jeng@mail.ntust.edu.tw*	**Abstract:** Lattice structures have found extensive application in lightweight load-bearing structures. With the advancement of additive manufacturing, it has now become easier to manufacture intricate lattice structures with ease. Inspiration to design a lattice structure can also be drawn from nature by mimicking natural lattice structures. A novel design biomimicking Sea-Urchin morphology has been proven to have high load-bearing capacity and can also be printed without any support material using Material Extrusion (MEX) process. These support-less lattice structures can be printed as open cell and closed cell lattice structures. The closed cell lattice structures can be fabricated by adding walls to the unit cell lattice face. This opens up an exciting domain of multi-material additive manufacturing, wherein, the cavity of closed cell lattice structure can be filled with a functional material for enhancing mechanical properties of the structure. This concept of multi-material printing in present in this study where, the lattice structure is printed with thermoplastic polyurethane (TPU) and the functional material filled in the lattice structures is polyurethane (PU) foam. The addition of PU foam in TPU lattice structures have been found to enhance the stiffness and energy dissipation characteristics of lattice structures for a given weight. The enhance in stiffness and energy dissipation characteristics can be exploited for applications like dampers, cushions and other energy-absorbing lattice structures. **Keywords:** *Additive Manufacturing, Cellular Lattice Structure, Closed Cell Lattice Structure, Polyurethane Foam, Composite*

12	**Cocopeat Insulated Cool Box Performance Test on Traditional Fishing Boats** ***Nuzuli Fitriadi, Balkhaya*** *Department of Mechanical Engineering, Politeknik Aceh Selatan, Tapaktuan, Indonesia* ***Herdi Susanto*** *Department of Mechanical Engineering, Universitas Teuku Umar, Meulaboh, Indonesia* *Corresponding author:* *nuzuli.fitriadi@gmail.com*	**Abstract:** In the process of catching fish, fishing boats always need substitutes as temporary fish storage places. The ability of the storage to maintain cold temperatures is very important to consider so that the fish freshness can be measured. This study aims to test the performance of cocopeat and polyurethane insulated cold storage of the ship in maintaining cold temperatures inside the ship. The method used is to make a cocopeat insulated polyurethane ship cold storage installed on ships in four districts. The ship's cold storage is equipped with a data logger to record the increasing temperature during the fishing process at the sea. The average temperature value in the storage is between -28 oC to -32 oC and the escalation occurs only due to the unloading process. The results obtained in this study are ship cold box used for fish storage made of cocopeat insulation can maintain cold temperatures in the storage for 5-7 days longer than commercial products on the market. **Keywords:** *Cool Box, Cocopeat, Polyurethane, Temperature*

SELECTED ABSTRACTS

2ND INTERNATIONAL CONFERENCE ON INNOVATIVE TECHNOLOGY & SCIENCE 2021 (IC.ITS'21)

"Forging A Smart Technological World"

Theme: Computer Science

No.	Paper's Title & Author (s)	Abstracts
1	**Improving Public Awareness of Covid-19 by Using a Serious Game** ***Abdul Halim bin Abdul Rahman*** *Cosmopoint College Kuantan* *Correspondent author:* *abdul.halim@cosmopoint.com.my*	**Abstract:** We are still in the middle of the battle for Covid-19. As we all know, most of the public are still not aware of the risk of this pandemic. We can see lots of people now traveling and having a vacation. Indeed, they are still wearing a face mask but what about the other standard operating procedures (SOP)? Is it safe to use the facilities like restrooms or swimming pools? How do they take extra precautions while staying in the hotel room? And many others. Therefore, this paper will focus on how to improve public awareness of Covid-19 by using a serious game. This methodology will improve the awareness not only for the adult but also the youngsters interestingly and entertainingly. The game consists of two parts: lesson and evaluation. For the lesson, the user will be instructed on what to do based on the scenario. The instruction comes together with the justification based on what the game suggested. For the evaluation, the user needs to make a decision based on what they have learned so far. They will be evaluated immediately after each scenario. If they get the answer correct, they will be notified. But if they choose wrong, the correct answer with the justification will be highlighted. The score is kept until the final scene. Then they will be notified about their level of awareness towards the issue. To summarize, this serious game can be used to raise the public awareness of Covid-19. **Keywords:** *Public awareness, Serious game, Covid-19, Education, Evaluation*
2	**Student Centered Post Covid Teaching using Asynchronous Platform in Malaysia Polytechnic** ***Siti Faridah binti Ismail*** *Jabatan Matematik, Sains dan Komputer, Politeknik Seberang Perai* *sfaridah@psp.edu.my* ***Rohani binti Ahsan@Hamsan*** *Jabatan Matematik, Sains dan Komputer, Politeknik Seberang Perai* *rohaniahsan@psp.edu.my*	**Abstract:** This paper is focusing on Engineering Mathematics course that conducted in online platform due to Pandemic of Covid-19. Math Educators have been forced to digitalize their classroom asses such as videoing the lectures topics through online, but lack of detail survey related to student centered issue while facing the course contents, the tools available during class, the internet coverage and moreover the existing facility at home environment. This presence challenge has been encountered through before and after class survey to close gap the abovementioned issue through online learning. Throughout this study, various department of student is calculating toward their satisfaction respond and feedback that has been conducted. Furthermore, from the survey results, internet coverage problem no longer valid as time pass by most of the student, only result of

