THAILAND HALAL ASSEMBLY 2024

BOOK OF ABSTRACTS

The International Halal Science and Technology Conference (IHSATEC) 2024 : The 17th Halal Science Industry and Business (HASIB)

International Conference
Venue: Al Meroz Hotel, Bangkok, Thailand
December 19-20, 2024

Toward Halal Trust Through Digital Technology 2AIs

Organized by

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Book of Abstract Conference Proceeding

The International Halal Science and Technology Conference 2024 (IHSATEC): 17th Halal Science Industry and Business (HASIB)

International Conference (Hybrid)
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The International Halal Science and Technology Conference 2024 (IHSATEC): 17th Halal Science Industry and Business (HASIB)

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FOREWORD

Thailand Halal Assembly 2024 covering International Halal Science and Technology Conference (IHSATEC) 2024, the 17th Halal Science Industry and Business (HASIB) Conference and the 10th IHSAAC (International Halal Standard and Certification Convention) are organized by the Halal Science Center Chulalongkorn University (HSC-CU) in collaboration with the Halal Standard Institute of Thailand and the Research Synergy Foundation (RSF) as well as other esteemed organizations. The 17th HASIB conference, scheduled for December 19-20, 2024, will be a groundbreaking hybrid event, featuring both online and onsite participation at the Al MerozHotel, Bangkok, Thailand. The overarching theme of the conference is "Toward Halal Trust Through Digital Technology 2AIs."

This booklet contains the curriculum vitae and abstracts of keynote speakers, offering insights into the content presented during the five plenary sessions at IHSATEC 2023: the 16th HASIB conference. Notably, as of December 14, 2024, the conference attracted active participation from 208 professionals and international attendees. Keynote speakers and 30 esteemed experts from 25 countries and an international organization, including Australia, Bahrain, Bangladesh, Brunei Darussalam, Cambodia, China, England, Egypt, France, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, Pakistan, the Philippines, Saudi Arabia, Singapore, South Africa, Taiwan, Türkiye, Thailand, the USA, and Vietnam, as well as The Standards and Metrology Institute for Islamic Countries (SMIIC), all contributed to the success of the event.

The academic session also featured 15 notable sessions, including: HASIB (5 sessions) Onsite oral presentations on science, technology, and innovation (2 sessions), Online oral presentations on science, technology, and innovation (1 sessions), Online oral presentation on business & marketing and social science (1 session), Poster academic presentations (2 sessions). Furthermore, there were 13 judging committee members, and a total of 59 academic presenters from nine nations, namely Cambodia, Brunei Darussalam, Egypt, Indonesia, Malaysia, Pakistan, the Philippines, Türkiye and Thailand. Participants had the opportunity to engage in discussions and share their knowledge, experiences, and new ideas related to Halal science, technology, innovation, industry, AI technology and digital marketing. I extend my deepest gratitude to our dedicated staff committees for their unwavering devotion, enthusiasm, and tremendous efforts in ensuring the conference's success and creating lasting memories. Special thanks are extended to all speakers, session chairmen, judging committee members, and presenters. Your invaluable contributions to this conference are acknowledged with sincere gratitude.

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Associate Prof. Dr. Winai Dahlan
Chairman of the Organizing Committee
Thailand Halal Assembly 2024

Editor IHSATEC2024; 17th HASIB Book of Abstracts

The Halal Science Center Chulalongkorn University (HSC-CU)

The Halal Science Center, Chulalongkorn University (HSC) was established following a cabinet resolution on August 13, 2003. It originated from the need to address the contamination of haram substances in food products within Bangkok's Muslim communities. Led by Associate Professor Dr. Winai Dahlan, the concept of applying scientific methods to verify halal integrity began in 1994, eventually receiving government support to become the world's first Halal Science Center. The HSC operates through five main units: the Halal Forensic Laboratory (HAFOLAB), the Business Incubator of Halal Products (BIHAP), the Halal Food and Nutrition Alert (HAFANA), the Halal Big Data House (HABIDAH), and the Halal Innovation Community Learning Center (HICOLEC). Additionally, it collaborates with businesses and organizations to support SMEs in developing halal products. The Halal Science Center aims to position Thailand as a global leader in halal quality by pioneering advancements in halal science and technology, disseminating knowledge to society, and integrating innovation to ensure accuracy, safety, and trustworthiness of halal-certified products, while promoting sustainable development for both Thailand and the international community.

The HSC plays a pivotal role in providing advanced testing and analysis for haram contamination in food and products. Its laboratories, certified to international standards (ISO/IEC 17025:2017; ISO9001:2015), specialize in key areas such as gelatin analysis, porcine DNA detection, and ethanol quantification. Furthermore, HSC has developed the HAL-Q system, a halal assurance and quality management system that ensures rigorous monitoring and control throughout the halal production process. By integrating HAL-Q with blockchain and AI, manufacturers can now provide verifiable real-time data on production integrity, offering heightened transparency and compliance with halal standards.

