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7th International Conference on Tropical Resources and Sustainable Science

*Tropical Nexus:
Integrating Science, Innovation, and Sustainability*

Programme Book

Hotel Pangeran Pekanbaru,
Riau, Indonesia
& Hybrid Conference

12-13 August 2025

ENTREPRENEURSHIP IS OUR THRUST



OfficialUMK



**PROGRAMME
BOOK**

***7TH International
Conference on Tropical
Resources and
Sustainable Science***

**TROPICAL NEXUS: INTEGRATING SCIENCE,
INNOVATION AND SUSTAINABILITY**

Published by:
Faculty of Earth Science

2025

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Inaugural speech

Prof. Ir. Ts. Dr. Arham Abdullah

Vice Chancellor, Universiti Malaysia Kelantan



Assalamualaikum Warahmatullahi Wabarakatuh and Greetings,

All praise be to Allah Almighty for His grace and blessings, that we are able to gather today, whether physically in Indonesia or virtually, to officiate this much-anticipated conference, the 7th International Conference on Tropical Resources and Sustainable Science (CTReSS 7.0).

Firstly, allow me to extend my highest appreciation and gratitude to the entire Organizing Committee, especially the Faculty of Earth Science (FSB), Universiti Malaysia Kelantan, for their continuous dedication and commitment in making this prestigious conference a success. Since its first edition in 2014, and through six consecutive editions, CTReSS has been a consistently important platform, demonstrating UMK's unwavering commitment to sustainability and tropical resources.

This year, CTReSS 7.0 adopts a highly relevant and progressive theme: "Tropical Nexus: Integrating Science, Innovation and Sustainability." This theme is more than just words; it is a call to action and integrated thinking in addressing the increasingly complex global challenges related to natural resources and sustainability. It underlines the urgent need to combine scientific discoveries with pragmatic innovation to achieve comprehensive sustainability.

CTReSS 7.0 marks a new milestone and a new chapter for this conference. We are proud to announce our strategic collaborations with three esteemed universities as co-hosts: Universitas Muhammadiyah Riau from Indonesia, as well as Reva University and KL University from India. This collaboration not only enriches the conference experience but also strengthens our international collaborative network, broadening the reach of knowledge and expertise in tropical resource management.

The choice of Universitas Muhammadiyah Riau, Indonesia, as the host for the physical conference is highly appropriate. Its strategic location within the tropical corridor offers a unique and relevant perspective for our discussions. Furthermore, the hybrid format implemented will ensure broad participation from around the world, allowing more academicians, industry leaders, experts, and professionals to share their latest insights and findings.

As a dynamic platform, CTReSS 7.0 will explore sustainable solutions for responsible natural resource management. This includes viewing from environmental, social, and economic perspectives. I am confident that the discussions and presentations throughout these two days (August 12-13, 2025) will generate new ideas, stimulate innovation, and pave the way for closer multi-disciplinary collaborations.

Let us seize this opportunity to exchange views, build professional networks, and collectively contribute towards building a more sustainable future for our planet, especially in this richly biodiverse tropical region. Your contributions, whether in terms of research, best practices, or policy, are invaluable in shaping the global sustainability narrative.

Finally, I would like to reiterate my gratitude to all parties involved in the organization of CTReSS 7.0, the co-organizers, the working committee, the sponsors, and not forgetting all participants who have committed to attending and participating in this conference.

With the recitation of Bismillahirrahmanirrahim, I have the great pleasure to officially declare the 7th International Conference on Tropical Resources and Sustainable Science (CTReSS 7.0) open.

Thank you.

Welcoming remarks

Assoc. Prof. Dr. Suganthi Appalasamy

Chairman of CTReSS 7.0



All praises to the Lord!

It has been a great honor for me to chair the 7th edition of this year Conference of tropical resources and sustainable sciences. This year's theme being Tropical Nexus: Integrating Science, Innovation and Sustainability.

Welcome to all international keynote speakers, invited speakers, researcher who attended from various institutes around the world and fellow academicians and participants. There are some of the researchers who repeatedly submit their wonderful reports and presented their studies every year without fail. Thank you for your continuous support. This year's conference has been unique, with hybrid mode done concurrently with Universitas Muhammadiyah Riau (Indonesia) where participants have the opportunity to be present physically and discuss their studies in Riau. Not forgetting our honourable collaborators from Reva University and KL University, India, who have been supporting the conference organization directly and indirectly. Our sponsors, we thank you for generous contribution which added impact to our conference organizations. I would like to use this opportunity to thank my wonderful team in UMK and in UMRI who have been working tirelessly to coordinate between online and physical conference, which in my opinion, is a feat on its own. I hope this paved a precedence to other conferences and in coming year, to organize a program in similar format successfully.

This year, we have received a numerous paper with some of the topics very much depicting current environmental issues and some application of latest technologies to tackle it. I hope this conference would be a platform to gather scientists and researchers to share their innovative research in different areas of studies and enhance networking across disciplines. I believe, this knowledge sharing and discussion could help to forge new ideas and strategies in conducting more meaningful research.

Lastly, I on behalf of Universiti Malaysia Kelantan and Faculty of Earth Science, sincerely hope this year's conference would be a fruitful event for participants who attended this physically, virtually and also for the poster presenters.

Thank you once again and see you next year!