	Elmi Abu Bakar *Pusat Pengajian Kejuruteraan Aeroangkasa Universiti Sains Malaysia* *Corresponding author:* *meelmi@usm.my*	audio equipment facing instability due to non-standardize quality of apparatus to use during online learning class given the score of 18.3% out of 100%. Engineering Mathematics contents has been delivered as per scheduled and no critical learning issue has been identified. **Keywords***: Teaching Platform, Before and After Survey, Engineering Mathematics.*
3	**Daily River Water Level Prediction using Artificial Neural Network Model** ***Muhammad Zulaizat Zulfikri*** *Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia* ***Zuraidah Derasit*** *Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia* ***S. Sarifah Radiah Shariff*** *Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia* ***Mohd Fikri Hadrawi*** *Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia* *Corresponding author:* *zuraidah.derasit@uitm.edu.my*	**Abstract:** Over the past few decades, floods have been seen as one of the most common natural disasters in the world. Severe flood can cause damage to both lives and properties include loss of lives, harm to buildings and other structures, including bridges, sewage systems, roads and canals. The objective of this study is to predict the river water level to increase the monitoring capacity of natural disasters in order to reduce the impact on society and low-land coastal regions. The dataset used in this study involved two stations; Jenob and Rantau Panjang that are located along Sungai Golok, Kelantan. The datasets were obtained from Department of Irrigation and Drainage (DID) and Department of Environment (DOE) Malaysia from the year 2014 to 2018. There are three estimation methodology used in this study which are Multilayer Perceptron (MLP), Radial Basis Function (RBF) and General Regression Neural Network (GRNN) algorithm. The best algorithm is selected to predict the river water level by comparing the value of error measures which are Mean Squared Error (MSE), Root Mean Squared Error (RMSE) and Mean Absolute Percentage Error (MAPE). The results obtained indicate that the MLP is the best algorithm for two stations that produced smallest error of MSE, RMSE and MAPE. **Keywords:** *Artificial neural network, General regression neural network, Multilayer perceptron, Radial basis function, river water level*

4	**Online Attendance Management System using Face Recognition** ***Lee Weng Yew*** *School of Computer Science,* *Faculty of Science, Engineering & Agrotechnology,* *University College of Yayasan Pahang,* *Taman Gelora Campus* *25050 Kuantan, Pahang, Malaysia* ***Kasmawahida Ab Wahab*** *School of Computer Science,* *Faculty of Science, Engineering & Agrotechnology, University College of Yayasan Pahang, Taman Gelora Campus* *25050 Kuantan, Pahang, Malaysia* ***Nor Amizam Jusoh*** *School of Computer Science,* *Faculty of Science, Engineering & Agrotechnology, University College of Yayasan Pahang, Taman Gelora Campus* *25050 Kuantan, Pahang, Malaysia* *Corresponding author:* *kasma@ucyp.edu.my*	**Abstract:** An attendance management system is a system used to record the daily attendance and can be used to compile insightful data for better decision making. During the Covid-19 pandemic period, most employees at University College of Yayasan Pahang (UCYP) were instructed to work from home in order to reduce the spread of the disease in workplace. However, the UCYP's Human Resource (HR) department was unable to record the employees' attendance due to lack of technology to do so. Therefore, as an ad hoc solution, employees' attendance has been recorded using word-based manual form. The objective of this project is to transform the manual way used to record the attendance into an online attendance system using face recognition technique to overcome the problem faced by the HR department. The first step is to develop a mobile-based attendance system using face recognition technique to capture images of legal employees, store images in the database and provides function for clock in and out. Next, a web-based system is developed to generate attendance reports for personal and HR Department's usage. Personal Extreme Programming (PXP) methodology has been used to develop the system. Based on the testing done, the system able to function as required in capturing the face images of legal employees and allowed them to perform checking in and out. An online attendance management system using face recognition technique able to solve the problem faced by the organization and can achieve high accuracy during employee identification. **Keywords:** *Attendance management system, face recognition, mobile-apps, Personal Extreme Programming*
5	**Web-Based Student Task Management System** ***Farhan Ahmad Nurzi and Kasmawahida Ab Wahab*** *School of Computer Science,* *Faculty of Science, Engineering & Agrotechnology, University College of Yayasan Pahang, Taman Gelora Campus* *25050 Kuantan, Pahang, Malaysia* *Corresponding author:* *kasma@ucyp.edu.my*	**Abstract:** Task management system usually used by project development team to track their tasks from beginning to end, delegating subtasks to teammates, and setting deadlines to make sure projects get done on time. It helps individual to work more productively and efficiently. The same concept can be applied to students who has to perform group assignment but located remotely from each other due to closure of educational institutions because of Covid19 pandemic. It is difficult for student to divides group tasks since they not meet each other during online class. The objective of this project is to produce a web-based student task management system that can help UCYP students in managing their

