

e-ISSN : 2810-0956

ICECREAM

International Conference on Engineering, Construction, Renewable Energy, and Advanced Materials



Designing Sustainable Technologies Towards Resilient Future

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WELCOMING REMARK
HEAD OF THE COMMITTEE ICE CREAM 2022

السَّلَامُ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ



The honorable,
the chancellor or the representative of UMJ
Dean of Engineering Faculty of UMJ
all of the keynote speaker and panelist
All of reviewer of SEMNASTEK and ICECREAM 2022
all of guest, presenter and participant of this event.
The last but not least, all of the committee of SEMNASTEK and
ICECREAM 2022 who have work really hard.

I am Yeptadian Sari, It's my great pleasure to welcome you to Seminar Nasional Sains dan Teknologi or SEMNASTEK 2022 and The Second International Conference on Engineering, Construction, Renewable Energy and Advanced Materials or we can call it The Second ICECREAM.

Ladies and gentlemen,

In bringing this conference into reality, we envision every human in this world being solid and intense for their own life, even though pandemic attack our social life. Then here we are, in the SEMNASTEK 2022 and The Second ICECREAM bring "Designing Sustainable Technologies Towards Resilient Future" as our theme. There are about seven countries that give their contribution in this conference as presenters, participant, even panelist and reviewer.

Finally, my deepest gratitude goes to the Advisory Board and the Organizing Committee, as well as institutions, companies and volunteers who have directly and indirectly supported the success of these event and proceedings, such as The Institution of Engineers Indonesia for The DKI Jakarta area (Mr. Priyatno Bambang Hernowo and Mr. Ngadimin) and the Central Jakarta Branch, also includes sponsors, namely: PT. Adaro Energy, MR Group and United Tractors (Astra member).

Although we try our best to be professional, on behalf of the UMJ Faculty of Engineering, we apologize profusely for any inconvenience occurred.

It's an honor to us to receive the contribution from all of panelist that join this event today.

Thank you to all of reviewers that made time to reviewed bunch of article, presenters and participants who are being the backbone of this event.

This conference is the result of the hard work, support, and dedication of a number of parties. I will not be able to stand here, in front of all of you today, if not because of all of organizing committee who have been with me since the very beginning.

The committee has been working throughout the year to propose sessions, review a record of submissions, answer queries, arrange the schedule, even response to the last minute request, thank you so much for your hard work.

وَلَسَّلَامٌ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ

Jakarta, November 2022
Fakultas Teknik Universitas Muhammadiyah Jakarta
Head Of Committee,

Yeptadian Sari, S.T., M.T

**WELCOMING REMARK
RECTOR OF UNIVERSITAS MUHAMMADIYAH JAKARTA**

السَّلَامُ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ



International Conference on Engineering, Construction, Renewable Energy, and Advance Materials (ICECREAM), entitled: “Designing Sustainable Technologies towards Resilient Future” which was held by the Faculty of Engineering, Universitas Muhammadiyah Jakarta is an important event to discuss and resolve the designing sustainable technologies towards towards resilient and challenging future.

The use of renewable energy has an important role in reducing carbon emissions to overcome the crisis. Reducing carbon emissions is very important in preventing the impacts of climate change which are increasingly threatening the lives of living things on this earth. Utilization of water as electrical energy in Indonesia can also be a solution in reducing carbon emissions. Currently, climate change after

the COVID-19 pandemic is the biggest threat to the lives of all living things in the world. This crisis can only be handled jointly by all parties with our concern for the environment.

Renewable energy originating from natural resources that can replenish itself within a certain period of time without depleting the earth's resources, such as solar, wind, water, and even geothermal energy should be maximized in order to preserve the environment.

The development of the era of the industrial revolution 4.0 certainly has an impact on the world of education. The era of the industrial revolution 4.0 has changed the way we think about technology and education. The development of soft skills and transversal skills, as well as invisible skills that are useful in many work situations such as interpersonal skills, cohabitation, the ability to become global-minded citizens, and media and information literacy – are inevitable to be developed.

The industrial revolution 4.0 in the world of education has proven that the knowledge possessed can be replaced by technology, while the application of soft skills and hard skills possessed by every student cannot be replaced by technology. For this reason, competency-based education is needed, understanding and utilizing IoT (*Internet of Things*), utilizing virtual or augmented reality and using and utilizing AI (*Artificial Intelligence*).