Complementing this system, the H Numbers database-a scientific catalog of halal ingredients and substances-has been enhanced with AI and blockchain technologies. This integration ensures the accuracy, traceability, and validation of ingredient data, enabling both producers and certifiers to verify halal compliance efficiently.

These technological advancements, including HAL-Q and H Numbers, are key drivers in strengthening consumer confidence in halal products, while facilitating Thailand's competitiveness and leadership in the global halal market. Through scientific research, innovation, and technology-driven solutions, HSC ensures accuracy, integrity, and trust in halal products, fostering confidence among Muslim consumers worldwide while driving Thailand's position as a leader in the global halal market.

https://www.chula.ac.th/en/cu-services/quality-assurance-services/the-halal-science-center/

Research Synergy Foundation is a digital social enterprise platform that focuses on developing the Global Research Ecosystem towards outstanding global scholars. We build collaborative networks among researchers, lecturers, scholars, and practitioners globally for the realization of knowledge acceleration and to contribute more to society and humanity. As a social enterprise, our aim is to provide a good research ecosystem and platform for researchers to share, discuss, and disseminate their ideas. In addition, it helps you to improve your research and contribute to the knowledge. Therefore, creating social value and impact is our priority.

From 2017 to 2023, more than 30.000 scholars have participated in our programs from Asia, Australia, Africa, America, and Europe continents. With the average of the increasing number of members by more than 5.000 each year, we continuously strengthen the global research ecosystem by having five support systems that are ready to help members from across the world.

There are various agendas (work and program) that we have already done since 2017 up to present. The agendas are coming from all the support systems in the Global Research Ecosystem, named: Scholarvein, ReviewerTrack, Research Synergy Institute, Research Synergy Press, and Global Research Community. Research and publication cannot be seen as a separate part. Otherwise, we should take both as a comprehensive program. Moreover, the quality of the paper is the biggest concern for publication. To achieve the Organization/University/ Institution goal, we provide some agendas that can support you in research and publication enhancement. Some of the prominent agendas are:

a. International Conferences: It aims to create a "tipping point" of opportunities for participants to disseminate their research globally and have reputable scientific publication output.
b. Scientific and Academic Writing Coaching Clinics: It aims to provide a targeted and intensive learning strategy for publishing papers in high-impact Scopus/ WOS international journals.
c. Workshops: It aims to provide a vibrant learning forum to enhance the author's capability of scientific writing skills and the manuscript's quality.
d. Learning and Knowledge Sharing Programs: It aims to provide the best practice and guide from the experts, editors, and publishers' perspectives in research and publication enhancement.
e. Social Programs: It aims to empower and encourage society to share the value of creating an impactful program with us.

Research Synergy Foundation welcome all individuals, organizations/institutions (universities, governments, and private sectors) to be part of our Global Research Ecosystem.

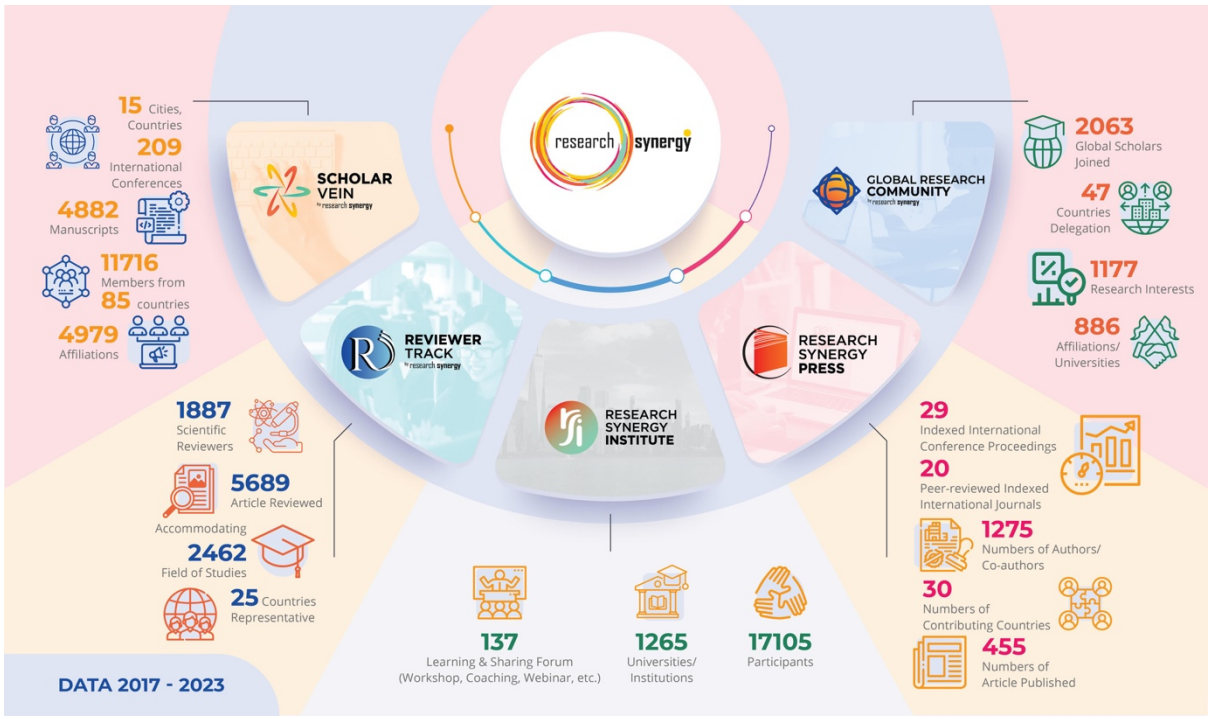

Figure: Global Research Ecosystem owned by Research Synergy Foundation (data from 2017 – 2023)