		assignments and projects so it will not exceeds the deadline. The system has task tracking and recommendation features that helps student to manage their tasks easier and can decide the most important or critical task to do first. Student Task Management System implementing the Agile methodology in system development using JavaScript frameworks for both frontend and backend. The front-end is developed using Next.js and TypeScript while the back-end using Node.js and GraphQL. The back-end itself will connect to the MongoDB database stored in the cloud using the MongoDB Atlas. This system implements authentication using the help of Firebase authentication which makes it easy for users to log in using their Google or Facebook account. The Web-based Student Task Management System able to solve the problem in managing students' tasks and making them becomes more productive and efficient in studies. **Keywords**: *Student task management system, web-based, Agile methodology*
6	**Implementing Artificial Intelligence Chatbot in Moodle Learning Management System** ***Mahendran a/l Shilowaras*** *School of Computer Science,* *Faculty of Science, Engineering & Agrotechnology,* *University College of Yayasan Pahang* *Taman Gelora Campus* *25050 Kuantan, Pahang, Malaysia* ***Nor Amizam Jusoh*** *School of Computer Science,* *Faculty of Science, Engineering & Agrotechnology,* *University College of Yayasan Pahang* *Taman Gelora Campus* *25050 Kuantan, Pahang, Malaysia* *Corresponding author:* *noramizam@ucyp.edu.my*	**Abstract:** Learning Management System (LMS) is a software application or web-based technology that is used to develop, implement, and evaluate a specific learning process. KYP has implemented an e-Learning Management System (e-LMS) using Moodle since early 2021. The main features already implemented in this e-LMS is course details and it should also support the communication process between lecturers and students where currently, the KYP e-LMS lack of. Usually students will ask the same question to their lecturer in person and cause the lecturer to have to give the same answers repeatedly. This results in a waste of time for both parties in answering and receiving answers. To overcome the problem, there is a need to replace the manual way of getting answers to any kind of academic or course related questions repeatedly. The main objective of the project is to develop an intelligence Chatbot which can help students finding academic related information without the need to ask their instructors or spent more time browsing menus in e-LMS. E-LMS has been developed based on Rational Unified Process (RUP) approach. In this project, the Moodle system is fully implemented by integrating with Communicate, one of the Cloud software and Dialog Flow, which is a chatbot plugin system

		connected with Google Could Platform. An AI Chatbot able to interact with students and can provide answer to students' queries instantly despite of the place, date and time zone of the student as well as enhances interaction which provides a feel of support to the students. **Keywords:** *Learning Management System, web-based technology, E-Learning, Artificial Intelligent, chatbot*
7	**Android-based Fleet Maintenance System** ***Pradeban a/l Mahinthan, Hazlina Mohd Hussen*** *School of Computer Science, Faculty of Science, Engineering & Agrotechnology, University College of Yayasan Pahang, Taman Gelora Campus, 25050 Kuantan, Pahang, Malaysia* *Corresponding author:* *hazlinamh@ucyp.edu.my*	**Abstract:** Fleet maintenance systems is a system that helps organizations automate tasks related to vehicle maintenance, service, accidents, and operator usage. Various applications have been developed due to increasing demand for organizations to find a way to achieve great savings in the business operation. Many companies and organizations operating under pressure go through a lot of trouble and difficulties when it comes to a fleet maintenance system. Those companies may be the ones that work over a broad assemblage of fields, operate various vehicles and are responsible for numerous workers. Fleet managers in those companies face hurdles which are unlikely to get solved by simple means. The objective of this project is to develop an Android-based application that can be used to manage the fleet maintenance which eventually results in the improvement and savings in the operation. The Android app would be installed in the smart phone present in each vehicle of the fleet, and able to send live location data to the database. The API could also be used to integrate the services with other systems. Agile methodology has been used to develop this application. Based on the testing done, this application can manage vehicle status and maintenance system with its range of functions involved in fleet management are highly interrelated and generally integrated. **Keywords:** *Fleet maintenance system, mobile-apps, Agile methodology*

8	**Building Synergy between Ground Stations to Fulfil National Remote Sensing Satellite Data Needs Through the Indonesian National Remote Sensing Ground Station Network (NRSGSN)** ***Muchammad Soleh*** *Remote Sensing Technology and Data Center – LAPAN-BRIN* ***Hidayat Gunawan*** *Remote Sensing Technology and Data Center – LAPAN-BRIN* ***Donna Monica*** *Remote Sensing Technology and Data Center – LAPAN-BRIN* ***Hanna Afida*** *Remote Sensing Technology and Data Center – LAPAN-BRIN* *Corresponding author:* *muchammad.soleh@lapan.go.id*	**Abstract:** The demand for remote sensing satellite data to fulfil Indonesians national needs is very large. However, currently the availability of the data has not been adequately fulfilled and the provision of the data is still carried out separately by several agencies. Based on Indonesia Space Law No.21 of 2013, Government Rule No.11 of 2018 and No.45 of 2017 state that LAPAN is obliged to build, operate and compile a roadmap for the construction of remote sensing ground stations to fulfil Indonesian national data needs. LAPAN has been able to manage Ground Station operations and acquire remote sensing satellite data since 1978 and continues to increase its capacity to receive low, medium, high resolution and SAR remote sensing satellite data for all of Indonesia territory through the Parepare (South Sulawesi), Pekayon. (Jakarta), and Rumpin (Bogor) Ground Stations. In order to strengthen the operational capacity of Earth Stations and also provide remote sensing satellite data quickly and completely, starting in 2021 LAPAN-BRIN has pioneered to synergize an integrated ground station system in Indonesia called the Indonesian National Remote Sensing Ground Station Network (NRSGSN). NRSGSN is designed to be able to receive and provide (share) low, medium, high resolution satellite remote sensing data and SAR and SAR from all Earth Station management agencies and remote sensing satellite data users through one platform. It is hoped that through JSBN the need and provision of remote sensing satellite data can be facilitated easily, quickly and completely for users. **Keywords:** *Ground Station, Remote Sensing Data, Network, NRSGSN, LAPAN-BRIN*
9	**Development of Landsat-9 Data Processing and Receiving Ground Station System in Parepare and Rumpin to support National Remote Sensing Data Bank** ***Hidayat Gunawan, Ali Syahputra Nasution, Arif Hidayat, Suhermanto STA Munawar and Dedi Irawadi*** *Researcher/Engineer in Remote Sensing Technology and Data Center, Indonesian Aeronotics and Space Research Organization, LAPAN-BRIN,*	**Abstract:** In order to maintain continuity of natural resources satellite remote sensing data, LAPAN needs to prepare infrastructure to be able to receive, record and process the Landsat-9 data. Landsat-9 satellite is a continuous series of Landsat satellites and have been launched in September 2021. To support the Landsat-9 satellite data reception and processing preparation activities, the study and development of Landsat-9 satellite data receiving and processing need to be done. In this paper will be carry out the implementation of concept, requirement, development and integration of hardware and software for Landsat-9 satellite data processing and reviving system in Parepare and Rumpin ground station.