Closing remarks

Assoc. Prof. Dr. Zulhazman Hamzah

Dean, Faculty of Earth Science, Universiti Malaysia Kelantan



Distinguished Guests, Esteemed Colleagues and Dear Participants,

Welcome to the closing ceremony of the 7th International Conference on Tropical Resources and Sustainable Science (CTReSS 7.0). Since its establishment in 2014, this conference has grown into a meaningful platform for global engagement in tropical science, sustainability and innovation.

This year's theme, "Tropical Nexus: Integrating Science, Innovation and Sustainability", captures the essence of what this gathering stands for. Over the past two days, we have brought together researchers, practitioners and thought leaders to address pressing tropical challenges through collaborative and cross-disciplinary efforts.

It is with great pride that we celebrate not only the intellectual outcomes of this conference but also the new partnerships forged along the way. CTReSS 7.0 marks a significant milestone as we expand our global academic network through new collaborations with Universitas Muhammadiyah Riau (Indonesia), REVA University (India) and KL University (India). These new alliances signify our shared commitment to advancing sustainable development goals through research, innovation and mutual learning.

This year also marks a new format for the conference. CTReSS 7.0 is our first hybrid event, with physical sessions held at the prestigious Hotel Pangeran in Pekanbaru, Riau, Indonesia and virtual participation from across the globe. This format has enabled broader inclusion, lower carbon footprints and enhanced knowledge sharing.

Over the course of the conference, we have engaged in thought-provoking discussions on topics ranging from climate resilience and tropical biodiversity to community-based sustainability solutions and technological innovations. The richness of ideas and depth of dialogue have underscored the power of interdisciplinary cooperation in addressing the complex realities of tropical environments.

As we bring this conference to a close, let us not view this as the end, but rather a beginning of stronger regional and global collaborations. I invite all of you scientists, academics, professionals, and students to continue this momentum through joint research, mobility programs, and sustainable development initiatives.

Let me also take this opportunity to reaffirm our dedication at Universiti Malaysia Kelantan. Our Tropical Rainforest Research Centre (TRaCe), established in 2022 at the Belum-Temenggor Forest Complex, continues to serve as a platform for impactful research, especially on tropical ecosystems. We welcome your ideas, partnerships, and presence there.

In closing, I would like to express my heartfelt gratitude to all our collaborators, committee members, and participants whether you joined us on-site in Pekanbaru or virtually from around the world. Your enthusiasm, insights, and commitment have made CTReSS 7.0 a truly memorable and successful event.

Let us carry the spirit of the Tropical Nexus into our future efforts where science, innovation, and sustainability intersect to shape a better world.

Thank you once again. Safe travels and see you at CTReSS 8.0.

Closing speech

Dr. Prasetya M.Si

***Dean, Faculty of Mathematics and Natural Sciences and Health,
Universitas Muhammadiyah Riau***



Distinguished guests, ladies and gentlemen,
Presenters and participants.

On behalf of the organizing committee and the Faculty of Mathematics and Natural Sciences and Health, Universitas Muhammadiyah Riau, I would like to express my deepest gratitude to all keynote and plenary speakers, invited guests, presenters, and participants who have contributed to the success of the 7th International Conference on Tropical Resources and Sustainable Sciences (CTReSS 7.0).

It has been an honor to host this year's conference physically at Universitas Muhammadiyah Riau in Pekanbaru, Riau Province, Indonesia, while also welcoming participants virtually from various countries. CTReSS 7.0 has served as a valuable platform for knowledge exchange, interdisciplinary collaboration, and the advancement of innovative and sustainable solutions for the management of tropical resources.

Centered on the theme **“Tropical Nexus: Integrating Science, Innovation, and Sustainability,”** this conference reflects our shared commitment to building bridges across institutions and borders in the pursuit of global environmental and social sustainability.

Our sincere appreciation goes to Universiti Malaysia Kelantan, particularly the Faculty of Earth Science, for the trust and continued collaboration in bringing CTReSS to new heights. It has been a privilege to co-host this meaningful academic endeavor.

Looking ahead, we welcome future opportunities for collaboration and hope to see you again in the next edition of CTReSS.

Thank you.

Conference Tentative

7th INTERNATIONAL CONFERENCE ON TROPICAL RESOURCES AND SUSTAINABLE SCIENCE (CTReSS 7.0)

Date : 12-13 August 2025
Time : 08.45 – 17.30 WIB
 09.45 – 18.30 MYT
Venue : Hotel Pangeran Pekanbaru, Riau, Indonesia
 & Online