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Founder of iHalal Management and Science (iHALALMAS), Universiti Teknologi MARA Shahalam, Malaysia

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Vice chairman of National Standard Committee & Member of Pakistan Standard Quality Control Authority (PSQCA), Pakistan

H.E. İhsan ÖVÜT
SMIIC Secretary General

Prof. Dr. Awis Qurni Sazili
Director, Halal Products Research Institute, Universiti Putra Malaysia (UPM), Malaysia

Dr. Abdul Sattar Shah
Director of KP Food Safety & Halal Food Authority Government of Khyber Pakhtunkhwa, Pakistan

CONFERENCE CHAIR MESSAGE

The International Halal Science and Technology Conference 2024 (IHSATEC): 17th Halal Science Industry and Business (HASIB) is a global event organized by The Halal Science Center Chulalongkorn University, Thailand, and the Research Synergy Foundation. Held in a hybrid format on December 19-20, 2024, the conference takes place onsite at Al Meroz Hotel, Bangkok, Thailand, and virtually via the Zoom platform. The event is supported by Scholarvein, Reviewer Track, Research Synergy Institute, Research Synergy Press, Global Research Community, and F1000 Research.

We warmly welcome all participants of IHSATEC 2024: 17th HASIB, both onsite and online. This conference aims to facilitate the exchange of ideas and research across various dimensions of Halal Science and Technology in industry and business. Participants can present their work either physically or virtually during the Academic Session of the Thailand Halal Assembly 2024.

We invite researchers, lecturers, students, practitioners, and academics to join this event and contribute insights and findings in Halal Science and Technology Management. This conference offers a global platform for sharing research, fostering collaboration, and building an expanded network. Special opportunities await all participants attending this event.

We warmly welcome you to this conference and hope it inspires fresh knowledge, collaboration, and connections.

Best regards,

Assoc. Prof. Dr. Winai Dahlan
Conference Chair of IHSATEC 2024: 17th HASIB

CONFERENCE CHAIR

Assoc. Prof. Dr. Winai Dahlan

Founding Director, The Halal Science Center Chulalongkorn University (HSCCU)

Associate Professor Dr. Winai Dahlan is the Founding Director of The Halal Science Center at Chulalongkorn University (HSC). Concurrently, he is also the Vice President for the The Central Islamic Council of Thailand (CICOT) and the Chairman of the Halal Standard Insititue of Thailand (HSIT. He obtained his Ph.D. in Applied Medical Biology with a Magna Cum Laude from The Faculty of Medicine and Pharmacy St-Pierre Hospital, Université Libre de Bruxelles, Brussels, Belgium in 1989. Prior to that, he obtained the degree of M.S. Nutrition from the Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand in 1982. Meanwhile, his B.Sc. Biochemistry was obtained from his study at Faculty of Science, Chulalongkorn University, Bangkok, Thailand in 1976.

His past experiences including:

- Member, The National Reform Steering Assembly (NRSA)
- Member, the National Reform Council (NRC)
- Dean, Faculty of Allied Health Sciences, Chulalongkorn University
- Member, The National Directive Board of Food, Ministry of Public Health
- Member, The Advisory Board of Food, FDA, Ministry of Public Health
- Chairman, Subcommittee on Carbohydrates and Proteins, The National Committee of Thailand Recommended Dietary Allowances, Ministry of Public Health
- Nutrition Advisor in International Events: The 13th Asian Games, The 7th Fespic Games, The 20th World Scout Jamboree, The 24th Summer Universiade Games
- Member, The Advisory Board of Deputy Prime Minister and Ministers

SCIENTIFIC/ACADEMIC TRAININGS & VISITS:

- > 300 visits and trainings in 50 countries.