UMJ was committed to play an active role in popularizing the development of Science and Technology in the field of education. It is hoped that by increasing public knowledge, we will be able to get support in increasing community participation in the development of Science and Technology in Indonesia.

On behalf of UMJ, I would like to convey my gratitude to the dean, vices dean, and all committee for initiating and performing the ICECREAM event. Hopefully, ICECREAM can be fruitful and develop the linkage for the development of Science and Technology for Indonesian people.

وَلَسَّلَامٌ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ

Jakarta, November, 2022

Universitas Muhammadiyah Jakarta

Rector,

Dr. Ma'mun Murod, M.Si.

**WELCOMING REMARK DEAN
FACULTY OF ENGINEERING UNIVERSITAS MUHAMMADIYAH JAKARTA**

السَّلَامُ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ



Alhamdulillah, In the name of Allah, the Most Beneficent and the Most Merciful. May peace, mercy, and blessings of Allah be upon us. Sholawat and Salam may always be given to our beloved Prophet Muhammad SAW (peace be upon him), along with his family, friends and followers who are istiqamah, اللَّهُ إِن شَاءَ اللَّهُ including all of us, آمِينَ يَا رَبَّ الْعَالَمِينَ.

We are grateful that the current condition of the Covid-19 pandemic is globally getting better, including in Indonesia, nevertheless we must not be complacent and remain alert in the face of the Covid-19 pandemic. Let's not be careless and ignore, we must always be prepared and ready to face any circumstances.

However, the program must go on. Alhamdulillah, Faculty of Engineering UMJ could again host the 2nd International Conference on Engineering, Construction, Renewable Energy and Advanced Materials 2022 (ICECREAM) with the topic: **Designing Sustainable Technologies Towards Resilient Future**.

Sustainable design has been widely accepted as an essential component of the educational preparation of designers, architects and engineers worldwide. Sustainability also implies that products and systems are designed for resilience, that is, they have the ability to survive and thrive in a changing environment, where appropriate.

Long-term sustainability requires design for resilience, where resilience is defined as: i) the ability of a system to adapt spontaneously in response to changes in its environment, or ii) the ability of a system or product family to induce rapid adaptation by designers to changing conditions.

There are so many problems in various aspects that we have to face. The answers to the problems we face today will not be found within any single discipline, but will require the ability and willingness to work across disciplinary boundaries to find solutions.

We hope that this proceeding will achieve its goal of providing an effective article for academics (including students), researchers and practitioners to advance science, research and technology, so that they can produce useful outcomes for the development of creative and innovative science, research and technology

Finally, my deepest gratitude goes to the Advisory Board and the Organizing Committee, as well as institutions, companies and volunteers who have directly and indirectly supported the success of these event and proceedings, such as The Institution of Engineers Indonesia for The DKI Jakarta area (Mr. Priyatno Bambang Hernowo and Mr. Ngadimin) and the Central Jakarta Branch, also includes sponsors, namely: PT. Adaro Energy, MR Group and United Tractors (Astra member).

Although we try our best to be professional, on behalf of the UMJ Faculty of Engineering, we apologize profusely for any inconvenience occurred.

Let me close my remarks by reminding all of us to stay healthy, stay clean, stay happy, because happiness increases our immune system. Don't forget to always implement the Covid-19 health

protocol. Hopefully the Covid-19 pandemic will end completely soon. Now is the time for us to **Recover Together, Recover Stronger**. With the spirit to recover and rise together, through this proceeding we invite all parties to work together and strengthen mutual cooperation so that we become **strong individuals, resilient institutions and tough Nation**.

