2023 Research, Invention, and Innovation Congress (RIIC2023)  
(https://ri2c-kmutnb.com/home.aspx)  
Session: Innovative Sustainable Science (iSS)

Venue: Online Conference at King Mongkut's University of Technology North Bangkok, Thailand  
Conference date: 24-25 August 2023

**Main topic coverages:** Environmental and Energy Technology

The other topics related to Environmental and Energy Technology include, but not limit to

- Energy and renewable energy
- Waste management and waste valorization
- Environment science and pollution management
- Sustainable development and management
- Natural Resource Management and improvement

**Innovative Sustainable Science (iSS) Editors**

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- Ponnusami Venkatachalam, Sastra deemed university, India
- Marttin Paulraj Gundupalli, University of Alberta, Canada

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1. Atthasit Tawai, KMUTNB, Thailand
2. Marttin Paulraj Gundupalli, University of Alberta, Canada
3. Prapakorn Tantayotai, Srinakarindwirot University, Thailand
4. Diana Jose, KMUTNB, Thailand
<table>
<thead>
<tr>
<th>ISS No.</th>
<th>R12C No.</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 August 2023. ISS Section 1, Room 1. Visual platform. Time 9.00-12.30 Session Chairs: Atthasit Tawai Co-chair: Martin Paulraj Gundupalli</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01009</td>
<td>Iss10</td>
<td>Optimization of Organosolv Pretreatment with Acid Catalyst to Enhance Enzymatic Saccharification of Corn Husk</td>
<td>Engkarat Buakeaw, Diana Jose, Wawat Rodiahwati, Martin Paulraj Gundupalli, Keerthi Katam, Prapakorn Tantatotai, Malinee Sriariyanun, and Kraipat Cheenkachorn</td>
</tr>
<tr>
<td>01010</td>
<td>Iss11</td>
<td>Process Optimization of Deep Eutectic Solvent Pretreatment of Coffee Husk Biomass</td>
<td>Sukunya Areeya, Martin Paulraj Gundupalli, Babu Dharmalingam, Baranitharan Paramasivam, Prapakorn Tantatotai, Patchanee Yasurin, Elizabeth Jayex Panakkal*</td>
</tr>
<tr>
<td>01008</td>
<td>Iss17</td>
<td>Oxalic Acid Pretreatment on Enhancement of Enzymatic Saccharification from Napier Grass for Biofuel Production</td>
<td>Danipa Panyarachun, Elizabeth Jayex Panakkal, Atthasit Tawai, Wawat Rodiahwati, Baranitharan Paramasivam, Suvaluk Asavasanti, Kraipat Cheenkachorn*</td>
</tr>
<tr>
<td>-</td>
<td>Iss01</td>
<td>The Effects of Combustion Phasing Induced by Water Injection on NOx Performance of GDI Engine at MBT Ignition Timing</td>
<td>Nattapon Boontek, Kampanart Theinnoi, Sak Sittichompo</td>
</tr>
<tr>
<td>01001</td>
<td>Iss04</td>
<td>Activity for Diesel Particulate Matter Oxidation of Silver Supported on Al₂O₃, TiO₂, ZnO, and CeO₂: The Effect of Oxygen Concentration</td>
<td>Punya Promhuad, Boonlue Sawatmongkhon*, Nuwong Chollacoop, Kampanart Theinnoi, Thawatchai Wongchang, Ekachai Juntasaro</td>
</tr>
<tr>
<td>01002</td>
<td>Iss07</td>
<td>The Influence of Direct Non-Thermal Plasma Treatment on Soot Characteristics under Low Exhaust Gas Temperature</td>
<td>Teerapong Iamcheerangkoon, Nuwong Chollacoop, Boonlue Sawatmongkhon, Thawatchai Wongchang, Kampanart Theinnoi*, Ekachai Juntasaro</td>
</tr>
<tr>
<td>01004</td>
<td>Iss08</td>