	Jl. LAPAN No. 70 Pekayon, Pasar Rebo, Jakarta Timur 13710 *Corresponding author:* *hida003@brin.go.id* *hidayat.gunawan@lapan.go.id*	Landsat-9 satellite carried two sensors namely Operational Land Imager (OLI) and Thermal Infrared Sensors (TIRS). For Landsat-9 satellite data receiving preparation, the following subsystem: antenna reflector subsystem, radio frequency subsystem (RF), demodulator receiving subsystem and data processing need to be setting and upgrade. While the standard product processing system includes a data processing subsystem, ingest mission into the level-0 data and Landsat Product Generation system (LPGS) which process data into a data level-0 level-1 standard products. Ground station system development will be ready for Landsat-9 satellite signal downlink test receiving and data mission processing on November/December 2021. For the next step the system will be upgrade for Landsat-9 data receiving and processing operation on January 2022. This Development of Landsat-9 data processing and receiving system have been carry out for Parepare and Rumpin GS in order to support National Remote Sensing Data Bank (NRSDB). **Keywords:** *Landsat-9, OLI-TIRS, Remote Sensing GS, Antena-Reflector, RF-Demodulator, Ingest-LPGS, NRSDB*
10	**Soil Characterisation and Its Effect on Depth Accuracy using Ground Penetrating Radar** ***Noor Khairul Idham Nordin*** *Politeknik Sultan Haji Ahmad Shah, Semambu, Kuantan, Pahang Darul Makmur, Malaysia* ***Che Ku Ahmad Fuad*** *Politeknik Kuching Sarawak, KM22, Jalan Matang, 93050 Kuching, Sarawak, Malaysia* ***Mohd Nizar Hashim*** *Corresponding author:* *noorkhairulidham@gmail.com*	**Abstract:** Assessing depth of utility in different soil moisture conditions require good research. Moreover, different soil moisture conditions produce depths that are not the same as one another. The information of underground utility such as depth is very important to avoid damage towards utility during excavation process. Therefore, this study was conducted to assess the depth recorded by the (GPR) equipment in different soil condition in terms of soil moisture. The first objective of this study was to determine the soil moisture level for three different soil conditions. Next, this study evaluated the depth accuracy produced by the GPR equipment with the different soil moisture level such as dry, semi-dry and wet. Different soil moisture conditions were determined by the sampling of the three soil conditions. These samples were taken and tested using speedy soil moisture tester equipment that provided the percentage of soil moisture content. Next, the depth of utility was taken at the three soil moisture conditions and an assessment was made. The shape of hyperbolic on the radargram was generated from the equipment and was used to assess the accuracy of the depth. The information from this study is very useful to underground utility users which can help

		the development of the country in general. It also benefits the improvement of the preparation quality of underground utility mapping. **Keywords:** *Soil moisture, Speedy soil moisture tester, Underground utility mapping*
11	**A Proposition of Business Intelligence (BI) Governance Framework in UCYP** **Hafizan Mat Som** *Univesity College of Yayasan Pahang, Level 2, Kompleks Yayasan Pahang, Kuantan, Pahang Darul Makmur, Malaysia* **Suriyani Sulaiman** *Univesity College of Yayasan Pahang, Level 2, Kompleks Yayasan Pahang, Kuantan, Pahang Darul Makmur, Malaysia* *Corresponding author:* *dr.hafizan@ucyp.edu.my*	**Abstract:** The execution of Management Information System is an organizational strategy that is gaining strength when it happens to analyze data and making decisions. One of these technologies is Business Intelligence (BI) where the process of transforming raw data into intelligible information is implemented using specific tools. More corporate business as well as commercial trade have been using BI to speed up their decision-making process thus increase the production. With a capable and efficient BI solution, higher education sector is also able to obtain information and make better aligned decisions. This article describes the design of a business intelligence governance framework for the University College of Yayasan Pahang (UCYP), which is adopted and adapted from a few substantial precedents framework such as BI Competence Center (BICC). For this purpose, a diagnosis was made to identify the level of maturity in analytics at UCYP using TDWI Analytics Maturity Model Assessment. From this baseline, a model was designed to strengthen organizational culture, infrastructure, data management, data analysis and governance. The proposal envisions the definition of a BI governance framework, guiding principles, strategies, and respective Unit in-charge. Therefore, the framework is designed to implement effective controls that ensure the success of business intelligence projects, achieving an alignment of the objectives of the development plan with the analytical vision of the institution. **Keywords:** *Business Intelligence, Data Analytic, BI Governance*

SELECTED ABSTRACTS

2ND INTERNATIONAL CONFERENCE ON INNOVATIVE TECHNOLOGY & SCIENCE 2021 (IC.ITS'21)

"Forging A Smart Technological World"