DAY 1	12 AUGUST 2025 (TUESDAY) Mode: Hybrid (Hotel Pangeran Pekanbaru, Riau, Indonesia and Online)
08.45 WIB 09.45 MYT	National Anthem (Lagu Negaraku and Lagu Indonesia Raya) UMK and UMRI Corporate Video Presentation Prayer Recitation
09.00 WIB 10.00 MYT	Welcoming Remarks Dr. H. Saidul Amin (Rector, Universitas Muhammadiyah Riau (UMRI))
09.15 WIB 10.15 MYT	Officiating Speech Professor Ir. Ts. Dr. Arham bin Abdullah (Vice Chancellor, Universiti Malaysia Kelantan (UMK))
09.30 WIB 10.30 MYT	Room: Bertuah Hall Keynote Speech1 (Physical) Prof. Dr. Ir. Rifardi (Faculty of Fisheries and Marine, Universitas Riau Pekanbaru, Indonesia) <i>Title: Sustainable Fisheries from a Marine Environmental Sedimentology Perspectives</i> Moderator: Dr. Pahmi Keynote Speech 2 (Online) Assoc. Prof. Dr. Christophe Wiat (Institute for Tropical Biology and Conservation,Universiti Malaysia Sabah) <i>Title: Ethnopharmacology in the Asia-Pacific: A Journey Through Traditional Remedies and Modern Applications: The Case of Sabah (East Malaysia)</i> (Parallel Session) Moderator: Dr. Nivaarani Arumugam
10.25 WIB 11.25 MYT	Photo Session

10.30 WIB 11.30 MYT	Room: Bertuah Hall Invited Speaker 1 (Sustainability and Technology) Dr. Pankaj Kumar Head of the Department, Department of Earth & Environmental Science, Faculty of Applied Sciences, Parul University, India <i>Title: Biotechnological Strategies for Greenhouse Gas Mitigation Toward a Sustainable Low-Carbon Future</i> Moderator: Dr. Amal Najihah Muhamad Nor Room: Bertuah 2 Invited Speaker 2 (Geosciences) Prof. Dr. Eng. Ir. Adi Maulana Vice Rector for Partnership, Innovation, Business and Entrepreneurship, Hasanuddin University, Indonesia <i>Title: Geologic Hydrogen Potential from Ophiolitic Rock in Sulawesi, Indonesia: A New Perspective</i> Moderator: Dr. Mohd. Syakir Sulaiman
11.30 WIB 12.30 MYT	Room: Bertuah Hall Invited Speaker 3 (Environmental Economics) Prof. Dr. Shi Rui Vice Dean, College of Forestry, Southwest Forestry University, China <i>Title: Cultivation Innovation of Chinese Medicinal Herbs under Forest</i> Moderator: Mr. Mohd Uvaish Ansari
12.30 WIB	Lunch (Bertuah Hall)
13.30 WIB	Parallel Session: Bertuah Hall & Bertuah 2 Oral Presentations
16.30 WIB	End of Physical Conference Day 1
DAY 2	13 AUGUST 2025 (WEDNESDAY) Mode: Online only
08.00 WIB 09.00 MYT	Concurrent Oral and Poster Presentations (Online)
13.30 WIB 14.30 MYT	Lagu Terbilang UMK Lagu Sang Surya-Mars Muhammadiyah UMRI Faculty of Earth Science, UMK and Fakultas MIPA dan Kesehatan, UMRI Corporate Video Presentation
13.45 WIB 14.45 MYT	Conference Highlights Associate Professor Dr. Suganthi Appalasamy Chairman of CTReSS 7.0
13.50 WIB 14.50 MYT	Speech Associate Professor Dr. Zulhazman Bin Hamzah Dean, Faculty of Earth Science, UMK
13.55 WIB 14.55 MYT	Closing Speech Dr. Prasetya Dean, Fakultas MIPA dan Kesehatan, UMRI
14.00 WIB 15.00 MYT	Best Presenter Announcement
14.20 WIB 15.20 MYT	End of CTReSS 7.0

Parallel Session 1: Presentation Schedule

Date : 12 August, 2025
 Time : 13.30 – 16.45 WIB
 Venue : Bertuah Hall, Hotel Pangeran, Pekanbaru
 Topic : Sustainability and Technology
 Moderator : Rahmadini Syafri, B.Sc, M.Sc

No	Time	Presenter Name	Paper ID	Research Title
1.	13.30 WIB	Opening Session and Rules Presentation by the Judges		
2.	13.45 WIB	Jufrizal Syahri	ST-054	Synthesis of Mannich Eugenol Oxirane Morpholine Compound as Antifungal In Vitro and In Silico
3.	14.00 WIB	Nazlina Ibrahim	ST-057	Exploring Plant-based Antiviral Agents from Malaysian Medicinal Plant Biodiversity
4.	14.15 WIB	Tuan Nor Zahrina Binti Tuan Shahidil Akma	ST-014	Sustainable Eating Begins with Youth: Exploring Organic Food Consumption Intentions Among Young Adults in Malaysia
5.	14.30 WIB	Prof. Kokkanti Mallikarjuna	ST-043	Micro-algal CO ₂ Concentration Mechanisms and Their Role in Sustainable Green CO ₂ Sequestration Potential
6.	14.45 WIB	Arifullah Mohammed	ST-046	Phytochemical Characterization and Wound Healing Potential of <i>Alocasia longiloba</i> Miq. Extracts in Excision Wound Rat Model
7.	15.00 WIB	Yulia Fitri	ST-047	Identification of the Influence of Meteorological Factors on NO _x Emissions at Palm Oil Mill Generators Using Multiple Linear Regression Models
8.	15.15 WIB	Shabri Putra Wirman	ST-048	A Forward-Scattering Laser Speckle Imaging System for Rapid, Real-time, and Non-Destructive Detection of CPO Adulteration
9.	15.30 WIB	Delovita Ginting	ST-049	Optimization of Electrophotographic Toner Properties by Addition of Reduced Graphene Oxide and Palm Oil Shell Carbon Aerogel using Emulsion Aggregation Method
10.	15.45 WIB	Sri Fitria Retnawaty	ST-050	Analysis of Heavy Metal Content in Emissions from Shell, Fiber, and Empty Fruit Bunch Biomass Fuels
11.	16.00 WIB	Romi Fadli Syahputra	ST-051	Resonant Frequency Shift Analysis of a Rectangular Metamaterial Sensor for Salinity Measurement
12.	16.15 WIB	Neneng Fitrya	ST-052	Portable Laser Speckle Imaging System with Neural Networks for Adulterated Fertilizer Detection
13.	16.30 WIB	Rahmadini Syafri	ST-056	Electrochemical and Thermal Studies of Polymer Electrolyte Membrane Based on Cellulose-Chitosan-Alginate as Lithium Ion Battery Separator