PUBLICATIONS:

- ~ 350 books (in Thai)
- > 3,000 pieces of documentary articles in science/technology, food/nutrition in several Thai magazines since 1989
- > 50 reviewed scientific articles published internationally/locally
- > 40 original research articles published internationally/locally,

AWARDS & HONOURS:

- World Halal Day Lifetime Achievement Award 2017, London, United Kingdom by the United World Halal Development
- Listed as “The 500 Most Influential Muslims” of the years by the Royal Islamic Strategic Studies Centre, Jordan for 9 consecutive years of 2010-2019

- The National Award of Best Innovative Civil Services, Office of Public Sector Development Commission 2013
- The Royal Thai Decoration and Awards:
- The Bravery Medal, The Dushdi Mala. (2425 B.E.) esteemed achievement in science
- Knight Grand Cordon of the Most Noble Order of the Crown (Major General rank)
- The Chakrabarti Mala Medal (2436 B.E.)
- Best Innovation award, Halal Science & Innovation Excellence, World Halal Research Summit 2011, 2012, Kuala Lumpur, Malaysia
- Listed as "The 500 Most Influential Muslims" of the years by the Royal Islamic Strategic Studies Centre, Jordan for 8 consecutive years of 2010-2017
- Philippines' IDCP Recognition Award of Halal Achievement in Halal Science 2009
- Malaysia's Halal Journal Award of Best Innovation in Halal Industry 2006
- Alumnus of the Year 2009, Graduate Studies, Mahidol University, Bangkok, Thailand
- Alumnus of the Year 2005, Faculty of Science, Chulalongkorn University, Bangkok, Thailand
- Lecturer of the Year 2001, Chulalongkorn University, Bangkok, Thailand

CO- CONFERENCE CHAIR

Dr. Hendrati Dwi Mulyaningsi, S.E., M.M.

Founder & Chairperson of Research Synergy Foundation

Dr. Hendrati Dwi Mulyaningsih has shown great commitment on creating Global Network and Research Ecosystem which has been developing since 2017 up to the present and having increasing numbers of the member up to more than 30.000 from all around the globe. Thus, her work in this area has made her as the Nominee of Impactful Leadership Awards from Tallberg Foundation Sweden in 2019 and 2024. As lecturer, she has been working in the University since 2008 – at present in Indonesia as assistant professor and she hold her Doctoral Science of Management graduated from School of Business and Management Institute of Technology Bandung (SBM-ITB). Her research expertise are in Social Entrepreneurship, Social Innovation and Knowledge Management. In addition, she had published books chapters, research papers and contemporary scientific articles in Springer, Emerald, Taylor and Francis and in many reputable international publishers and journals.

As researcher, her work studies and research on this research field made her be invited as reviewer in many reputable Scopus and WOS indexed journals and as keynote speaker in many International Conferences in Philippines, Thailand, Malaysia, Indonesia, Australia, Japan, and US. The terrific association between her professional experiences as researcher, lecturer, the certified Trainer & Coach combined with her wider horizon on networking in the research area made her establish the strong commitment on having global learning platform to accelerate knowledge through many workshops and research coaching in Research Synergy Institute as one of RSF's support system.

WELCOMING REMARKS

Prof. Dr. Sombat Treeprasersuk

Vice President of Chulalongkorn University

Prof. Dr. Sombat Treeprasertsuk is affiliated to Faculty of Medicine, Division of Gastroenterology, Chulalongkorn University, Patumwan, Bangkok, Thailand. battan5410@gmail.com., Chulalongkorn University, where Dr. Sombat Treeprasertsuk is currently working as Professor. Dr. Sombat Treeprasertsuk has authored and co-authored several national and international publications and also working as a reviewer for reputed professional journals. Dr. Sombat Treeprasertsuk is having an active association with different societies and academies around the world. Dr. Sombat Treeprasertsuk made his mark in the scientific community with the contributions and widely recognition from honourable subject experts around the world. Dr. Sombat Treeprasertsuk has received several awards for the contributions to the scientific community. Dr. Sombat Treeprasertsuk major research interest involves Gastroenterology.

WELCOMING REMARKS

Police Major General Surin Palarae

Secretary General of the Central Islamic Council of Thailand (CICOT)

H.E. İhsan ÖVÜT

Secretary General, The Standards and Metrology Institute for the Islamic Countries (SMIIC)

H.E. İhsan ÖVÜT is an expertise in OIC/SMIIC standards and standardization. He earned a B.Sc. in International Relations from the Faculty of Political Sciences at Ankara University, demonstrating a solid background in global policy and standardization systems.

OPENING REMARKS

Mr.Akanat Promphan

H.E. Minister of Industry

Speech:

It is a profound honour for me to preside over the opening ceremony of the Thailand Halal Assembly 2024 today. I extend my heartfelt congratulations on the tremendous success of this prestigious event, now in its 11th year or 17 years in total. This Assembly has clearly become a cornerstone in advancing and promoting the Halal industry in Thailand strongly backing up with Halal science and technology.

I am immensely proud of the dedication and continuous efforts of the Halal Science Center Chulalongkorn University, over the past 21 years. The Center has played a pivotal role in establishing a solid foundation for Halal industry of Thailand. Its achievements not only signify growth and progress but also underscore Thailand's potential to emerge as a global leader in the global Halal sector. The Center's contributions to nurturing skilled professionals equipped with modern knowledge and technologies are crucial in meeting the demands of the rapidly expanding global Halal economy.

