



UNIVERSITI MALAYSIA PAHANG
AL-SULTAN ABDULLAH



Energy Security & Chemical Engineering Congress

ENERGY SECURITY AND CHEMICAL ENGINEERING CONGRESS 2025

Towards Net-Zero: Pathways to Sustainability

12 – 14 August 2025

The Everly Hotel Putrajaya, Malaysia

Programme Book

Organizer



UNIVERSITI MALAYSIA PAHANG
AL-SULTAN ABDULLAH

FLUID

Centre for Research in Advanced
Fluid and Processes

In partnership with



KMUTNB



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of Singapore

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**Center for Advanced
Intelligent Materials**
Pusat Kecerdasan Bahan Termaju

CENTRE FOR RESEARCH IN ADVANCED FLUID AND PROCESSES

Invention, Innovation, Technical Services, Consultation & Training

CARIFF Services

- Technical services
- Consultancy
- Training
- Contract research

Track Record

- Petronas Research
- MTBE-Petronas
- BASF-Petronas
- Carsten & Ranico
- Perwaja
- Edotco

Others

1. Microwave Reactor
2. Refractometer
3. Potentiostat
4. Particle Sizer
5. Automatic Titrator
6. Tubular furnace

1. Microfluidics Testing & Fabrication System
2. Channel Flow System

3. Wind Tunnel System
4. High Speed Camera Microscope

Fluid flow

1. PIV
2. Micro PIV
3. Micro Pro
4. LDV
5. High Speed Camera
6. Digital Microscope
7. Cryo-TEM
8. SEM-EDX

LASER
DETECTOR,
Imaging &
Surface
Analysis

SAMPLE PREPARATION TOOLS

1. Nano Grinder
2. Freeze Dryer
3. Centrifuge
4. Furnace
5. Planetary Ball Mill Grinding
6. Needleless Electrospray Machine
7. Ultrasonic Processor
8. Vacuum Freeze Dryer
9. Rotary Evaporator
10. Incubator Shaker



RHEOLOGY & THERMAL ANALYSIS

1. Viscometer
2. Rheometer
3. Tensiometer
4. Rotating Disk Apparatus
5. DSC
6. TGA-DSC

Spectroscopy & X-Ray ANALYSIS

1. UV-vis-NIR
2. GCMS
3. LCMS Q-ToF
4. ICP-OES
5. Online GC
6. XRD
7. XRF
8. XPS
9. HPLC
10. FTIR

Time	12 th August 2025 (Tuesday)
15:00 – 17:00	Registration of Participants
20:30 – 21:30	Online Workshop Title: Beyond the Abstract: Crafting High-Impact Bibliometric Literature Review for Next-Generation Scholars Speaker 1: Assoc. Prof. Dr. Herma Dina binti Setiabudi Speaker 2: Dr. Bashir Abubakar Abdulkadir Link: Online AI Workshop
Time	13 th August 2025 (Wednesday)
08:00 – 08:45	Registration and Reception
08.45 – 09.45	Parallel Session 1 (Anyaman 1)
09:45 – 10:00	Coffee Break
10:00 – 10:15	Arrival of VIPs
10:15 – 10:45	https://shorturl.at/UpE5U Recitation of Du'a Safety Briefing Welcoming Speech by the Prof. Ir. Dr. Mohd Fairusham bin Ghazali, Chairman of ESChE2025 Opening Speech and Officiating the Launch of ESChE 2025 by YBhg. Professor Ts. Dr. Aida Mustapha, Deputy of Vice Chancellor (Research & Innovation) Universiti Malaysia Pahang Al-Sultan Abdullah (UMPSA) Montage presentation Photo Session
10:45-11:15	Plenary Speaker 1: Dr. Norshah Hafeez Shuaib Title: Beyond Compliance: Net Zero as a Growth Driver
11:15-11:45	Plenary Speaker 2: Prof. Dr. Chantaraporn Phalakornkule Title: Implementing a circular economy approach for biogas, tannin, and treated water in the palm oil industry
11:45-12:15	Plenary Speaker 3: Prof. Ts. Dr. Jolius bin Gimibun Title: Computational Fluid Dynamics Driving Sustainable Energy Goals
12:30-14:00	Lunch Break
14:00 – 17:00	Parallel Session 2A and Keynote Speech (Anyaman 1) Parallel Session 2B and Keynote Speech (Anyaman 2) Parallel Session 2C (Anyaman 3)
17:00 – 17:30	Refreshments
20:00 – 22:00	ESChE2025 Dinner
20:00	Arrival of the Participants and Guest
20:15	Recitation of Du'a
20:30	Dinner starts Video Presentation, Best Paper Award, Photography session
Time	14 th August 2025 (Thursday)
09:00 – 10:30	Parallel Session (Virtual)
10:30 – 10:45	Coffee Break
10:45 – 12:30	Parallel Session (Virtual)
12:30	End of ESChE2025