Theme: Multidisciplinary Science

No.	Paper's Title & Author (s)	Abstracts
1	**Identification of Chemical Constituent of *Oroxylum Indicum* (Bonglai) Hydrosol (Remaining Water After Oil Distillation) Extracted by Hydrodistillation Method** ***Nur Ain Qaisarah binti Azhar*** *Department of Chemical Engineering, College of Engineering, Universiti Malaysia Pahang* ***Mohd Aizudin bin Abd Aziz*** *Department of Chemical Engineering, College of Engineering, Universiti Malaysia Pahang* *Bioaromatic Research Centre, Universiti Malaysia Pahang* ***Muhammad Auni Bin Hairunnaja*** *Department of Chemical Engineering, College of Engineering, Universiti Malaysia Pahang* ***Norasiha binti Hamid*** *Foresight and Strategic Unit, University College of Yayasan Pahang* *Corresponding author:* *maizudin@ump.edu.my*	**Abstract:** *Oroxylum Indicum,* (Indian Trumpet Flower) or called as Bonglai in Malay is a medicinal plant that is widely used especially in Indian medicine system. *Oroxylum Indicum* leaves can be extracted by hydro distillation method to obtain the essential oil along with hydrosol. Nevertheless, the chemical constituents of the hydrosol of the leaves is yet to be determined as hydrosol is always discarded which leads towards the wastage of products. Thus, this study investigated the chemical constituents of *Oroxylum Indicum* leaves hydrosol extracted by hydro distillation by variation of temperatures and determine the functional groups of the active constituents in the leaves for the benefits and usages in pharmaceutical industries. Hydro distillation is carried out at different temperatures to study the effect of temperatures towards the active compounds in the hydrosol. The hydrosol sample of the leaves will be extracted by hydro distillation method at temperature of 50℃, 70℃ and 80℃ and separated via rotary evaporator, and later analyzed by GC-MS and FTIR analysis. This study will help us to identify the value and amount yield of the chemical constituents of *Oroxylum Indicum* leaves hydrosol which will be able to determine whether it will have significant values equal as the essential oil. From FTIR analysis, the functional groups for all samples are the same which are O-H stretch, H-bonded, N-H stretch and C=C stretch. The chemical constituents of *Oroxylum Indicum* hydrosol was determined by GC-MS analysis. The major components of hydrosol produced at 50 ℃ are squalene (10.44%), 2ethylehexyl palmitate (8.56%), palmitic acid (7.50%), and di-n-2-propylpentylphthalate (1.69%), and at 70℃is acetic acid (5.88%) only, while at 80℃ are only traces components respectively. This is due to most compounds contained may be decomposed during the preparation of samples prior both analyses also the efficiency of the system and procedure during the extraction. Besides, the chemical constituents of hydrosol were total opposite quantitatively and qualitatively as compared to the essential oil. **Keywords:** *Oroxylum Indicum; Hydrosol Chemical Constituents; Hydro Distillation.*

2	**Fundamental Study on The Raw Material Selection for The Formulation of Novel Dolomite A+ Concentrated Solution** ***Muhammad Auni Bin Hairunnaja*** ***Mohd Aizudin bin Abd Aziz*** *Department of Chemical Engineering, College of Engineering, Universiti Malaysia Pahang* ***Norasiha binti Hamid*** *Foresight and Strategic Unit, University College of Yayasan Pahang* *Corresponding author:* *maizudin@ump.edu.my*	**Abstract:** *Dolomite* is known as dolostone or dolomitic rock. Limestone provides beneficial nutrients to the plant and helps increase the soil's pH value to meet the plant's needs. This study will focus on the formulation of *Novel Dolomite A+ Concentrated Solution (NDA)*. The study also compared the performance of NDA with inorganic chemical fertilizer (nitrogen (N) fertilizer) and manual control treatment on the plantation of *Spinacia Oleracea* species. The study was divided into three parts: formulation, experimental, and analysis. The formulation part was the preparation of raw materials for NDA formulation. The materials were water, *Dolomite* base, Oil palm frond, Black Soldier Compost, and Effective Microbe. The experiment part was to prepare six samples of *S.Oleracea* with different treatments. The samples were distributed into groups A, B, and C. These treatments were done once a week for the nutrient consistency supplied to the crop, but dolomite mixture was used to water the sample of group B every day, and the treatment was held for two months. All the samples were watered every day. The final method of this study was the analysis. This part entailed identifying the leaves numbers, stem thickness, pH soil, and the stem height value. Besides, the identification of *Above Ground Biomass AGB (kg. hr-1)* and *Nitrogen Percentage Concentration (NPC)* were made for evaluating these significant parameters. The NPC was analyzed by using *the Kjeldahl method*. The results showed the *S.Oleracea* of sample 2 in group B exhibited the highest stem height of 28.4 cm, the stem thickness of 5.8 mm, pH soil value of 7.5, average AGB value of 2.056×10-3 g.hr-1 among all the samples. Sample 1 of *S.Oleracea* in group C exhibited the highest leaves number with 17 leaves. Both *S.Oleracea* in group C achieved the lowest height, pH soil, and stem thickness values but achieved the highest NPC values of 0.4 % w/w. In conclusion, NDA impacted *S.Oleracea* growth since it had met the most stringent criteria. This means that NDA can make *S.Oleracea* the healthiest and safest to consume due to its lower nitrogen content values as shown by the NPC results. **Keywords:** *Dolomite; Spinacia Oleracea; Above Ground Biomass (AGB); Kjeldahl method; Novel Dolomite A+ Concentrated Solution (NDA); Nitrogen Percentage Concentration (NPC)*