Due to the report of Chairman of Organizing Committee, the Thailand Halal Assembly 2024 is organized under the theme “Toward Halal Trust through Digital Technology: 2AIs” emphasizing the concept of Islam by an integration of human expertise and effort namely Actual Implementation or AI-1 supported by artificial intelligence of machine or AI-2 to build trust in Thailand’s Halal products and industries. This initiative supports the Ministry of Industry’s policy of “Reforming Industries for the New Economy”.

It’s also highly appreciated to realize all contributions of experts from Thailand and abroad in The 17th International Conference on Halal Science, Industry, and Business or HASIB, together with an achievement of the international academic journal of Halal Science, Industry, and Business for its continuously publish after this event.

On this occasion, I wish to extend my best wishes for the success of Thailand Halal Assembly 2024, fulfilling all of its objectives. I firmly believe that this Assembly will continue to grow and develop, positioning Thailand as a leader in the global Halal sector. Together with all the distinguished attendees, I offer my unwavering support to the organizing committee in their efforts to propel Thailand’s Halal industry to the forefront of the world.

Now, it is an auspicious moment. I am delighted to declare the Thailand Halal Assembly 2024 officially open.

SPEAKERS

Prof. Dr. Abdelaziz Bouras

Professor at College of Engineering,
Qatar University, Qatar

Professor A. Bouras has been conferred the HONORIS-CAUSA PhD in ICT and Knowledge Management by Her Royal Highness Princess Maha Chakri Sirindorn of Thailand in 2011. He is currently the Director of the Research Support Office of Qatar University. He is also Professor in Computer Science and the current Chair of the IFIP (International Federation of Information Processing) working group 5.1 on ICT for lifecycle management. Dr. Bouras was the holder of the ICT-Qatar Ministry Chair position and has been working at the Digital Incubation Center of the Ministry until Sept. 2016. Prior to that he was the Deputy Director of the DISP Research Laboratory at University of Lyon - France, and the Manager of the Innovation and Technology Transfer Center of the university. He coordinated dozens of international projects in Europe and in the Middle East and helped incubating Start-ups in both France and Qatar. His current research interests deal with Software Lifecycle Management and Information Systems, including Information Security and Blockchain for Supply Chains.

Assoc. Prof. Worasit Choochaiwattana

Chulalongkon Business School,
Chulalongkorn University, Thailand

Associate Professor Dr. Worasit Choochaiwattana is an accomplished academic in the field of Information Science, currently affiliated with Chulalongkorn University in Thailand. He earned his Ph.D. in Information Science from the University of Pittsburgh in 2008, following a Master of Science in Computer Science from Chulalongkorn University and another Master's in Information System Management from Mahidol University. His undergraduate degree is a Bachelor of Business Administration in Marketing from Chulalongkorn University.

Dr. Choochaiwattana has a strong research focus on machine learning and its applications in tourism and e-commerce. His work includes several peer-reviewed publications, such as studies on adaptive tourist recommendations using Bayesian algorithms and the usability design principles for e-commerce web applications. He has also contributed to academic conferences, presenting papers on educational games and personalized academic search engines.

In addition to his research, Dr. Choochaiwattana plays an active role in academic leadership and curriculum development at Chulalongkorn University, where he has been involved in shaping programs that bridge technology and user experience, particularly in the context of digital commerce and tourism. His contributions to the field continue to enhance the understanding and application of information science in practical settings.

SPEAKERS

Prof. Dr. Ahmed Seffah

College of Technological Innovation,
Zayed University UAE

Dr. Ahmed Seffah is a Full Tenured Professor at Zayed University, UAE, a position he has held since 2018. With a distinguished academic career spanning over two decades, he has held faculty positions in both Canada and Europe, earning his Full Professorship in 2008. Dr. Seffah is a licensed Professional Engineer in France and Canada, and a recognized expert in the fields of Human-Computer Interaction (HCI), Software Engineering, and Digital Humanities.

He holds a Ph.D. in Software Engineering from École Centrale de Lyon, France, where he also completed his habilitation (HDR), a second doctorate required for full professorship in many European countries. Dr. Seffah's research focuses on human-centric tools and methods for AI-based software systems design, usability, human-data interaction, and the integration of human factors into software engineering. His contributions are widely published, with over 200 papers in top journals such as Communication of the ACM, IEEE Transactions on Software Engineering, and IEEE Privacy and Security. He is the author of six books published by renowned publishers including Springer, Wiley, and Taylor & Francis.

A recognized leader in his field, Dr. Seffah has organized over 10 workshops at top conferences such as the IEEE Software Engineering Conference and the ACM Conference on Human-Computer Interaction. He is the founder and director of the Zayed University Interactive Media Lab and the Digital Humanities Research Group, and has contributed to the design of academic programs at multiple international institutions.

In addition to his academic and research roles, Dr. Seffah serves as the UAE representative for the IFIP Technical Committees on IT Society, HCI, and Software Engineering, and has played an active role in various ISO Software Engineering technical committees. His leadership extends to academia-industry collaborations, where he coordinates capstone projects and ethics in research committees.