13 AUGUST 2025 (DAY 2)

PARALLEL SESSION 1: ANYAMAN 1

FOOD SCIENCE & TECHNOLOGY/ NATURAL PRODUCTS & INDUSTRIAL CROPS

Chairman: Dr. Afiqah Yeop

Microsoft Team Link: <https://shorturl.at/UpE5U>

08:45 – 09:00	ESCE024 Dr. Rohaida Che Man (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>ADSORPTION-BASED IMMOBILIZATION OF α- CYCLODEXTRIN GLUCANOTRANSFERASE (α-CGTASE) ON BANANA PEEL FOR EFFICIENT α-CYCLODEXTRIN (α-CD) PRODUCTION: OPTIMIZATION AND REUSABILITY STUDIES</i>
09:00 – 09:15	ESCE025 Mr. Muhammad Norzaman Bin Khatiman (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>SUBCRITICAL WATER EXTRACTION OF PHENOLIC COMPOUNDS FROM MERINGGAI (MORINGA OLEIFERA) LEAF WITH ULTRASONIC AS A PRELIMINARY TREATMENT</i>
09:15 – 09:30	ESCE088 Dr. Afiqah Yeop (UCSI) <i>THERMAL DEGRADATION KINETICS OF GALLIC ACID, PROTOCATECHUIC ACID, EPIGALLOCATECHIN AND RUTIN IN LABISIA PUMILA EXTRACTS AT VARYING TEMPERATURES</i>
09:30 – 09:45	ESCE075 Dr. Sasikarn Nuchdang (Thailand Institute of Nuclear Technology) <i>EVALUATING SODIUM AND POTASSIUM CONTENT IN SALAD VEGETABLES USING INAA: IMPLICATIONS FOR FOOD SAFETY</i>

13 AUGUST 2025 (DAY 2)

PARALLEL SESSION 2A: ANYAMAN 1

ADVANCED MATERIAL/ SEPARATION TECHNOLOGY/ MATERIAL
SCIENCE ENGINEERING

Chairman: Dr. Mohamad Fakhru Ridhwan Samsudin

Co-Chairman: Assoc. Prof. Ts. Dr. Siti Kholijah Abdul Mudalip

Microsoft Team Link: <https://shorturl.at/6HH75>

14.00 – 14.20	KEYNOTE SPEAKER 1 Prof. Reinner Ishaq Lerrick (University of Nusa Cendana) <i>DEVELOPMENT OF PYRROLE-BASED DYES AND THEIR APPLICATION ON DYE SENSITIZER SOLAR CELL (DSSC)</i>
14.20 – 14.35	ESCE062 Ms. Amirah Syakirah Zahirulain (Universiti Teknologi Mara (UiTM)) <i>FABRICATION OF GREEN ENZYME-MOF COMPLEXES FOR POTENTIAL BIOREMEDIATION OF DYE</i>
14.35 – 14.50	ESCE048 Dr. Tinesha Selvaraj (Department of Mineral and Geoscience Malaysia) <i>EFFECT OF RARE EARTH DISSOLUTION ON RARE EARTH ELEMENTS BY SOLVENT EXTRACTION FROM MALAYSIAN RARE EARTH OXALATE</i>
14.50 – 15.05	ESCE072 Dr. Mohamad Fakhru Ridhwan Samsudin (PETRONAS Research Sdn Bhd) <i>SEPARATION AND PURIFICATION OF MONOETHYLENE GLYCOL (MEG) FROM GLYCOL MIXTURES WITH CLOSE BOILING POINT PROPERTIES USING EXTRACTIVE DISTILLATION</i>
15:05 – 15:20	ESCE004 Mr. Costantine Joannes (Universiti Malaysia Sabah/Mineral) <i>CHARACTERIZATION OF MALAYSIAN BAUXITE AND ITS POTENTIAL AS AN ALTERNATIVE RESOURCE FOR RARE EARTH ELEMENTS (REE)</i>
15:20 – 15:35	ESCE021 Mr. Costantine Joannes (Department of Mineral and Geoscience Malaysia) <i>SEPARATION OF LIGHT & HEAVY RARE EARTH ELEMENTS VIA DI-(2-ETHYLHEXYL)-PHOSPHORIC ACID (D2EHPA) FROM MALAYSIAN RARE EARTH OXALATE</i>