وَلَسَّلَامٌ عَلَيْكُمْ وَرَحْمَةُ اللَّهِ وَبَرَكَاتُهُ

Jakarta, November 2022

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LIST OF CONTENTS

Welcoming Remark Head of Committee Ice Cream	ii
welcoming Remark Rector of Universitas Muhammadiyah Jakarta	iv
welcoming Remark Dean Faculty of Universitas Muhammadiyah Jakarta	vi
Reviewer ICE CREAM 2020	viii
Organizing Committee	ix
List Of Contents	x

CHEMICAL ENGINEERING

NO.	CODE	TITLE	PAGE
1	ICECREAM-001	Preparation of Bagasse-Based Granular Activated Carbon by Chemical Activation Using Physical Mixing Method for Adsorbed Natural Gas Dwi Rachayuningsih, Yuliusman, Nasruddin, Novie Ardhyarini	1 – 7
2	ICECREAM -002	The Effect of Jackfruit Seed Flour Addition on the Hardness, Friability, and Destruction Time of Medicine Tablets Peris Maulana, Dhiya Salma, Fatma Sari, Gema Fitriyano	1 – 7
3	ICECREAM -003	Preparation and Characterization of Mechanical Properties Improved Bioplastics from Rice Bran with Varying Glycerol Volume Apriyansyah, Ratri Ariatmi Nugrahani, Ismiyati	1 – 7
4	ICECREAM -004	Characteristics of Edible Film from Rice Bran Starch as Affected by the Concentration of Sorbitol Plasticizer Ummul Habibah Hasyim, Naimas Pratmono Aji, Fatma Sari, Tri Yuni Hendrawati, Ratri Ariatmi Nugrahani	1 – 7
5	ICECREAM -005	Synthesis optimization and characterization of CoAl ₂ O ₄ nanoparticles as blue pigment Nurul Hidayati Fithriyah, Erdawati and Athiek Sri Redjeki	1 – 7
6	ICECREAM-006	Effect of Drying Time, Anting-Anting Plant (<i>Acalypha Indica</i> L.) Powder as Prepared by an Ultrasonic-Assisted Extraction Novia Okny Yulianti, Tri Yuni Hendrawati, Ismiyati	1 – 6

MECHANICAL ENGINEERING

NO.	CODE	TITLE	PAGE
7	ICECREAM – 007	LINEAR ACTUATOR OF THRUST VECTORING CONTROL ON SOLID ROCKET MOTOR ON LAPAN SOUNDING ROCKET Oka Sudiana, Khaula Nurul Hakim	1 -10
8	ICECREAM- 008	Applications of Eco-friendly Materials in the Design of the Parking Lot and Gate at Pesantren Al Hikmah II Karangmojo Gunung Kidul Windarta, Fadwah Maghfurah, Ratna Dewi Nur'aini	1 – 6

INDUSTRIAL ENGINEERING

NO.	CODE	TITLE	PAGE
9	ICECREAM-009	Redesign of finished goods warehouse storage layout using the shared storage method to increase capacity and minimize time with a simulation approach Farah Haidar Hamid, Renty Anugerah Mahaji Putri	1 – 7

ARCHITECTURE

NO.	CODE	TITLE	PAGE
10	ICECREAM-010	Bedroom Design Preference by Women who Just Giving Birth to Reduce the Symptoms of Mental Disorder Yeptadian Sari, Silvy Amanda Hidayat	1 – 4
11	ICECREAM-011	Facade Identification of Colonial Buildings in Blitar, Indonesia Antariksa, Herry Santosa, Jenny Ernawati, and Zai Dzar Al Farisa	1 – 8
12	ICECREAM-012	Behavior Approach to the Design of Low-Income Community Flats in Cilangkap Majora Nuansa Al-Ghin	1 – 9
13	ICECREAM-013	Cepu, An Educating City: Toward Sustainable City Development? Ashadi Ashadi, Anisa Anisa , Ratna Dewi Nur'aini	1 – 7
14	ICECREAM-014	Modern Tropical Architecture Style on Uluwatu House, Indonesia Finta Lissimia and Ramasasti Gustianingrum	1 – 6
15	ICECREAM-015	IDENTIFICATION OF SPATIAL RELATIONSHIP AS THE BASIS FOR ZONING IN DUAL-FUNCTION BUILDING DESIGNS Anisa, Finta Lissimia, and Jundi Jundullah Afgani	1 – 8
16	ICECREAM-016	Openrouteservice Pedestrian Reach Analysis on Road Networks Around Metro Stations Lutfi Prayogi, Ari Widyati Purwantiasning, Dedi Hantono, Yeptadian Sari	1 – 6

INFORMATIC ENGINEERING

NO.	CODE	TITLE	PAGE
17	ICECREAM-017	Classification of the use of safety helmets in construction projects using the Convolutional Neural Network Heldiansyah, Muchtar Salim, Hadi Gunawan	1 – 4