Dr. Seffah's ongoing research explores the intersection of HCI, software engineering, and sustainability, focusing on creating more human-centered, usable, and environmentally responsible software systems.

SPEAKERS

Dr. Amalia Mohd Hashim

Head of Laboratory, Halal Products Research Institute, Universiti Putra Malaysia, Malaysia

Mr. Syed Atiq ul Hasan

Founding Director Halal Expo Australia, Journalist, Writer & Speaker, Australia

Mr. Syed Atiq ul Hasan, based in Sydney, Australia, is the Founding Director of Halal Expo Australia and an accomplished journalist, writer, and speaker. With expertise spanning the Halal industry, journalism, social services, and education, he brings a multidisciplinary approach to his work. He holds degrees in Physics, Computer Technology, Economics, Law, and Journalism, along with advanced credentials in Management, Marketing, and Life Coaching, reflecting his diverse academic and professional background.

SPEAKERS

Prof. Dr. Irwandi Jaswir

Dean for Academic, Research, and Publication at INHART, the International Islamic University Malaysia (IIUM), Malaysia

Prof. Dr. Irwandi Jaswir is a distinguished academic and researcher in the field of Food Chemistry and Biochemistry, currently serving as a Professor at the International Islamic University Malaysia (IIUM). With a career that spans over two decades, he has held various leadership roles, including Director and Deputy Dean of the International Institute for Halal Research and Training (INHART) at IIUM. Prof. Dr. Irwandi is also the Secretary of the IIUM Council of Professors and serves on numerous international boards, reflecting his prominent role in the academic and halal research communities.

He earned his Bachelor's degree in Food Technology and Human Nutrition from Bogor Agricultural University, Indonesia, followed by an M.Sc. in Food Science and Biotechnology from Universiti Pertanian Malaysia (UPM), and a Ph.D. in Food Chemistry and Biochemistry from UPM. Additionally, he has completed a Postdoctoral Fellowship in Lipid Biochemistry at the National Food Research Institute in Japan and participated in exchange programs at the University of British Columbia, Canada. His academic qualifications are complemented by a diploma in Islamic Revealed Knowledge from IIUM.

Prof. Dr. Irwandi has a wealth of research experience, focusing on halal science, food safety, and biochemistry. His work has led to significant contributions to the development of halal food standards and the detection of non-halal adulterants. He is the leader of several ongoing projects, including the development of portable halal detection devices and the production of halal fish collagen nanoparticles. Prof. Dr. Irwandi has been instrumental in securing and leading numerous research grants, contributing to the advancement of halal food technologies and food safety research.

As a consultant, Prof. Dr. Irwandi has worked with institutions such as the Saudi Food and Drugs Authority (SFDA) and various halal certification bodies, including his role as Chairman of the Korea-INHART Halal Certification Authority. His expertise extends to international collaborations, where he has contributed to research and industry partnerships across Malaysia, Saudi Arabia, Japan, and beyond. Prof. Dr. Irwandi's leadership and contributions continue to shape the future of halal food science and biochemistry globally.

SPEAKERS

Mr. Aleem Siddiqui M. Guiapal

Program Manager Halal Industry Development Department of Trade & Industry Phillipines

Aleem Siddiqui M. Guiapal is a seasoned professional in economic development and investment management, currently serving as the Program Manager for Halal Industry Development at the Department of Trade and Industry in the Philippines. With a robust educational background, including a Master in Development Management from the Asian Institute of Management and a Bachelor of Laws, he has dedicated over a decade to enhancing financial inclusion and investment potential in the country.

Guiapal has held significant roles within the Philippine Economic Zone Authority (PEZA), including Group Manager and Bureau Director, where he was instrumental in passing legislation for Islamic banking and promoting economic opportunities for Muslim communities. His leadership extends to various inter-agency collaborations, notably as the lead convenor of Global Biz with PEZA, which fosters international investment partnerships.

Recognized for his contributions to society, Guiapal has received multiple awards, including the Most Outstanding Cotabateno and recognition as one of the 500 Most Influential Muslims. His commitment to community service is evident through his involvement in scholarship programs and initiatives aimed at empowering women and youth in conflict-affected areas.

Summary of Speech

Topic: *Integration of Relevant Policies on Halal of ASEAN Member Countries: Market Opportunities for Emerging Industries (Cosmetics, Functional Food)*

As Fischer (2011) mentioned, the market for Halal products and services has been emerging as a potent market force. With close to 2 billion Muslims making up the foundation, and with Halal products increasingly used by the general consuming public all over the world, the Halal market represents the appearance of a new economic paradigm that is on the tipping point of becoming a global movement.

The ASEAN Economic Community (AEC) 2015 calls for a more comprehensive dynamics and coordinating bodies in the region who will facilitate Halal intra- and extra-ASEAN trade. This is where we see the need of the regional cooperation group to stress the need of other governments and member states to redefine their policies in the promotion of the halal industry. that in order to address its economic blue print for 2025, evident hurdles and challenges need to be addressed in the inter and intra trade of ASEAN Halal products and services. Initially, focus may be stressed on food but the working group need to address other areas of production such as cosmetics, pharmaceuticals, services, logistics, tourism and Islamic financing.