PROGRAMME
TENTATIVE

13 AUGUST 2025 (DAY 2)

PARALLEL SESSION 2A: ANYAMAN 1

ADVANCED MATERIAL/ SEPARATION TECHNOLOGY/ MATERIAL SCIENCE ENGINEERING

Chairman: Dr. Mohamad Fakhru Ridhwan Samsudin

Co-Chairman: Assoc. Prof. Ts. Dr. Siti Kholijah Abdul Mudalip

Microsoft Team Link: <https://shorturl.at/6HH75>

15:35 – 15:50	ESCE090 Ir. Kristomus Boimau (Universitas of Nusa Cendana) <i>EFFECT OF KOH TREATMENT ON PHYSICO-CHEMICAL PROPERTIES OF BORASSUS FLABELLIFER FIBER</i>
15:50 – 16:05	ESCE080 Dr. Erich Umbu Kondi Maliwemu (Universitas of Nusa Cendana) <i>CHARACTERIZATION OF HYDROXYAPATITE BIOMATERIALS BASED ON MERETRIX-MERETRIX SHELLS BY HYDROTHERMAL METHOD</i>
16:05 – 16:20	ESCE034 Mr. Hamza Almansouri (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>NEXT-GENERATION THIN-FILM COMPOSITE-BASED FORWARD OSMOSIS MEMBRANES: COMPARATIVE IMPACTS OF GRAPHENE OXIDE AND FUNCTIONALIZED CARBON NANOTUBE MODIFICATIONS ON WATER FLUX AND ANTIFOULING PERFORMANCE</i>
16:20 – 16:35	ESCE096 Assoc. Prof. Pensiri Tongpadungrod (King Mongkut's University of Technology North Bangkok) <i>MATHEMATICAL MODELLING AND SIMULATION OF AN ADSORPTION CHILLER FOR STUDYING THE EFFECTS OF OPERATING PARAMETERS ON ITS PERFORMANCE</i>
16:35 – 16:50	ESCE066 Miss Nur Zulaikha Mat Kamil (Universiti Kebangsaan Malaysia) <i>INFLUENCE OF THE COOLING ANTISOLVENT CRYSTALLIZATION ON SUCCINIC ACID CRYSTAL RECOVERY FROM OPF FERMENTATION MODEL SOLUTION</i>
16:50 – 17:05	ESCE077 Prof. Febri Odel Nitbani (Universitas of Nusa Cendana) <i>SYNTHESIS α-GLYCEROL MONO CAPRYLAT FROM PROTECTED GLYCEROL</i>
17:05 – 17:20	ESCE120 Dr. Chuang Ma (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>PREPARATION AND PROPERTIES OF NANO SiO₂ MODIFIED FLUORINATED POLYACRYLATE COATINGS FOR HERITAGE</i>

13 AUGUST 2025 (DAY 2)

PARALLEL SESSION 2B: ANYAMAN 2

ENVIRONMENTAL ENGINEERING/ WASTE WATER

Chairman: Assoc. Prof. Ts. Dr. Herma Dina Setia Budi

Co-chairman: Assoc. Prof. Ir. Dr. Chin Siew Choo

Microsoft Team Link: <https://tinyurl.com/49xkpfzk>

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| 14:00 – 14:15 | ESCE042
Ms. Ghina Rizqina Ersa (Institut Teknologi Sepuluh Nopember)
<i>RECOVERY OF PHOSPHATE FROM SLUDGE IN FECAL SLUDGE TREATMENT PLANTS USING GYPSUM WASTE</i> |
| 14:15 – 14:30 | ESCE041
Dr. Sarala Selambakkannu (Malaysia Nuclear Agency)
<i>ANALYTICAL AND MACHINE LEARNING TECHNIQUES FOR INNOVATIVE DETECTION AND CHARACTERIZATION OF MICROPLASTICS IN PADDY SOILS</i> |
| 14:30 – 14:45 | ESCE040
Ms. Norfatiha Ishak (Universiti Teknologi Malaysia)
<i>INFLUENCE OF MECHANICAL VENTILATION AND AIR CONDITIONING ON INDOOR MICROPLASTIC DEPOSITION AND INHALATION RISK</i> |
| 14:45 – 15:00 | ESCE038
Ms. Anisa Ratnasari (Institut Teknologi Sepuluh Nopember)
<i>INVESTIGATION OF BRACKISH WATER QUALITY NEAR BEACH: A CASE STUDY TUBAN COASTLINE IN INDONESIA</i> |