Parallel Session 2: Presentation Schedule

Date : 12 August, 2025
 Time : 13.30 – 16.15 WIB
 Venue : Bertuah 2 Room, Hotel Pangeran Pekanbaru, Riau
 Topik : Biological Diversity, Environmental Sociology, and Geoscience
 Moderator : Pahmi, S.Pd., M.A

No	Time	Presenter Name	Paper ID	Research Title
1.	13.30 WIB	Opening Session and Rules Presentation by the Judges		
2.	13.45 WIB	Novia Gesriantuti	BC-027	Diversity of Stingless Bee in Hutan Adat Imbo Putui, Kabupaten Kampar
3.	14.00 WIB	Wirdati Irma	BC-028	Unveiling the Potential of Weeds in Peat Soils of Oil Palm Plantations
4.	14.15 WIB	Rahmiwati Hilma	BC-029	Evaluation of Peperomia pellucida L. Kunth Extract as an Antifungal Agent by In-Vitro and In-Silico Analysis
5.	14.30 WIB	Yeer Badrun	BC-030	Relationships among Seawater Quality, Sediment TOC, Phytoplankton Abundance, and Macrozoobenthos Distribution in Dumai River Estuary
6.	14.45 WIB	Nik Norhazrina Binti Nik Mohd Kamil	BC-031	Unveiling Moss Diversity of Peninsular Malaysia
7.	15.00 WIB	Muhamad Azahar Abas	ES-002	Critical Success Factors in Implementing Smart Solid Waste Management in Banda Hilir, Melaka
8.	15.15 WIB	Farah Nabila Binti Ahmad	ES-008	Collaborative Governance Constructs Towards Sustainable Farming in Kelantan, Malaysia
9.	15.30 WIB	Elvaene James	GS-004	Petrography and Mineralogy of Plutonic Rocks in Dabong, Kelantan, Malaysia
10.	15.45 WIB	Nurul Hafizah Mohd Yasin	ES-022	Sustainable Dining Revisited: Exploring Consumer Intentions in Green Restaurants in Malaysia
11.	16.00 WIB	Meidita Kemala Sari	GS-014	Utilization of Riau Peat-Derived Humic Acid Modified with Urea-Formaldehyde for Ni(II) Adsorption: A Geochemical Approach

Biographies of:

Keynote Address 1

Prof. Dr. Ir. Rifardi

*Faculty of Fisheries and Marine,
Universitas Riau Pekanbaru, Indonesia*



Prof. Dr. Ir. Rifardi, is a distinguished Professor of Marine Environmental Sedimentology at the Faculty of Fisheries and Marine Science, Universitas Riau, Indonesia. With an academic career spanning more than three decades, Prof. Rifardi has played a pivotal role in advancing the scientific understanding of sedimentology, marine resource management, and coastal ecosystem sustainability in Indonesia and beyond.

Born in Pekanbaru in 1964, Prof. Rifardi began his academic journey at Universitas Riau, earning his undergraduate degree in Aquatic Resource Management in 1989. He pursued advanced studies in Japan, completing his Master's in Marine Science at the University of the Ryukyus (1993) and a PhD in Science of Marine Resources at Kagoshima University (1999), with specialized research on sedimentology and the ecological analysis of benthic foraminifera.

Throughout his tenure at Universitas Riau since 1990, Prof. Rifardi has held numerous leadership roles, including Dean of the Faculty of Fisheries and Marine Science, Coordinator of the SDGs Center, and Head of multiple research centers focused on coastal and marine environments. His expertise is widely recognized in the fields of marine sedimentology, coastal management, and the ecological assessment of marine systems.

Prof. Rifardi has led numerous national research collaborations, contributed to environmental policy development, and has been instrumental in fostering inter-university cooperation on environmental studies in Indonesia. He has served on the academic senate of Universitas Riau and the faculty, as well as on national bodies such as the Indonesian Environmental Studies Center Collaboration Board (BKPSL).

Through his dedication to research, academic leadership, and sustainable development advocacy, Prof. Rifardi continues to inspire advancements in marine environmental science and the sustainable management of aquatic resources

Keynote Address 2

Assoc. Prof. Dr. Christophe Wiart

***Institute for Tropical Biology and Conservation,
Universiti Malaysia Sabah, Malaysia***



Assoc. Prof. Dr. Christophe Wiart is a renowned associate professor specializing in natural product chemistry and drug discovery at the Institute of Tropical Biology and Conservation, Universiti Malaysia Sabah. With over two decades of academic experience in Southeast Asia, Dr. Wiart's research career is distinguished by a profound commitment to exploring the ethnopharmacological and phytochemical properties of medicinal plants, particularly those endemic to the tropical rainforests of Asia.