Among the challenges identified in the integration of the policies were (1) differences in regulatory framework, technology, and resources to certify their products halal (2) divergences between jurists of the different schools of thought exist on halal understanding and practice

other than lack of government regulatory framework, machineries, logistics, and resources, (3) reaching a consensus on certification requirements that avoids confusing, contradictory and costly requirements, (4) with the rightful accommodation of unifying halal standards is addressing the need in protecting the integrity of Halal certification in order to avoid a loss of confidence by consumers, and (5) ensuring that claims regarding health and safety are based on science. It is not only the presence of an enabling law that will support the development of the halal industry. And halal certification although a religious duty as it may sound requires scientific support.

Recommendations include the creation of a Halal technical working group or Task Force within ASEAN to address the challenges and explore the following opportunities (1) Harmonization and Mutual Recognition of Halal Certification, (2) Address the relative lack of market information on Halal and strengthen investment opportunities among ASEAN member countries through the Halal sector including exports.

Potential emerging market to this end is the halal cosmetics. The global halal cosmetics market size was valued at USD 42.39 billion in 2023. The market is projected to be worth USD 47.76 billion in 2024 and reach USD 115.03 billion by 2032, exhibiting a CAGR of 11.61% during the forecast period. Asia Pacific dominated the halal cosmetics market with a market share of 64.87% in 2023.

Cited in Fortune Business Insights, the increasing consumer preference for chemical-free, natural ingredient-based cosmetics & personal care products favors the global halal cosmetics market growth. The demand for halal cosmetics is more prominent across countries with a sizable Muslim population. Key players continue to focus on R&D and innovation activities, greatly enhancing sales and encouraging young Muslim women to associate their interests with halal-certified products.

Given the increased demand for safe and clean-labeled products, the halal-certified cosmetics market size will likely create considerable growth opportunities for prospective players in the coming years. While halal-certified products have historically been in high demand across Muslim countries, modern consumers increasingly prefer these products owing to various factors such as ingredients used and safety, even in Non-Muslim countries.
Policy integration should see this strength and growth within the ASEAN market and establish potential collaboration as part of the economic integration.

SPEAKERS

Dr. Simab Kanwal

Institute of Nutrition, Food Chemistry Unit,
Mahidol University, Thailand

Dr. Simab Kanwal is a distinguished academic and researcher specializing in biochemistry, molecular biology, biotechnology, and enzyme technology. She is a lecturer at the Institute of Nutrition, Mahidol University, Thailand, and an adjunct faculty member at Mahidol University International College (MUIC).

Dr. Kanwal holds a Ph.D. in Biochemistry and Molecular Biology from Chulalongkorn University, Thailand, and has completed multiple postdoctoral fellowships in pharmacognosy, structural biology, and molecular biosciences at leading Thai institutions. Her academic journey began with an M.Phil. and M.Sc. in Biochemistry from Quaid-i-Azam University, Pakistan, and a B.Sc. in Biology from the University of Azad Jammu & Kashmir.

Her extensive expertise and dedication to research contribute significantly to the fields of nutrition, biotechnology, and molecular sciences, fostering advancements in academia and beyond.

Summary of Speech

Topic: *Cosmeceutical Applications of Algae Biometabolites- Halal, Vegan and Sustainable Prospects*

The sustainable use of algae and plant-based cosmeceuticals involves incorporating ingredients derived from these natural sources into skincare products in ways that minimize environmental impact while maximizing their health benefits. Cosmeceuticals are cosmetic products that offer therapeutic benefits, and plant-based and algae-derived ingredients are increasingly being recognized for their natural bioactive compounds that can enhance skin health, promote anti-aging, moisturize, and protect from UV damage, hence providing halal as well as vegan platform for product development. Trending health topics, celebrity brands and social media are the major platforms that drive the trends like “Green beauty routine” and “cruelty free world”, and influence the consumer’s choices toward the selection of products. In this regard, green life forms such as marine algae and cyanobacteria are also gaining tremendous attention in cosmeceuticals and nutraceuticals.

Among algae, blue-green algae are one of the earliest prokaryotic and photosynthetic microorganisms that produce plethora of secondary metabolites such as pigments, fluorescent dyes and bioactive compounds of pharmaceutical interests that might be used as drug, in cosmeceutical or as part of health promoting food. They are mostly target of biotechnological studies, because of their ability to produce bioactive secondary metabolites and requirement of very simple nutrients as raw material for growth. Furthermore, the strains with the ability to produce important bioactive compounds could also be targeted for genetic and metabolic engineering. The model blue-green alga, Synechocystis sp. PCC 6803 (hereafter Synechocystis) is the well-known and one of the most extensively studied strain. The strain has been widely studied for the production of many bioactive compounds. Recently, we did the genetic modification of Synechocystis to enhance the production of organic acids and non-

protein amino acids including γ-aminobutyric acid (GABA) and δ-Aminolevulinic acid (ALA), that carry immense importance in nutraceuticals and cosmeceuticals. One of those metabolites that we are presently focusing more is GABA. Because of the beneficial functions of GABA and increasing commercial demand, various attempts have been made for chemical and biological synthesis of GABA.