13 AUGUST 2025 (DAY 2)

PARALLEL SESSION 2B: ANYAMAN 2

ENVIRONMENTAL ENGINEERING/ WASTE WATER

Chairman: Assoc. Prof. Ts. Dr. Herma Dina Setia Budi

Co-chairman: Assoc. Prof. Ir. Dr. Chin Siew Choo

Microsoft Team Link: <https://tinyurl.com/49xkpfzk>

15:00-15:15	ESCE029 Mr. Sean Jun Lee (Universiti Tunku Abdul Rahman) <i>ORGANOSOLV PRETREATMENT OF SLUDGE WITH MICROWAVE</i>
15:15 – 15:30	ESCE010 Mrs. Has Umierah Ibrahim (Universiti Teknologi Malaysia) <i>ARSENIC IMMOBILIZATION VIA MICROBIAL INDUCED CARBONATE PRECIPITATION BY STAPHYLOCOCCUS SACCHAROLYTICUS</i>
15:30 – 15:45	ESCE086 Prof. Philip de Rozari (Universitas of Nusa Cendana) <i>REMOVAL OF PHOSPHATE FROM DOMESTIC WASTEWATER USING CONSTRUCTED WETLANDS ECOTECHNOLOGY WITH SAND MEDIA AMANDED WITH BIOCHAR</i>
15:45 – 16:00	ESCE082 Dr. Nasratun Masngut (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>ACCLIMATIZATION OF ACTIVATED SLUDGE FOR EFFECTIVE REMOVAL OF EMERGING POLLUTANT</i>
16:00 – 16:15	ESCE121 Dr. Putri Shazila Rosman (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>PARTICULATE MATTER IN THE EQUESTRIAN INDUSTRY: AN OVERVIEW</i>

13 AUGUST 2025 (DAY 2)

PARALLEL SESSION 2C: ANYAMAN 3

**MATERIAL SCIENCE ENGINEERING/ RENEWABLE ENERGY/
ENVIRONMENTAL ENGINEERING**

Chairman: Dr. Anisuzzaman S.M.

Co-chairman: Assoc. Prof. Ts. Dr. Nurul Aini Razali

Microsoft Team Link: <https://tinyurl.com/4by9zdhu>

14:00 – 14:20	KEYNOTE SPEAKER 2 (Virtual) Prof. Erna Astuti, M.T (Universitas Ahmad Dahlan) <i>UTILIZATION OF LOCAL RAW MATERIALS AS CATALYSTS IN BIODIESEL PRODUCTION</i>
14:20 – 14:35	ESCE079 Prof. Reinner Ishaq Lerrick (Universitas of Nusa Cendana) <i>DEVELOPMENT OF DYE SENSITIZED SOLAR CELL MATERIALS THROUGH B-ACRYLIC ESTER AND ACRYLAMIDE MODIFIED ATROPISOMERIC BODIPYS</i>
14:35 – 14:50	ESCE045 Dr. Nor Azwin Shukri (Malaysia Nuclear Agency) <i>SLOW PYROLYSIS OF BAMBOO WASTE IN AN INDUSTRIAL SCALE CARBONIZER SYSTEM</i>
14:50 – 15:05	ESCE074 Dr. Sasikarn Nuchdang (Thailand Institute of Nuclear Technology) <i>ACID DIGESTION OPTIMIZATION FOR ICP-BASED DETECTION OF CERIUM STRONTIUM AND URANIUM in CANNED TUNA PRODUCTS</i>
15:05 – 15:20	ESCE005 Dr. Nur Azreena Idris (Malaysian Palm Oil Board) <i>ENHANCING THE PERFORMANCE OF OIL PALM TRUNK PARTICLEBOARDS: EFFECTS OF THERMAL, CHEMICAL, AND ANTIFUNGAL PRE-TREATMENTS</i>
15:20 – 15:35	ESCE058 Dr. Anisuzzaman S.M. (Universiti Malaysia Sabah) <i>AMMONIUM IONS REMOVAL USING CARRAGEENAN ACTIVATED CARBON FROM AQUEOUS SOLUTION</i>
15:35 – 15:50	ESCE122 Prof. Yantus Neolaka (Universitas of Nusa Cendana) <i>SYNTHESIS, CHARACTERIZATION, AND ADSORPTION APPLICATION OF SEAWEED (<i>Eucheuma cottonii</i>)-BASED MAGNETIC BIOCHAR FOR METHYL ORANGE DYE</i>

PROGRAMME
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13 AUGUST 2025 (DAY 2)

PARALLEL SESSION 2C: ANYAMAN 3

MATERIAL SCIENCE ENGINEERING/ RENEWABLE ENERGY/ ENVIRONMENTAL ENGINEERING

Chairman: Dr. Anisuzzaman S.M.