Dr. Wiart obtained his Doctor of Philosophy in natural product chemistry from Universiti Putra Malaysia in 2001, following his Doctor of Pharmacy (PharmD) with a specialization in marine chemistry, biochemistry, and phytochemistry from the University of Rennes, France. He has held academic positions at the University of Malaya, University of Nottingham Malaysia, and now Universiti Malaysia Sabah, in addition to serving as a visiting scholar and research collaborator across Europe and Asia.

Throughout his distinguished career, Dr. Wiart has been at the forefront of drug discovery, focusing on antimicrobial, cytotoxic, and antiparasitic compounds derived from Southeast Asian flora. His research has resulted in over 100 publications in indexed journals, more than 5000 citations, and an h-index of 30. He is also the author of multiple influential books on medicinal plants published by CRC Press and Academic Press, and holds patents in herbal pharmaceuticals.

Internationally recognized for his expertise, Dr. Wiart has been a frequent guest on global media such as BBC Radio and Aljazeera, and was awarded the Dr. Matthew A. Eichler Memorial Fellowship for best educator and researcher by APCoRE in 2020. He is ranked among the top 2% of scientists worldwide by the Stanford List (2021–2024).

An active contributor to the advancement of pharmacognosy, Dr. Wiart serves as General Secretary of the Asian Society of Pharmacognosy and Editor-in-Chief of the Asian Journal of Pharmacognosy. His enduring dedication to research, education, and international collaboration continues to shape the field of natural products and ethnopharmacology in the Asia-Pacific region.

Invited Speaker I

Dr. Pankaj Kumar

Faculty of Applied Sciences, Parul University, India



Dr. Pankaj Kumar is a leading environmental scientist and Head of the Department of Earth and Environmental Science at the Faculty of Applied Sciences, Parul University, Vadodara, India. With a decade of multifaceted research and professional experience, Dr. Kumar is recognized for his expertise in environmental pollution monitoring, sustainable waste management, bioremediation, and water and soil quality assessment.

Dr. Kumar holds a PhD in Environment and Sustainable Development from the Central University of Gujarat, where his research focused on rhizosphere bioremediation of electronic waste and heavy metal contamination. His academic journey includes an MPhil in Environment and Sustainable Development, an MSc in Ecology & Environmental Sciences from Pondicherry Central University, and a BSc (Hons) in Biotechnology from Bundelkhand University.

His professional background encompasses significant appointments in both academia and government, including as Scientist 'C' at the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India, and as Project Associate at CSIR–National Environmental Engineering Research Institute (NEERI), Hyderabad. Dr. Kumar has been actively involved in national projects of environmental significance, such as the Polavaram multipurpose irrigation project and EIA/EMP compliance for major infrastructure and industrial developments.

A prolific scholar, Dr. Kumar has published widely in high-impact international journals on topics including microplastics, e-waste, heavy metals, bioremediation, and environmental risk assessment. He is the author of book chapters and a patent holder for innovations in environmental remediation. He serves as a peer reviewer for major journals such as *Environmental Science and Pollution Research*, *Environmental Monitoring and Assessment*, and *Environmental Toxicology and Pharmacology*.

Dr. Kumar's contributions extend to policy, consultancy, and academic leadership. He is a board member and advisor for environmental organizations, coordinator for institutional quality assurance, and a frequent keynote speaker at national and international conferences. His work is underpinned by a commitment to sustainable development, knowledge exchange, and technological innovation for environmental management.

Invited Speaker II

Prof. Dr. Eng. Ir. Adi Maulana
Universitas Hasanuddin, Indonesia



Prof. Dr. Eng. Ir. Adi Maulana, ST., M.Phil., IPM is a prominent Professor of Geology at Hasanuddin University, Indonesia, recognized for his extensive contributions in petrology, economic geology, mineral deposits, rare earth metals, and disaster management. Currently serving as Vice Rector for Partnership, Innovation, Business, and Entrepreneurship at Hasanuddin University, Prof. Maulana has held multiple leadership roles, including Head of the Disaster Research Centre and Head of the Field Geology Laboratory.

Prof. Maulana completed his Bachelor's degree in Geology at Universitas Hasanuddin, followed by a Master's in Geology of Mineral and Energy from the Australian National University, and a Doctorate in Petrology and Mineralogy from Kyushu University, Japan. His postdoctoral engagements include research and visiting professorships at leading institutions such as Akita University, Hokkaido University, Münster University, National Taiwan University, and the Massachusetts Institute of Technology.

With an H-index of 12 (Scopus), Prof. Maulana has authored more than 40 high-impact international journal articles and several academic books in the fields of petrology, mineral resources, volcanology, and rare earth elements. His research addresses the geodynamics and metallogeny of Southeast Asia, critical metal and REE deposits, as well as disaster mitigation strategies. He has been invited as a keynote speaker at numerous national and international conferences and has received multiple awards, including national recognition for scientific achievement and excellence in geoscience research.