<td>Performance Analysis of Integral Process of Bio-Oil Production, Bio-Oil Upgrading, and Hydrogen Production from Sewage Sludge</td>
<td>Lida Simatasitkul*, Apiwat Lakkhanasombut, Worawit Morin, Supachai Jedsadajerm, Suksun Amornraksara, Kariththa Im-orb</td>
</tr>
<tr>
<td>01003</td>
<td>Iss30</td>
<td>Nano-particle Characteristic Emitted from Gasoline Direct Injection Engine Equipped with Non-Thermal Plasma Device</td>
<td>Pichitpon Neamyou, Kampanart Theinnoi*, Boonlue Sawatmongkhon, Sak Sittichompo</td>
</tr>
<tr>
<td>02012</td>
<td>Iss18</td>
<td>Manganese Constituent in Stainless Steels Oxidized in Oxygen Containing Water Vapor at 800 °C: High Temperature Oxidation and Volatilization</td>
<td>Methanan Sangsuebsri, Suwijak Pokwitidkul, Panya Wiman, Youhei Tanaka, Thammaporn Thublaor*</td>
</tr>
<tr>
<td>02003</td>
<td>Iss02</td>
<td>Immobilization of Cellulase on Zinc Oxide Deposited on Zeolite Pellets for Enzymatic Saccharification of Cellulose</td>
<td>Tokla EOM, Jantiya Isanapong, Pisist Kumnorkaew, Krisanavej Songthanasak, Peerapon Pornwongthong*</td>
</tr>
<tr>
<td>01007</td>
<td>Iss32</td>
<td>Performance Evaluation of Solar Radiation for Food and Agriculture Dryer</td>
<td>Srivialchai Susuk*, Weerayuth Promjan, Natscha Inchoorun, Rewadee Meesat, Wannee Suttivattanavet, Kusol Iamsub, Soravit Jamjumroon</td>
</tr>
<tr>
<td>Page</td>
<td>Session</td>
<td>Title</td>
<td>Authors</td>
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<td>----------------------------------------------------------------------</td>
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</tr>
<tr>
<td>01005</td>
<td>Iss23</td>
<td>Spirulina Cultivation Using Biogas CO₂ as the Carbon Source: Preliminary Study on Biomass Growth and Productivity</td>
<td>Raj Kumar Oruganti, Madhu Kumar Kumara, Rakesh Tejavath, Malinee Sriariyanun, Debraj Bhattacharyya*</td>
</tr>
<tr>
<td>01006</td>
<td>Iss03</td>
<td>Design and Development of Performance Rating Apparatus for Cold Room Refrigeration Unit Using Cooling-Load Balance Method</td>
<td>Arruck Tragangoon, Khemapat Tontiwattananakul, Montri Ngamprukvanit, Chayanon Serttitkul*</td>
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<td><strong>25 August 2023. ISS Section 2, Room 1. Visual platform. Time 13.00-17.30</strong></td>
<td></td>
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<td>Session Chairs: Prapakorn Tantayotai</td>
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<tr>
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<td></td>
<td>Co-chair: Diana Jose</td>
<td></td>
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<tr>
<td>02001</td>
<td>Iss22</td>
<td>The Relationship Between Environmental Technology Patenting and Environmental Performance Index in Countries: What Does It Mean and How Can We Measure It</td>
<td>Tatyana Maximova*, Dmitry Verzilin, Min Zhang</td>
</tr>
<tr>
<td>02002</td>
<td>Iss25</td>
<td>Economic Assessment of Medium and Large-Scale Landfill Mining Business: Case Study Thailand</td>
<td>Anupong Muttaraid, Sirintornthep Towprayoon, Chart Chiemchaisri, Thapat Silalertruksa, Komsilp Wangyao*</td>
</tr>
<tr>
<td>-</td>
<td>Iss31</td>