3	**Identification of Chemical Constituent of *Alpinia Purpurata* (Halia Bara) Hydrosol (Remaining Water After Oil Distillation) Extracted by Hydrodistillation Method** ***Muhammad Auni Bin Hairunnaja, Shamalah Sivem*** *Department of Chemical Engineering, College of Engineering, Universiti Malaysia Pahang* ***Mohd Aizudin bin Abd Aziz*** *Department of Chemical Engineering, College of Engineering, Universiti Malaysia Pahang* *Bioaromatic Research Centre, Universiti Malaysia Pahang, Lebuhraya Tun Razak, 26300 Gambang, Kuantan, Pahang, Malaysia* ***Norasiha binti Hamid*** *Foresight and Strategic Unit, University College of Yayasan Pahang* *Corresponding author:* *maizudin@ump.edu.my*	**Abstract:** *Alpinia purpurata* (Halia Bara) is a *herbaceous perennial* plant that has almost similar characteristics as common ginger but the rhizomes are smaller and more pungent. It is widely known for ornamental purposes and also applied in the medicinal field. Extraction of essential oil and hydrosol of Alpinia purpurata can be done through the hydrodistillation method. The essential oil contains of α-pinene, β- caryophyllene, geranial, neral and β-pinene that contributes to medicinal values while the chemical constituents of hydrosol is yet to be identified. Hence, this research is mainly to identify the chemical constituents and functional groups of active compounds found in *Alpinia purpurata*'s rhizomes hydrosol by hydrodistillation method. Besides that, hydro distillation is carried out at different heating temperatures and distillation times to study the effects of temperatures and distillation times on the constituents and active compounds in the hydrosol. The powdered sample is used for the extraction at the temperatures of 60℃, 80℃ and 100℃ at distillation time of 1 hour, 1.5 hours, 2 hours and 2.5 hours. The essential oil and hydrosol is separated using a burette. The hydrosol is further analyzed by Gas Chromatography-Mass Spectrometry (GC-MS) and Fourier-transform Infrared Spectroscopy (FTIR). Based on GC-MS and FTIR results, the major chemical constituents found in *Alpinia purpurata*'s hydrosol at 100℃ for 2.5 hours of distillation time is 1-Dodecanamine (40.08%) and the functional groups present are O-H, N-H, C-H and C=H stretching. The increased heating temperature and distillation time caused the denaturation of substances in the extracted hydrosol. The chemical constituents present in hydrosol is greatly different from the chemical constituents that present in essential oil qualitatively and quantitatively. **Keywords:** *Alpinia purpurata; Hydro Distillation; Essential Oil; Hydrosol*

4	**Molecular Identification of Enzyme-Producing Thermophilic Bacteria Isolated from Geothermal Hotspring in Simbolon Village, North Sumatera, Indonesia** ***Dian Hardiyanti Rosda*** *Master Program of Biomedical Sciences, Faculty of Medicine, Universitas Prima Indonesia, North Sumatra, Indonesia* ***Saryono*** *Department of Chemistry, Universitas Riau, Indonesia* ***Titania T. Nugroho*** *Department of Chemistry, Universitas Riau, Indonesia* ***Harmileni*** *Politeknik Teknologi Kimia Industri, North Sumatra, Indonesia* ***Edy Fachrial*** *Laboratory of Molecular Biology, Faculty of Medicine, Universitas Prima Indonesia, North Sumatra, Indonesia* *Correspondent author:* *fachrial_edy@yahoo.co.idd*	**Abstract:** Indonesia has many natural resources, but not all are well utilized, including thermophilic bacteria, which have not been fully explored. Thermophilic bacteria live in a location with a temperature of 45°C to 70°C, such as hot springs or volcanic craters. Thermophilic, high-temperature resistant bacteria are very efficient in producing enzymes and can also be cultivated quickly and in large quantities with high stability at high temperatures. Thermophilic bacteria have the potential to produce thermophilic enzymes that can stabilize against hot temperatures. Generally, enzymes will be damaged against high temperatures. Enzyme isolation from thermophilic bacteria is beneficial in various fields, such as in the industry, which is almost entirely in using high temperatures. These enzymes have many advantages because they can increase the reaction to save production costs, energy, and time in the industrial process. Thermophilic bacteria are found in many places, such as areas with volcanic activity and also hot springs. As a result, it can be concluded that UTMSBA and UTMSBS isolates showed positive results in the gelatin hydrolysis test, while the citrate test, catalase test, sulfide hydrolysis, gelatin hydrolysis, and mortality test showed negative results. In terms of the shape, the edges and elevations of UTMSBA and UTMSBS isolates appear circular, entire, and flat. Similarly, the isolates can hydrolyze amylase, cellulase, and protease enzymes, and the results of identifying the isolate with the 16SrRNA gene showed 99.99% homology, namely *Bacillus amyloliquefaciens* strain V4. **Keywords:** *Enzyme, Hotspring, Molecular identification*
5	**Analysis of the Effect of Leadership, Internal Supervision, Work Knowledge, Discipline and Commitment on Performance at RSU Royal Prima Medan** ***Brigad Mahardika Winato*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* ***Sri Lestari Ramadhani Nasution*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia*	**Abstract:** In improving the quality and quantity of hospital services, a management system is needed that can mobilize all existing human resources so that it will have an impact on performance achievement. Through improving leadership, internal control, work knowledge, discipline, and employee commitment, it is expected that employee performance can run optimally. The purpose of this study was to determine and analyze the influence of leadership, internal control, work knowledge, discipline, and employee commitment on employee performance at RSU Royal Prima Medan. The population in this study were nurses at the Royal Prima General Hospital in Medan who had worked for less than one year and more