Co-chairman: Assoc. Prof. Ts. Dr. Nurul Aini Razali

Microsoft Team Link: <https://tinyurl.com/4by9zdhu>

15:50 – 16:05	ESCE098 Dr. Leong Siew Yoong (Universiti Tunku Abdul Rahman) <i>EFFECTS OF DRYING CONDITIONS ON MOISTURE CONTENT, CRUDE PROTEIN YIELD AND FUNCTIONAL GROUP FEATURES OF <i>Hermetia illucens</i> PREPUPAE</i>
16:05 – 16:20	ESCE023 Dr. Bashir Abubakar Abdulkadir (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>REVIEW ON STRUCTURAL CORRELATIONS OF MAGNESIUM HYDRIDE CONFINED HOLLOW FIBROUS NANOSILICA ON THE THERMODYNAMIC, KINETICS, AND MECHANISM OF HYDROGEN STORAGE SYSTEM</i>
16:20 – 16:35	ESCE043 Ms Kong Sheh Ching (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>EFFECT OF LIQUID-BINDER RATIO ON PERFORMANCE OF ALKALI-HYDROXIDE FREE GEOPOLYMER CONCRETE</i>
16:35 – 16:50	ESCE112 Mr Yee Jia Jun (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>MECHANICAL PROPERTIES OF RECYCLED CONCRETE WITH TEXTILE FIBRES</i>
16:50 – 17:05	ESCE046 Mr. Rafiuddin Mohd. Yunus (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>EXPLORING GREEN PROCUREMENT IN MANUFACTURING: A BIBLIOMETRIC ANALYSIS OF PAST TRENDS AND FUTURE DIRECTION</i>
17:05 – 17:20	ESCE026 Mr.Clint KS (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>ENVISIONING NEXT-GEN ENERGY SOLUTIONS: A DEEP DIVE INTO MXENE-MOF COMPOSITES – SYNTHESIS, PROPERTIES, AND FUTURE APPLICATIONS IN ENERGY STORAGE TECHNOLOGIES</i>
17:20 – 17:35	ESCE063 Ms. Siti Nor Amira binti Rosli (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>CATALYTIC PERFORMANCE OF NI/CEO₂ CATALYSTS IN BI-REFORMING OF METHANE: EFFECT OF NI LOADING</i>

14 AUGUST 2025 (DAY 3)

PARALLEL SESSION 3A: VIRTUAL ROOM 1

**FOOD SCIENCE & TECHNOLOGY/ NATURAL PRODUCTS &
INDUSTRIAL CROPS/SAFETY AND HEALTH
MANAGEMENT/ENVIRONMENTAL ENGINEERING/WASTE
WATER/FLUID FLOW**

Chairman: Assoc. Prof Ir Dr Chin Siew Choo

Co-Chairman: Assoc. Prof Ts Dr Nasratun Binti Masngut

Microsoft Team Link: <https://shorturl.at/pHDqp>

09:00 – 09:20	KEYNOTE SPEAKER 3 Assoc. Prof. Ir. Dr. Anwar Ilmar Ramadhan (Universitas Muhammadiyah Jakarta) <i>DEVELOPMENT OF NANOPARTICLES AND NANOFLUIDS IN INDONESIA: APPLICATION IN THERMAL ENGINEERING</i>
09:20 – 09:35	ESCE009 Dr. Nor Famila Che Mat (Universiti Malaysia Sarawak) <i>DEVELOPMENT OF A SUPER LEARNER MACHINE LEARNING MODEL FOR ENHANCED PREDICTION IN CRYOGENIC NITROGEN REJECTION UNR (NRU)</i>
09:35 – 09:50	ESCE022 Mr. Paul Bryan Amagon (University of Batangas, Philippines) <i>ASSESSMENT AND EVALUATION OF INDOOR AIR QUALITY PARAMETERS AND THEIR EFFECTS ON STUDENTS' HEALTH, COMFORT AND PERFORMANCE INSIDE SELECTED NATURALLY VENTILATED AND AIR CONDITIONED CLASSROOMS IN BATANGAS CITY, PHILIPPINES</i>
09:50 – 10:05	ESCE081 Prof. Gusti Budiana (Universitas of Nusa Cendana) <i>IDENTIFICATION OF SECONDARY METABOLITE, BIOACTIVITY AND SUNSCREEN ACTIVITY TESTS OF THE ETHANOLIC EXTRACT OF CANTELLA ASIATIC L</i>
10:05 – 10:20	ESCE083 Mrs. Amna Alfarsi (University of Sharjah) <i>LABORATORY SAFETY AWARENESS AND PRACTICES IN ACADEMIC SETTINGS: A REVIEW FOCUSED ON SUSTAINABLE RISK MANAGEMENT</i>
10:20 – 10:35	ESCE105 Mr. B. Handoko Purwojatmiko (Politeknik STMI Jakarta) <i>BALANCING GROWTH AND SAFETY: RETHINKING OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT IN INDONESIA'S CHEMICAL INDUSTRY</i>

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14 AUGUST 2025 (DAY 3)

PARALLEL SESSION 3A: VIRTUAL ROOM 1

FOOD SCIENCE & TECHNOLOGY/ NATURAL PRODUCTS &
INDUSTRIAL CROPS/SAFETY AND HEALTH
MANAGEMENT/ENVIRONMENTAL ENGINEERING/WASTE
WATER/FLUID FLOW