<td>Mechanical properties of pyrolysis carbon black in rubber compound application</td>
<td>Teerapat Anupabphan*, Noppakun Kaewdam, Bancha Seataew, Torlab Nangnoi, Napan Narischat, Chonlakarn Wongkhorsub</td>
</tr>
<tr>
<td>02015</td>
<td>Iss28</td>
<td>Understanding the Environmental Distribution and Potential Health Risks of Pollutants from Deodorant Products: A Review</td>
<td>Meenakshi Kakara, Srideep Dasari, Marttin Paulraj Gundupalli, Tawiwan Kangsadana, Keerthi Katam*</td>
</tr>
<tr>
<td>02016</td>
<td>Iss21</td>
<td>Pharmaceuticals and Agro-Chemicals in Groundwater of Hyderabad, India</td>
<td>Kalyani Subbalakshmi Golakoti, Sneha Maloth, Madhu Kumar Kumara, Murali Krishna Sabavath, Sukanya Areeya, Debraj Bhattacharyya, Keerthi Katam*</td>
</tr>
<tr>
<td>02017</td>
<td>Iss29</td>
<td>A Comparison of Fiber Types in Community for Mist Collection</td>
<td>Thana Ananacha, Onvalee Amornleetrakul*</td>
</tr>
<tr>
<td>02008</td>
<td>Iss05</td>
<td>Utilization of Nongkhai Black Jasmine Rice Bran Oils for Development of Functional Drink Emulsion</td>
<td>Ketinun Kittipongpitayya*, Teerawan Suwan, Piyarach Kullamethee, Premsak Puangploy, Pattaranan Yimchom, Tanyaporn Intaratul</td>
</tr>
<tr>
<td>02007</td>
<td>Iss19</td>
<td>Cider Production from King Mandarin (Citrus nobilis Lour.) and Its Antioxidant Activity</td>
<td>Hao Thien Vo, Bich Ngoc Thi Bui, Chau Minh Luu, Thanh Ngoc Nguyen, Long Dang Hoang Bui, Nhi Yen Thi Tran, Phat Tan Dao, Phong Xuan Huynh*</td>
</tr>
<tr>
<td>02006</td>
<td>Iss20</td>
<td>Antidiabetic Activity and Molecular Docking Analysis of Milky Mushroom (Calocybe indica) Grown on the Renewable Substrate</td>
<td>Anne Sahithi Somavarapu Thomas, Vijaya Lakshmi Murugan Kavitha, Jayapiya Sekar, Mahalakshmi Velmurugan, Malinee Sriariyan, and Vinodhini Shanmugam*</td>
</tr>
<tr>
<td>02005</td>
<td>Iss24</td>
<td>Levan Production in Shake Flask and Fermenter - Influence of Feeding</td>
<td>Bhuvaneshwari Veerapandian, Saravanar Ramiah Shanmugam,</td>
</tr>
<tr>
<td>Issue</td>
<td>Title</td>
<td>Authors</td>
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<td></td>
</tr>
<tr>
<td>01011</td>
<td>Strategy on Levan Yield and Molecular Weight Distribution</td>
<td>Srividhya Krishnan, Subramaniyasharma Sivaraman, Malinee Sriariyanun, Ponnumasi Venkatachalam*</td>
<td></td>
</tr>
<tr>
<td>02004</td>
<td>Conversion of lignocellulose residue obtained from biorefinery stream to electricity by microbial fuel cell</td>
<td>Keerthi Katam, Maythee Saisriyoot, Supacharee Roddecha, Peerapong Pornwongthong, Malinee Sriariyanun*</td>
<td></td>
</tr>
<tr>
<td>02004</td>
<td>Climate-Conscious Food Preserving Technologies for Food Waste Prevention</td>
<td>Yousif Alhammadi, Doris Ying Ying Tang, Kit Wayne Chew, Suksun Amornraksa, Pau Loke Show*</td>
<td></td>
</tr>
<tr>
<td>02009</td>
<td>The Future of Food Preservation: Active Packaging with Controlled Release Systems</td>
<td>Khadija Farousha, Pei En Tham, Kit Wayne Chew, Suksun Amornraksa, Pau Loke Show*</td>
<td></td>
</tr>
<tr>
<td>02010</td>
<td>From Kimchi to Kefir: An Exploration of Probiotics, Benefits, and Future</td>
<td>Malak AbuZaid, Sook Sin Chan, Kit Wayne Chew, Atthasit Tawai, Pau Loke Show*</td>
<td></td>
</tr>
</tbody>
</table>