Prof. Maulana is an active peer reviewer for leading journals such as *Ore Geology Reviews*, *Journal of Asian Earth Sciences*, and *Lithos*, and holds membership in prestigious professional organizations including the American Association of Petroleum Geologists, Geochemical Society, and the Indonesian Engineer Association. His commitment to advancing earth science education, research, and international collaboration has positioned him as a leading figure in Indonesia's geoscientific community.

Invited Speaker III

Prof. Dr. Shi Rui

College of Forestry, Southwest Forestry University, China



Prof. Dr. Shi Rui is a Professor and Vice Dean at the College of Forestry, Southwest Forestry University, China. She holds a PhD in Pesticide Science from Yunnan Agricultural University and has completed postdoctoral studies in Geographic Ecology at Yunnan University. With over fifteen years of academic and research experience, Prof. Shi is recognized for her leadership in the fields of under-forest cultivation, rhizosphere ecology, and the development of high-value medicinal and economic plants.

Prof. Shi's research portfolio includes serving as principal investigator for major national and provincial projects, such as the National Key R&D Program on high-quality production of *Paris polyphylla* and *Polygonatum sibiricum*, and the National Natural Science Foundation of China on rhizosphere soil microecosystems. Her work has yielded significant advances in the application of big data to forestry, ecological agriculture, and sustainable resource management.

A prolific scholar, Prof. Shi has published extensively in top-tier journals such as *Plants*, *Forests*, *Frontiers in Plant Science*, and *Scientia Horticulturae*, with research spanning metabolomics, soil microbiology, and forest product innovation. She has also contributed as editor-in-chief and deputy editor to several academic books on economic forest management and has been awarded multiple international and national patents for innovations in plant cultivation and extract preparation.

Prof. Shi has received numerous honors, including the Second Prize of the National Teaching Achievement Award, Special Prize of the Yunnan Provincial Teaching Achievement Award, and Yunnan Talent Support Plan for Revitalizing Yunnan. Her outstanding commitment to academic excellence is reflected in her leadership of winning teams at national innovation competitions and her contributions to setting industry standards for Australian nuts and under-forest crops.

With her distinguished expertise and ongoing leadership, Prof. Shi Rui is a driving force in sustainable forestry and the integration of medicinal plant science with ecological innovation.

List of Oral Presentations

THEME: BIOLOGICAL DIVERSITY AND CONSERVATION

Online Presenter

ID NO.	TITLE
BC-001	Assessing the Status of Rafflesia Populations and Their Threats in the Lojing Highlands, Kelantan
BC-002	Species diversity of butterflies (Lepidoptera: Rhopalocera) in an urban forest ecosystem, Hutan Bandar Jeli, Kelantan
BC-003	Mangrove Checklist in the Sulaman Lake, Tuaran, Sabah
BC-004	Advertisement Calls of Seven Species of Sarawak Frogs from Family Megophryidae
BC-007	Potential Effect of Growing Melastoma Malabathricum with the Addition of Bamboo Biochar (BB) and EDTA in Removing Soil Heavy Metals Contamination
BC-008	Determination of Macro Invertebrates Benthic Ecological Index for River Health Assessment
BC-011	Diversity Assessment of Tree Species in Mount Mayapay, Buenavista, Agusan Del Norte, Philippines
BC-012	Aboveground Biomass and Carbon Sequestration Potential of Tree Species in Kraefi-Sumile Botanical and Zoological Garden
BC-013	The Growth Performance of Rhizophora mucronata Lam. and Rhizophora apiculata Blume in Freshwater Ecosystem
BC-014	Species Diversity, Biomass Estimation, and Dust Retention Capacity of Urban Trees Along Roadside in Tandag City, Philippines
BC-015	Linking Soil Physicochemical Properties and Tree Diversity Across Elevational Zones in the Agricultural Ecosystems of Tagnote Falls, Philippines
BC-017	Leaf Traits Variability of a Halophyte Influenced by Heavy Metals
BC-018	Observations on Avifauna at Selected Forest Eco Parks in Perak
BC-019	Avian species of Sungai Sedim Forest Eco Park: Boost for ecotourism activities
BC-020	Assessment of Non-Volant Small Mammals at Lenggor Forest Reserve and Mersing Forest Reserve in Johor, Malaysia.

BC-021	Reptile Species Composition at Three Forest Reserves in Central Forest Spine Ecological Corridor B-SL1, Selangor, Malaysia
BC-022	Species richness and composition of mammal assemblage in Sedim River Eco Park: Supporting evidence for ecotourism potential
BC-023	Herpetofaunal Richness in Sungai Sedim Eco Park: Strengthening the Park's Ecotourism Value
BC-024	Limbium and Leaf Margin Variation in Selected Fissidens Species: Taxonomic Implications

Physical Presenter

ID NO.	TITLE
BC-027	Diversity of Stingless Bee in Hutan Adat Imbo Putui, Kabupaten Kampar
BC-028	Unveiling the Potential of Weeds in Peat Soils of Oil Palm Plantations
BC-029	Evaluation of Peperomia pellucida L. Kunth Extract as an Antifungal Agent by In-Vitro and In-Silico Analysis
BC-030	Relationships among Seawater Quality, Sediment Total Organic Carbon, Phytoplankton Abundance, and Macrozoobenthos Distribution in the Coastal Waters of the Dumai River Estuary, Indonesi
BC-031	Unveiling Moss Diversity of Peninsular Malaysia