	Ermi Girsang *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* *Corresponding author:* *ermigirsang@unprimdn.ac.id*	than one year, amounting to 150 people with a sample of 109 people using the Slovin formula. The data collection method used a questionnaire, the analytical method was using the instrument test (validity test and reliability test), classical assumption test (normality test, multicollinearity test, and heteroscedasticity test), as well as hypothesis testing (coefficient of determination, simultaneous significance test, and partial test) using SPSS for Windows version 25. The findings showed that the leadership variable did not have a significant effect on employee performance, internal control did not have a significant effect on employee performance, work knowledge had a positive and significant effect on employee performance, discipline did not have a significant effect on employee performance and employee commitment have an effect but not significant on employee performance. **Keywords:** *Commitment, Leadership, Performance.*
6	**Analysis of Manpower Need in Laboratory Unit Based on Working Load Using the Workload Indicator of Staffing Need (WISN) Method in Royal Prima Hospital** ***Katherine Gunawan*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* ***Sri Wahyuni Nasution*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* ***Chrismis Novalinda Ginting*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* *Correspondent author:* *chrismis@unprimdn.ac.id*	**Abstract:** To improve the quality of health services, one of the things that the hospital management must pay attention to is that it must be better and more effective in dealing with human resources. To achieve organizational success, human resources play an essential role. According to the Royal Prima General Hospital's preliminary observations, the laboratory installation has 29 workers, including one laboratory head and 28 health analysts whose work schedule is divided into three shifts. This study aims to determine the optimal number of workers in the laboratory unit of Royal Prima Hospital based on workload and available work time. This research uses mixed methods, namely quantitative research using WISN by observing and qualitative research using in-depth interviews. The results of research at the Royal Prima Hospital were 136,320 minutes for a year, with a workload of 40.4%. There were four categories of activities: direct activities, indirect activities, nonproductive activities, and productive activities in the Royal Prima Hospital's laboratory unit. This study concludes that the optimal number of analysts at Royal Prima Hospital is 31 people. This means that there is a shortage of 2 analysts. **Keywords**: *WISN, Workload, Work time*

7	**Factors Affecting Nurse Compliance Influenced by the COVID-19 Isolation Inpatient Installation on The Use of Personal Protective Equipment in The Prevention Of COVID-19 Disease At Langsa Hospital** ***Anjurniza Ulfa*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* ***Sri Lestari Ramadhani Nasution*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* ***Chrismis Novalinda Ginting*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* *Correspondent author:* *chrismis@unprimdn.ac.id*	**Abstract:** Nurse professionals are part of the human resources in the hospital environment who provide health services to patients and have direct interactions with patients. The use of PPE is an effort to create occupational safety and health for nurses in hospital treatment rooms. Personal protective equipment such as gloves, masks, goggles are alternative preventive measures for nurses in protecting themselves from the risk of disease transmission. The purpose of this study was to determine the factors that influence the compliance of nurses in the COVID-19 Isolation Inpatient Instasi to the use of personal protective equipment in the prevention of COVID-19 at Langsa Hospital. The research method used is quantitative research with a cross sectional approach. This research was conducted at Langsa Hospital with a total sample of 21 people. The results showed that there was an influence between knowledge, attitudes, availability of PPE and policies with the compliance of nurses in the COVID-19 Isolation Inpatient Instasi on the use of personal protective equipment in the prevention of COVID-19 at Langsa Hospital. The most influential factor in the compliance of nurses in the COVID-19 Isolation Inpatient Instasi on the use of personal protective equipment in the prevention of COVID-19 at Langsa Hospital is knowledge (Exp B = 8,394). The most influential knowledge factor is the compliance of nurses in the COVID-19 Isolation Inpatient Institution towards the use of personal protective equipment in the prevention of COVID-19 disease. There needs to be socialization about the importance of using PPE for nurses in order to maintain the expected quality of care services. **Keywords:** *PPE, Covid-19, Nurse*
8	**Analysis of Clinical Characeristics of Covid-19 On Severity Level of Pre-Elderly and Elderly Patients at Royal Prima Medan General Hospital** ***Yelin Gloria Laia*** *Master of Clinical Medicine at Universitas Prima Indonesia, Medan, Indonesia*	**Abstract:** 2020 is the toughest year for the whole world due to a pandemic caused by a virus called Covid-19 (Corona Virus Disease 2019). WHO explained that this type of corona is a new virus that is the source of the COVID-19 disease and one of the most vulnerable age populations is the elderly. The purpose of this study was to determine the clinical characteristics of Covid-19 in elderly patients at the Royal Prima Medan Hospital. This kind of research is descriptive with survey methods Of Sectional Cross approach. The population of elderly is positively Covid-19, one of the criteria given by elderly's

	Sri Wahyuni Nasution *Master of Clinical Medicine at Universitas Prima Indonesia, Medan, Indonesia* ***Sahna Ferdinan Ginting*** *Master of Clinical Medicine at Universitas Prima Indonesia, Medan, Indonesia* *Corresponding author:* *sriwahyuni_nst88@yahoo.com*	45-74 years and was hospitalized In August-September 2020 at The General Hospital Royal Prima. The research is based on secondary data collected from a third of medics. The research Deal revealed that contact history had no effect on severity, with a significance level (0.166)>0.05. There is an effect of age on the severity level with a significance level (0.00) <0.05. There was no effect of gender on severity, with a significance level (0.663)>0.05. There is an influence between symptoms and severity with a significance level (0.00) <0.05. There is an influence between length of stay on severity level with a significance level (0.00) <0.05. In the Covid-19 inpatients at RSU Royal Prima Medan, 47 people with severity were found, 38 of whom were treated in the ICU for more than 2 weeks. This was because the patients had experienced complications such as ARDS 23 people (60%), heart injury 10 people (26%), multiple organ failure 2 people (5%), acute kidney failure 3 people (7%), and sepsis 8 people. people (21%). **Keywords:** *The elderly, Covid-19, RSU Royal Prima Medan*
9	**Analysis of the Effect of Work Discipline, Communication and Perception of Working Environment Conditions on Nurses' Work Productivity at Royal Prima General Hospital Medan** ***Erfan Sanjaya*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* ***Sri Lestari Ramadhani Nasution*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* ***Ermi Girsang*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* *Corresponding author:* *ermigirsang@unprimdn.ac.id*	**Abstract:** High work productivity is very important for hospitals, because it is very closely related to the results to be achieved. Productivity is one indicator in the provision of nursing care. Through the improvement of work discipline, communication and perception of the work environment, it is hoped that the resulting nurse's work productivity can be more optimal. The results of observations at the Royal Prima General Hospital Medan show that the average employee absentee level in 2020 for the last 12 months has been stable. The problem studied in this study is the analysis of the influence of work discipline, communication and perceptions of working environmental conditions on the work productivity of nurses at the Royal Prima General Hospital Medan. at the Royal Prima General Hospital, Medan. The population in this study were nurses at the Royal Prima General Hospital in Medan who had worked for 1-year totaling 110 people with a sample of 86 people using the Slovin formula. The data collection method uses a questionnaire, the analysis method uses multivariate analysis, with instrument tests (validity test and reliability test), classical assumption test, and hypothesis testing (coefficient of determination, simultaneous significance test and partial test) using SPSS for Windows