Chairman: Assoc. Prof. Ts. Dr. Nurul Aini Razali

Co-Chairman: Assoc. Prof. Ts. Dr. Siti Kholijah Abdul Mudalip

Microsoft Team Link: <https://shorturl.at/pHDqp>

10:45 – 11:00

ESCE084

Dr Murinto (Universitas Ahmad Dahlan)

*CLASSIFICATION OF FRESH FRUITS AND VEGETABLES USING
THE MODEL ARCHITECTURE OF EFFICIENTNET-B7
CONVOLUTIONAL NEURAL NETWORK*

11:00 – 11:15

ESCE027

**Mr. Heryanda Aqshadiova (Institut Teknologi Sepuluh
Nopember)**

*EVALUATION OF PERMEABLE REACTIVE BARRIER (PRB)
WITH CEMENT AND GEOPOLYMER BINDERS FOR THE
REMEDIATION OF LEAD (Pb) CONTAMINATED WATER*

11:15 – 11:30

ESCE028

**Mrs. Isnaini Shofariyah Aprilianti (Institut Teknologi
Sepuluh Nopember)**

*STUDY OF THE ABILITY OF PERMEABLE REACTIVE BARRIER
(PRB) MADE OF BIOCHAR WITH GYPSUM AND CLAY
ADHESIVES IN THE ELIMINATION OF LEAD HEAVY METALS
(PB)*

11:30 – 11:45

ESCE067

**Assoc. Prof Dr Sunarti Rahman (Universiti Malaysia
Pahang Al-Sultan Abdullah)**

*ENHANCED PARACETAMOL REMOVAL FROM HOSPITAL
WASTEWATER USING GRAPHENE OXIDE-INFUSED MIXED
MATRIX AND THIN FILM COMPOSITE MEMBRANES*

14 AUGUST 2025 (DAY 3)

PARALLEL SESSION 3A: VIRTUAL ROOM 1

FOOD SCIENCE & TECHNOLOGY/ NATURAL PRODUCTS &
INDUSTRIAL CROPS/SAFETY AND HEALTH
MANAGEMENT/ENVIRONMENTAL ENGINEERING/WASTE
WATER/FLUID FLOW

Chairman: Assoc. Prof. Ts. Dr. Nurul Aini Razali

Co-Chairman: Assoc. Prof. Ts. Dr. Siti Kholijah Abdul Mudalip

Microsoft Team Link: <https://shorturl.at/pHDqp>

11:45 – 12:00

ESCE087

Ms Sherly M.F. Ledoh (Universitas of Nusa Cendana)

*ADSORPTION OF LEAD ION (PB2+) ON BIOCHAR MADE FROM
PALM SHELL (BORASSUS FLABELLIFER L)*

12:00 – 12:15

ESCE092

Dr Siti Ilyani Rani (University College TATI (UCTATI))

*CAMERA-BASED ANALYSIS OF FLOW BEHAVIOR IN BULK
POWDER DURING AXIAL FILLING*

12:15 – 12:30

ESCE116

**Ir. Dr. Khairul Umurani (Universitas Muhammadiyah
Sumatera Utara)**

*ORIFICE PLATE 3D PRINTING AS AN INNOVATION IN
MEASURING OF AIR FLOW THROUGH PVC PIPES ON FORCED
WET COOLING TOWER*

PROGRAMME
TENTATIVE

14 AUGUST 2025 (DAY 3)

PARALLEL SESSION 3B: VIRTUAL ROOM 2

ADVANCED MATERIAL/ SEPARATION TECHNOLOGY/ MATERIAL
SCIENCE ENGINEERING/ RENEWABLE ENERGY/HEAT TRANSFER

Chairman: Prof. Ir. Ts. Dr. Kumaran A/L Kadirgama

Microsoft Team Link: <https://shorturl.at/yZS1X>

09:00 – 09:20	KEYNOTE SPEAKER 4 Dr. Chua Kian Jon (National University of Singapore) <i>INNOVATIVE COOLING PROCESSES IN THERMAL ENGINEERING FOR SUSTAINABLE SOLUTIONS</i>
09:20 – 09:35	ESCHE031 Mr. Thoriquil Huda (Institut Teknologi Sepuluh Nopember) <i>GRANULAR ASBUTON B 5/20 IN RECLAIMED ASPHALT PAVEMENT MIXTURES ON MARSHALL STABILITY PERFORMANCE</i>
09:35 – 09:50	ESCE052 Dr. Chiam Chel Ken (Universiti Malaysia Sabah) <i>ANIONIC AND CATIONIC CELLULOSE/ALGINATE/BACL2 COMPOSITE MEMBRANE FOR OIL/WATER SEPARATION</i>
09:50 – 10:05	ESCE053 Dr. Yasir Shariff (Taibah University) <i>OUTDOOR THERMAL CONCENTRATIONS OVER TWO LAYERS BUILDING MATERIALS EFFECT ON INTERNAL MEASUREMENTS</i>
10:05 – 10:30	ESCE069 Assoc. Prof Md Raisul Islam (National University of Singapore) <i>A STUDY ON INTEGRATION OPPORTUNITIES OF RENEWABLE ENERGY SOURCES TO DISTRICT COOLING SYSTEMS</i>
10:20 – 10:35	ESCE076 Dr. Pius Dore Ola (Universitas of Nusa Cendana) <i>LOWERING THE CONCENTRATION OF GLYCEROL IN BIODIESEL USING CHOLINE CHLORIDE-GALLIC ACID DEEP EUTECTIC SOLVENT: A SUSTAINABLE AND ECO-FRIENDLY APPROACH</i>