THEME: SUSTAINABILITY AND TECHNOLOGY**Online Presenter**

ID NO.	TITLE
ST-003	Ultrasound-assisted Extraction of Antioxidants from Watermelon Rind using Green Solvent for Food and Cosmetic Applications.
ST-005	Cluster Analysis of Ground-Level Ozone and Nitrogen Dioxide Concentrations Diurnal Variability In Klang
ST-006	Bioconcentration of Metals in <i>Oreochromis niloticus</i> and <i>Pangasius</i> sp. from a Commercial Pond
ST-007	Evaluating the Efficacy of Plant-based Coagulants in Reducing Water Turbidity: A Comparative Study
ST-008	Spatiotemporal rainfall analysis in Kuala Krai, Kelantan: interpolation and trend assessment from 2009 to 2020.
ST-010	Ultrasound-Assisted Extraction of Antioxidant-Rich Compounds from Watermelon Rind (<i>Citrullus lanatus</i>) for Sustainable Natural Resource Valorization.
ST-011	Evaluation of heavy metal contamination and pollution indices in soil from selected dumpsites in Kelantan, Malaysia
ST-013	Sustainable Consumption in Practice: Exploring Green Product Purchase Intentions Among Malaysian Adults
ST-014	Sustainable Eating Begins with Youth: Exploring Organic Food Consumption Intentions Among Young Adults in Malaysia.
ST-019	A Study Food Waste for Making Fertilizer with Physical and Chemical Properties
ST-024	Thorium Retention Rate Using Different Functionalized Resins
ST-029	Assessing Water Reservoir Potential in Tanah Merah, Kelantan using Advanced GIS and Remote Sensing Techniques
ST-030	Biodegradable Film from Kombucha SCOBY Culture Using Different Types Of Tea Extracts With/Out Glycerol
ST-035	Toward Sustainable Tea (<i>Camellia sinensis</i>) Production: The Role of Seaweed Extract and Biochar on the Growth, Physiology and Soil Fertility
ST-038	Agronomic Performance and Resistance Traits of Abaca Hybrid (<i>Musa textilis</i> Nee) in the Field

ST-040	Digitizing the Herbal Industry and Its Role in Sustainable Forest-Based Bioeconomy in Malaysia
ST-042	Domestic Tourist Perceptions of Social Carrying Capacity: Implications for Sustainable Tourism Management in Pangkor Island, Perak
ST-044	Comparative Analysis of ResNet-18 and EfficientNet-B0 for Lightweight Deep Learning in Smart Waste Classification
ST-045	Hydroxyapatite Synthesized from Defunct Coral Reefs for Bioceramic Applications
ST-053	Bioactivity of Mikania micrantha Extract in Controlling Erwinia chrysanthemi: A Natural Antibacterial Approach
ST-055	Implementation Of Visible Light Communication (VLC) For A Water Monitoring System based on An Android Application and Cloud Database

Physical Presenter

ID NO.	TITLE
ST-043	Micro-algal CO ₂ concentration mechanisms and their role in sustainable green CO ₂ sequestration potential
ST-046	Phytochemical Characterization and Wound Healing Potential of Alocasia longiloba Miq. Extracts in Excision Wound Rat Model
ST-047	Identification of the Influence of Meteorological Factors on NO _x Emissions at Palm Oil Mill Generators Using Multiple Linear Regression Models
ST-048	A Forward-Scattering Laser Speckle Imaging System for Rapid, Real-time, and Non-Destructive Detection of CPO Adulteration
ST-049	Optimization of Electrophotographic Toner Properties by Addition of Reduced Graphene Oxide and Palm Oil Shell Carbon Aerogel using Emulsion Aggregation Method
ST-050	Analysis Of Heavy Metal Content in Emissions from Shell, Fiber, and Empty Fruit Bunch Biomass Fuels
ST-051	Resonant Frequency Shift Analysis of a Rectangular Metamaterial Sensor for Salinity Measurement
ST-052	Portable Laser Speckle Imaging System with Neural Networks for Adulterated Fertilizer Detection
ST-054	Synthesis Of Mannich Eugenol Oxirane Morpholine Compound As Antifungal In Vitro and In Silico
ST-056	Electrochemical and Thermal Studies of Polymer Electrolyte Membrane Based on Cellulose-Chitosan-Alginate as Lithium Ion Battery Separator
ST-057	Exploring plant-based antiviral agents from Malaysian medicinal plant biodiversity

THEME: GEOSCIENCE**Online Presenter**

ID NO.	TITLE
GS-001	Evaluation of Groundwater Sources Using Electrical Resistivity Imaging (ERI) Method in Felda Tersang 02, Raub, Pahang
GS-005	Geoheritage Potential of Limestone Caves at Felda Chiku 7, Gua Musang, Kelantan, Malaysia
GS-006	Geology and Petrographic Analysis of Schist, Quartzite, and Granite from Kampung Kelaik, Lojing, Kelantan
GS-008	Geochemical Assessment of Sediments in Kampung Belanga, Kuala Krai, Kelantan: Implication for Mineralization and REE Distribution
GS-010	Geophysical Investigation of Subsurface Structures Using Electrical Resistivity Imaging (ERI) and Induced Polarization (IP) Methods in Metagneous Terrains of UMK Jeli, Kelantan.
GS-011	Deciphering Seawater Intrusion in Multilayered Aquifers: Insights from Ionic Ratios and Isotopic Signatures in Northern parts of Kelantan Coastal Aquifer, Malaysia
GS-013	Assessing Landslide Susceptibility in Bukit Kwong Dam, Kelantan, Malaysia Using Geospatial Technique and Frequency Ratio Model