		version 25. The results showed that the work discipline variable had a positive and significant effect on the work productivity of nurses, the communication variable did not have a positive and significant effect on the work productivity of nurses and the variable work environment conditions had no positive and not very significant effect on the work productivity of nurses. **Keywords:** *Work Discipline, Communication, Perception of the Work Environment and Nurses' Work Productivity*
10	**Analysis of the Relationship between Characteristics and Workload of Nurses with Documentation of Nursing Care at the Inpatient Installation Of Royal Prima Hospital** ***Hendy*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* ***Sri Wahyuni Nasution*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* ***Chrismis Novalinda Ginting*** *Master of Public Health at Universitas Prima Indonesia, Medan, Indonesia* *Corresponding author:* *chrismis@unprimdn.ac.id*	**Abstract:** Quality improvement in inpatient services that is a concern is the documentation of nursing care which is expected to be able to carefully carry out nursing actions to patients in the Hospital Inpatient Room properly and correctly in accordance with the procedures set by the hospital. The characteristics of nurses can make themselves have different abilities from other employees and the workload is also important to know as a basis for knowing the work capacity of nurses. The purpose of this study was to analyze the relationship between Nurse Characteristics and Nurse Workload on Documentation of Nursing Care at the Inpatient Installation of Royal Prima Hospital. The population and samples used in this study were 30 nurses at the Inpatient Installation of the Royal Prima General Hospital, Medan. The data collection method used a questionnaire while the analytical method used was using an instrument test (validity test and reliability test), classical assumption test, and hypothesis testing (coefficient of determination, simultaneous significance test and partial test) using SPSS for Windows version 25.00. The results showed that there was an influence between Nurse Workload (X2) on Documentation of Nursing Care (Y) at the Inpatient Installation of Royal Prima General Hospital with a t-count value greater than t table (2.619>1.70113), There was an influence between Workload Nurses (X2) on Nursing Care Documentation (Y) with a t value greater than t table (2,619>1,70113) and there is a relationship between Nurse Characteristics (X1) and Nurse Workload (X2) on Nursing Care Documentation (Y) with the value of t arithmetic is greater than t table (5.243>1.70113). **Keywords:** *Workload, Characteristics, Documentation of Care, Nurse*

11	**Impak dan Faktor yang mempengaruhi Keputusan untuk Melancong di Malaysia ketika Pandemik Covid-19: Satu Perspektif Umum** ***Mohamad Zaki Ahmad*** *Pusat Pengajian Pengurusan Pelancongan, Hospitaliti & Acara, UUM COLGIS* ***Norria Zakaria*** *Pusat Pengajian Pengurusan Perniagaan, UUM COB* ***Malike Brahim*** *Pusat Pengajian Kerajaan, UUM COLGIS* *Corresponding author:* *zaki.ahmad@uum.edu.my*	**Abstract:** Sebelum tercetusnya pandemik Covid-19, pelancongan seringkali diiktiraf sebagai antara penyumbang terbesar ekonomi sejagat berdasarkan perkembangan industri yang amat memberangsangkan saban tahun. Lebih sinonim dengan gelaran 'industri manusia' (people industry), pelancongan terbukti telah menjana kepelbagaian impak, positif mahupun negatif, yang secara umumnya diklasifikasikan berdasarkan tiga aspek utama: ekonomi, sosiobudaya dan alam sekitar. Kekangan, masalah dan limitasi yang tercetus akibat pandemik Covid-19 sesungguhnya memberikan kesan yang amat mendalam terhadap hampir keseluruhan sektor pelancongan terutamanya yang berkaitan pergerakan dan perkumpulan manusia seperti sektor penginapan dan pengangkutan penumpang. Namun, naluri manusia untuk menjalankan terlibat dan menjalankan aktiviti pelancongan ini tidak pernah terbatas. Walaubagaimanapun, atas apa yang sedang berlaku, keputusan untuk melancong dalam tempohmasa pandemik pada hari ini dibuat lebih berhati-hati dengan memberikan pertimbangan kepada beberapa faktor. Justeru, kertas konseptual ini membincangkan secara umum impak pelancongan yang wujud akibat terkesan daripada situasi pandemik Covid-19 dan beberapa faktor yang perlu dan wajar untuk dipertimbangkan sebelum seseorang itu membuat keputusan untuk melancong atau melibatkan diri dengan aktiviti berkaitan pelancongan. **Keywords:** *Pelancongan, Pandemik Covid-19, Impak Pelancongan, Keputusan untuk Melancong.*

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