14 AUGUST 2025 (DAY 3)

PARALLEL SESSION 3B: VIRTUAL ROOM 2

ADVANCED MATERIAL/ SEPARATION TECHNOLOGY/ MATERIAL
SCIENCE ENGINEERING/ RENEWABLE ENERGY/HEAT TRANSFER

Chairman: Assoc. Prof. Ir. Ts. Dr. Devarajan A/L Ramasamy

Microsoft Team Link: <https://shorturl.at/yZS1X>

10:45 – 11:00

ESCE130

Miss Kohmalam Ayanasamy (Universiti Malaysia Pahang Al-Sultan Abdullah)

*ADVANCEMENTS IN XYLO-OLIGOSACCHARIDES (XOS)
PURIFICATION AND FURFURAL MITIGATION VIA
NANOFILTRATION: UNVEILING THE IMPACT OF KEY FACTOR
INTERACTIONS*

11:00 – 11:15

ESCE078

Dr. Zhifeng Huang (National University of Singapore)

*IMPACT OF OPTIMIZATION TIME SPAN ON TECHNO-
ECONOMIC PERFORMANCE OF A PV-DRIVEN STANDALONE
DISTRICT COOLING SYSTEM*

11:15 – 11:30

ESCE091

Dr. Sealtial Mau (Universitas of Nusa Cendana)

*PRELIMINARY INVESTIGATION OF HEAT TRANSFER
PERFORMANCE IN A SHELL-HELICAL COILED TUBE HEAT
EXCHANGER WITH SEA WATER AS THE HEATING MEDIUM*

11:30 – 11:45

ESCE104

Mrs Fitria Ika Aryanti (Politeknik STMI Jakarta)

*SURFACE MODIFICATION OF RICE HUSK AS FILLER IN LOW-
DENSITY POLYETHYLENE COMPOSITES USING SALT-
ASSISTED SONICATION METHOD*

PROGRAMME
TENTATIVE

14 AUGUST 2025 (DAY 3)

PARALLEL SESSION 3B: VIRTUAL ROOM 2

ADVANCED MATERIAL/ SEPARATION TECHNOLOGY/ MATERIAL
SCIENCE ENGINEERING/ RENEWABLE ENERGY/HEAT TRANSFER

Chairman: Assoc. Prof. Ir. Ts. Dr. Devarajan A/L Ramasamy

Microsoft Team Link: <https://shorturl.at/yZS1X>

11:45 – 12:00

ESCE108

Mr. Safril (Politeknik STMI Jakarta)

*COMPARATIVE STUDY OF RESIDENTIAL AIR CONDITIONING
SYSTEMS PERFORMANCE WITH ENVIRONMENTALLY
FRIENDLY REFRIGERANTS*

12:00 – 12:15

ESCE060

Ir. Rachma Tia Evitasari (Universitas Ahmad Dahlan)

*TAGUCHI DESIGN-BASED OPTIMIZATION OF NATURAL DYE
EXTRACTION FROM MAHOGANY WOOD AND SYMPLOCOS FOR
SUSTAINABLE BATIK DYEING*

12:15 – 12:30

ESCE123

Ms. Melur Syahmina Norhidzam (Universiti of Malaya)