*Presenter names are highlighted in Bold.
The 4th Research, Invention, and Innovation Congress (RI²C 2023)
Session of Opening Ceremony & Keynote Lecture
Thursday, 24 August 2023 (9:00 a.m. – 3:30 p.m.)
President of KMUTNB, Thailand

Prof. Dr. Ing. habil. Suchart Siengchin

Dear colleagues, professors, researchers,

(KMUTNB, Thailand)

Prof. Dr. Somrerk Chandra-ambhorn

On behalf of the organizing committee
Intelligent Sensing and Communications (ISC)

We focus on a broad range of communications, sensors and signal processing involving the introduction and development of new advanced theoretical and practical algorithms.

We derive innovative methods for the advancement of knowledge and a better understanding of the technical concepts of current and future communications, sensors and signal processing systems.
Presentation Photo

25 August 2023. ISS Section 1, Room 1. Visual platform. Time 9.00-12.30
Session Chairs: Atthasit Tawai
Co-chair: Marttin Paulraj Gundupalli

- ISS_10 (01009)

- ISS_11 (01010)

- ISS_17 (01008)
• ISS_01

The Effects of Combustion Phasing Induced by Water Injection on DeNOx Performance of GDI Engine at MBT Ignition Timing

Nuttawut Buratati, Karpaporn Theinlai, Saris Aksarapinyo-
Research Center for Combustion Technology and Alternative Energy (RCCTAE)
Science and Technology Research Institute
King Mongkut’s University of Technology North Bangkok

• ISS_04 (01001)

Activity for Diesel Particulate Matter Oxidation of Silver Supported on ALO, TiO2, ZnO, and CuO: The Effect of Oxygen Concentration

Nuttaporn Jamnavee, Pimjai Jakvawongchareon
Weerachai Wongsing and Ekachai Jintasomboon

• ISS_07 (01002)

The Influence of Direct Non-Thermal Plasma Treatment on Soot Characteristics under Low Exhaust Gas Temperature

Theravat Wongchugs, Karpaporn Theinlai, and Ekachai Jintasomboon

Department of Power Engineering, College of Engineering, King Mongkut’s University of Technology North Bangkok, Thailand

Economic and Energy Efficiency Research Team, National Energy Technology Center (NTEC), National Sains and Technology Development Agency

Director of Technology and Innovation, Faculty of Engineering and Technology, King Mongkut’s University of Technology North Bangkok, Bangkok Campus, Bangkok, Thailand

Environmental Impact Assessment and Environmental Impact (EIA), Institute of Technology, King Mongkut’s University of Technology North Bangkok, Thailand

The Department of Engineering Science of KMITL, King Mongkut’s University of Technology North Bangkok, Thailand

Central Research and Development Institute, King Mongkut’s University of Technology North Bangkok, Thailand

Science and Technology Research Institute, King Mongkut’s University of Technology North Bangkok, Thailand

Thank you for your attention

Q&A?
• ISS_08 (01004)

Performance analysis of integral process of bio-oil production, bio-oil upgrading, and hydrogen production from sewage sludge

• ISS_30 (01003)

Nano-particle Characteristic Emitted from Gasoline Direct Injection Engine Equipped with Non-Thermal Plasma Device

• ISS_18 (02012)

Manganese Constituent in Stainless Steels Oxidized in Oxygen Containing Water Vapor at 800 °C: High Temperature Oxidation and Volatilization
- **ISS_02 (02003)**

  - **ISS_32 (01007)**

  - **ISS_23 (01005)**

  - **The END**
25 August 2023. ISS Section 2, Room 1. Visual platform. Time 13.00-17.30
Session Chairs: Prapakorn Tantayotai
Co-chair: Diana Jose

- ISS_03 (01006)
  Design and Development of Performance Rating Apparatus for Cold Room Refrigeration Unit using Cooling-Load Balance Method
  Arruck Targamoon
  Department of Mechanical & Aeronautical Engineering
  Suranaree University of Technology<br>

- ISS_22 (02001)
  The Relationship between Environmental Technology Patenting and Environmental Performance Index in Countries: what Does it Mean and How Can we Measure it
  Eunice Mananur
  Co-chair: Diana Jose
  Aug 2023