Physical Presenter

ID NO.	TITLE
GS-004	Petrography and Mineralogy of Plutonic Rocks in Dabong, Kelantan, Malaysia
GS-014	Utilization of Riau Peat-Derived Humic Acid Modified with Urea-Formaldehyde for Ni(II) Adsorption: A Geochemical Approach

THEME: ENVIRONMENTAL, SOCIOLOGY**Online Presenter**

ID NO.	TITLE
ES-001	Site Suitability Assessment of Recreational Forests in Jeli, Kelantan for Shinrin-yoku Practice
ES-011	Fashion Recycling: The Insight of Younger Generation in Kelantan
ES-012	Assessment of Pesticide Handling Practices and PPE Use Among Rice Farmers in Pasir Mas, Kelantan
ES-015	Site-Specific Planting Design: Linking Soil Texture Analysis to Ecological Landscape Design Strategies
ES-016	Assessing the Role of Knowledge in Shaping Household Solid Waste Management Practices: A Study in Kota Bharu District.
ES-018	Practices and Challenges in Pijanga (<i>Glossogobius guiris</i> H.) Fishing across Lake Mainit, Philippines
ES-019	Gender-Based Assessment of Indigenous People towards Conservation, Management, and Perception in Taguibo Watershed, Butuan City, Philippines
ES-020	Fostering Public Awareness and Wetland Conservation Through Biodiversity Education at Paya Indah Wetlands, Malaysia
ES-021	From scraps to sustainability: a case study on SMEs patchwork innovation in Kelantan's batik and dressmaking industry
ES-023	Urban environment comparisons between street connectivity with mobility preferences in Bandar Kota Bharu, Kelantan
ES-024	Assessing the relationship between walkability factors and walking behaviours among university students using structural equation model
ES-025	From Nature to Design: The Role of Nature Connectedness in Shaping Biophilic Design Preferences, Attitude and Behaviour

Physical Presenter

ID NO.	TITLE
ES-002	Critical success factors in implementing smart solid waste management in Banda Hilir, Melaka
ES-008	A study of the Collaborative Governance Constructs towards sustainable farming in Kelantan, Malaysia
ES-022	Sustainable Dining Revisited: Exploring Consumer Intentions in Green Restaurants in Malaysia

THEME: ENVIRONMENTAL ECONOMICS**Online Presenter**

ID NO.	TITLE
EE-002	Trends and Patterns in the Use of the Contingent Valuation Method for Conservation: A Bibliometric Analysis
EE-003	From Farm to Fork: Evaluating the Socio-Economic and Environmental Impact of Consumer Meat Preferences in Support of Local Agriculture
EE-004	Consumer Trust in Local Meat Supply Chains and Its Impact on Willingness to Pay: Advancing Sustainable Food Systems in Malaysia
EE-006	Dynamic Panel GMM Approach to Economic Growth, Renewable Energy and Emissions in High-Emission Countries
EE-008	Towards Developing the Circular Economy Framework in Managing Common Agricultural Waste: The Case of Caraga Region, Philippines
EE-009	The Economic Value of Forest Ecosystem Services: Insights from Recreation and Ecotourism
EE-010	Isolation, Identification, and Bioefficacy of Indigenous Entomopathogenic Fungi Against <i>Pentalonia nigronervosa</i> Coq. in Abaca

List of e-Poster Presentations

THEME: BIOLOGICAL DIVERSITY AND CONSERVATION

ID NO.	TITLE
BC-006	Evaluating Microclimate Impacts on Post-Fire Vegetation Recovery in BRIS Soils
BC-010	A Pilot Study on the Relationships Between Tree Characteristics and Perceived Value Dimensions in Urban Tree Retention

THEME: SUSTAINABILITY AND TECHNOLOGY

ID NO.	TITLE
ST-002	Exploring the Features of Plants Threatening Malaysia's Heritage Buildings
ST-022	Abundance of microplastic in coastal area surface water in Tok Bali, Kelantan.
ST-027	Utilization of Citrus hystrix Peels as Natural Coagulant for the Reduction of Turbidity
ST-036	Finite Element Analysis of U-Shaped Biodegradable Polyvinyl Alcohol Thin Film for Sustainable MEMS Applications
ST-039	Loop-Mediated Isothermal Amplification Assay for Rapid Detection of Banana Bunchy Top Virus (BBTV) In Abaca (Musa textilis Nee)

THEME: GEOSCIENCE

ID NO.	TITLE
GS-012	Heavy Metal Concentration in River Sediments of Sungai Lebir, Sungai Galas, and Sungai Kelantan.

THEME: ENVIRONMENTAL, SOCIAL AND GOVERNANCE

ID NO.	TITLE
ES-003	Landscape Design Guidelines for Eco-Tourism-Oriented Rural Homestays Based on ESG Performance
ES-006	Roadside Trees Species Selection Model for Environmental Health and Public safety in Malaysia

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