*KINETIC MODELING AND EFFICIENCY ANALYSIS OF
ULTRASOUND-ASSISTED EXTRACTION OF AKBA FROM
BOSWELLIA CARTERII*

14 AUGUST 2025 (DAY 3)

PARALLEL SESSION 3C: VIRTUAL ROOM 3

FOOD SCIENCE & TECHNOLOGY/ NATURAL PRODUCTS &
INDUSTRIAL CROPS/SAFETY AND HEALTH

Chairman: Assoc. Prof. Ts. Dr. Muhamad Bin Mat Noor

Microsoft Team Link: <https://shorturl.at/qjpNe>

09:05 – 09:20	KEYNOTE SPEAKER 5 Dr. Benny Rio Fernandez (PTKI Medan) <i>MEASUREMENT AND ANALYSIS OF DIELECTRIC PARTICLES TRAPPED AT LIQUID-LIQUID INTERFACE</i>
09:20 – 09:35	ESCE071 Assoc. Prof. Mohd Yusri Mohd Yunus (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>MASS BALANCE MISMATCH: WHY RARE EARTH PROCESS FLOW SHEETS FAIL AT SCALE-UP</i>
09:35 – 09:50	ESCE106 Mr Bin Zhang (SEGi University) <i>NUMERICAL SIMULATION ANALYSIS ON THE EFFECT OF UPSTREAM BUILDING HEIGHT FOR NATURAL VENTILATION OF URBAN SHELTERED BUILDING</i>
09:50 – 10:05	ESCE059 Mrs Elnaz Yousefi (Universiti Malaysia Pahang Al-Sultan Abdullah) <i>OXIDATION MECHANISMS AND SURFACE MODIFICATION STRATEGIES OF BORON NITRIDE NANOMATERIALS: A REVIEW</i>
10:05 – 10:20	ESCE061 Prof. Erna Astuti (Universitas Ahmad Dahlan) <i>COMPARISON OF CATALYST CHARACTERISTICS FROM NATURAL ZEOLITE AND PALM OIL SHELLS</i>
10:20 – 10:35	ESCE107 Mr Shi Cheng Li (SEGi University) <i>CFD INVESTIGATION OF THE INFLUENCE OF ROTATIONAL SPEED ON HEAT TRANSFER EFFICIENCY OF SCRAPED SURFACE HEAT EXCHANGER</i>

PROGRAMME
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14 AUGUST 2025 (DAY 3)

PARALLEL SESSION 3C: VIRTUAL ROOM 3

FOOD SCIENCE & TECHNOLOGY/ NATURAL PRODUCTS &
INDUSTRIAL CROPS/SAFETY AND HEALTH

Chairman: Assoc Prof. Dr. Januar Parlaungan Siregar

Microsoft Team Link: <https://shorturl.at/qjpNe>

10:45 – 11:00

ESCE124

**Assoc. Prof Asadjon Kambarov (Almalyk branch of the
Tashkent State Technical University named after Islam
Karimov)**

*RESEARCH INTO CHANGES IN THE POTENTIAL ENERGY OF
VARIOUS TYPES OF EXPLOSIVES IN BOREHOLES*

11:00 – 11:15

ESCE115

Ir Dr Suherman (Universitas Muhammadiyah Sumatera Utara)
*MAPPING RESEARCH TRENDS IN BIODIESEL PRODUCTION FROM
WASTE COOKING OIL: A BIBLIOMETRIC ANALYSIS OF HETEROGEN
CATALYTIC METHODS*

11:15 – 11:30

ESCE111

MS Sry Wahyuni (Politeknik Teknologi Kimia Industri Medan)
*UTILIZATION SPENT BLECHING EARTH, A PALM OIL REFINERY
WASTE, IN GLYCEROL PURIFICATION*

11:30 – 11:45

ESCE110

Annisa Mutiara Sani (Universitas Muhammadiyah Jakarta)
*COMPARATIVE ANALYSIS OF DRYING RATE AND MOISTURE
CONTENT REDUCTION IN CASSAVA PEEL USING DIRECT AND
INDIRECT SOLAR DRYING METHODS*

14 AUGUST 2025 (DAY 3)

PARALLEL SESSION 3C: VIRTUAL ROOM 3

FOOD SCIENCE & TECHNOLOGY/ NATURAL PRODUCTS &
INDUSTRIAL CROPS/SAFETY AND HEALTH

Chairman: Assoc Prof. Dr. Januar Parlaungan Siregar

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11:45 – 12:00	ESCE102 Dr. Tarworn Ruttithiwapanich (National Science and Technology Development Agency) <i>TEMPERATURE EFFECTS ON ANAEROBIC DIGESTION OF CASSAVA PULP: THE CASE STUDY OF INDUSTRIAL APPLICATION</i>
12:00 – 12:15	ESCE101 Dr Rycce Sylviana (Politeknik Teknologi Kimia Industri Medan) <i>WET STRENGTH PROPERTIES OF HANDSHEET PAPER FROM EMPTY OIL PALM FRUIT BUNCH PULP BY THE ADDITION OF POLYETHYLENE IMINE</i>
12:15 – 12:30	ESCE095 Dr Dimas Frananta Simatupang (Politeknik Teknologi Kimia Industri Medan) <i>SYNTHESIS OF BIOLUBRICANTS FROM PALM OIL MILL EFFLUENT USING COMMERCIAL LIPASE</i>
12:15 – 12:30	ESCE085 Dr Ibdal Satar (Universitas Ahmad Dahlan) <i>REMOVAL OF PHOSPHATE FROM DOMESTIC WASTEWATER USING CONSTRUCTED WETLANDS ECOTECHNOLOGY WITH SAND MEDIA AMENDED WITH BIOCHAR</i>

PROGRAMME
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