- ISS_25 (02002)
  Economic assessment of medium and large-scale landfill mining business – Case Study Thailand
  Anupong Wuttikul
  Co-Chair: Diana Jose
• ISS_26 (02013)

Applying Machine Learning to the Design and Optimization of Polymer Composites: A Review

• ISS_27 (02014)

Revolutionizing the World with Smart Polymers and Composite Materials: A Comprehensive Review

• ISS_31

Mechanical properties of pyrolysis carbon black in rubber compound application

Thank you for attention
ISS_28 (02015)

UNDERSTANDING THE ENVIRONMENTAL DISTRIBUTION AND POTENTIAL HEALTH RISKS OF POLLUTANTS FROM DEODARANT PRODUCTS: A REVIEW

Presenter
Meeinokshi Kotha
Department of Civil Engineering, Osmania University, Hyderabad, India

ISS_21 (02016)

Pharmaceuticals and Agro-chemicals in groundwater of Hyderabad, India

Presenter
Kalyani Subba Lakshmi
Department of Civil Engineering, Osmania University, Hyderabad, India

ISS_29 (02017)

A Comparison of Fiber Types in Community for Mist Collection

Presenter
Thana Auanta and Onsalie Amrelarzai
Faculty of Architecture and Design, King Mongkut’s University of Technology, Bangkok, Thailand

Conclusion

- Common substances like benzalkonium chloride, ethyl alcohol, and silicon may cause skin irritation, allergic reactions, respiratory irritation, and, in certain circumstances, affect reproductive hormones.
- Furthermore, these substances are not confined to specific environmental compartments.
- When applied, they can enter the atmosphere and then spread through various different channels to get into water and soil.
- While some substances are naturally biodegradable, others linger in the environment for extended periods, which can cause bioaccumulation in the food chain.
- It's essential to assess the long-term effects of exposure, particularly in vulnerable populations.
- Manufacturers, regulators, and consumers must prioritize the use of safer ingredients and encourage the development and adoption of environmentally friendly, natural alternatives.

Thank you

The working group would like to thank the Electricity Generating Authority of Thailand (EGAT) for providing financial support for research work.
- ISS_05 (02008)

Utilization of Nongkhai black jasmine rice bran oils for development of functional drink emulsion

Kattan Kittayongwattana*, Swaranan Suwan, Phayong Kulliyodthong,
Pecharat Prasongkhum, Patarasak Yearkorn, and Tanongsin Intarasai
Department of Agro-industry, Technology, and Management,
Faculty of Agro-industry, KMUTNB, Prachachuen, Thailand

- ISS_19 (02007)

Cider Production from King Mandarin (Citrus Nobilis L. Osbeck) and Its Antioxidant Activity

ISS2022/19 - Vo Thien Hua screen

- ISS_20 (02006)

Antidiabetic activity and molecular docking analysis of milky mushroom (Calocybe indica) grown on the economical substrate

Anne Setabthi Somchartong Phanan*, Wijitra Lakland, Pornyen Maiyaphi, Jagupatra Sulir, Mukda Anon, and Thiti Ananda
Institute of Bioinformatics (IBI), UCM Research, Chonburi, Thailand
Department of Bioinformatics, UCM, Chonburi, Thailand
Department of Microbiology, Mahidol University, Bangkok, Thailand

Paper ID: ISS20

Antidiabetic activity and molecular docking analysis of milky mushroom (Calocybe indica) grown on the economical substrate

The 4th Research, Innovation, and Innovation Congress (MICE 2021)

Innovation for Better Life

Thank You!
• ISS_24 (02005)

Levan production in shake flask and fermenter – influence of feeding strategy on levan yield and molecular weight distribution

• ISS_12 (01011)

Conversion of lignocellulose residue obtained from biorefinery stream to electricity by microbial fuel cell

• ISS_13 (02004)

Climate-Conscious Food Preserving Technologies for Food Waste Prevention
- ISS_14 (02011)

- ISS_15 (02009)

- ISS_16 (02010)