However biological synthesis of GABA is considered as a more promising method due to the simple catalytic reaction, cost effectiveness and environmental compatibility. An overexpressing vector was used in Synechocystis to create stable lines expressing chromosomally integrated gad, the gene encoding glutamate decarboxylase (that catalyzes glutamate to GABA) in Synechocystis. The engineered strain, GADox, had a 5-fold increase of GABA content as compared to wild type strain. Whereas, it was further found that interrupting the GABA production in the same strain, resulted in redirecting the carbon flux to ALA accumulation. It is anticipated that by employing combinatorial genetic engineering techniques, GABA and ALA yield could be improved further in eco-friendly algal species.

SPEAKERS

Dr. Kasinee Katelekha

Assistant Director, The Halal Science Center, Chulalongkorn University (HSC-CU), Thailand

Dr. Kasinee Katelakha is an Assistant Director and Researcher at The Halal Science Center, Chulalongkorn University, Bangkok, Thailand. She has dedicated her career to advancing knowledge in biochemistry, biomedical sciences, and Halal innovation. Her academic journey began at Chulalongkorn University, where she earned a Bachelor of Science in Biochemistry (2010), a Master's in Biochemistry and Molecular Biology (2013), and a Ph.D. in Biomedical Sciences (2021).

Dr. Kasinee's research focuses on functional ingredients for cosmetics and food, plant-based products, functional foods and cosmetics, and enzyme technology. Her innovative work has earned her numerous accolades, including the prestigious Honorable Award from APEC for Sustainable Food Development in 2022 and recognition for the innovative "H Numbers" with the Public Sector Excellence Award from OPDC in 2020.

As a prolific researcher, Dr. Kasinee has made significant contributions to scientific literature through her acclaimed publications. Her expertise extends beyond academia into technical leadership, where she actively serves on international committees, including OIC/SMIIC TC1 and TC2, which shape Halal standards, as well as the ASEAN Working Group for Halal Food (AWGHF).

Dr. Kasinee is also a sought-after speaker, sharing insights at global forums such as the Food Asia Ingredient Conference and the World Halal Summit. Her dedication to fostering innovation, advancing research, and developing industry standards positions her as a leading figure in Halal science and sustainable development.

Summary of Speech

Topic: ***Natural Bioactive Compounds for Sustainable Halal Cosmetics***

Natural bioactive compounds derived from renewable resources are gaining prominence in the halal cosmetic industry due to their efficacy, sustainability, and compliance with ethical principles. This presentation highlights the potential of green coffee bean and banana peel extracts as sustainable sources of bioactive compounds, specifically antioxidants, for use in halal cosmetics.

Green coffee bean extract (GCBE), derived from ungraded coffee beans, contains high levels of phenolic acids and demonstrates robust antioxidant activity, with an IC50 value of 0.7551 mg/mL. These properties make GCBE a promising candidate for protecting skin from oxidative stress and promoting dermal health. Similarly, banana peel extract, rich in flavonoids, vitamins, and essential minerals, has shown significant antioxidant capacity, offering potential benefits in skin hydration, repair, and anti-aging applications.

Utilizing these byproducts not only minimizes agricultural waste but also enhances the value chain by transforming low-cost materials into high-performance ingredients. Advanced extraction methods ensure the bioactivity and stability of these compounds, making them suitable for incorporation into halal-certified formulations.

This presentation discusses properties of these bioactives, their mechanisms of action, and their alignment with halal and sustainability principles. By integrating these natural compounds, the industry can address growing consumer demand for effective, ethical, and environmentally responsible products.

Keywords: Green Coffee Bean Extract (GCBE), Banana Peel Extract, Antioxidants, Sustainable Halal Cosmetics, Bioactive Compounds

SPEAKERS

Assoc. Prof. Dr. Nasser Al-Habsi

Assistant Dean for Postgraduate Studies & Research Dept. Food Science and Nutrition, Sultan Qaboos University, Oman

Eng. Hamad Al-Mansour

Associate Research Scientist at the Environment and Life Sciences Research Center, KISR, Kuwait

SPEAKERS

Dr. Nawawee Arawan

Researcher, the Halal Science Center Chulalongkorn University (HSC-CU), Thailand

Dr. Nawawee Arawan is a distinguished Islamic jurisprudence researcher at the Halal Science Center, Chulalongkorn University, and a part-time lecturer at the International Islamic College, Krirk University. With expertise in Islamic jurisprudence, Arabic language, and multicultural studies, he specializes in Halal and Haram laws and family jurisprudence.

Dr. Nawawee holds a Ph.D. and Master's degree in Islamic Revealed Knowledge and Jurisprudence from the International Islamic University Malaysia, graduating with honors. His academic journey began with a Bachelor's degree in Shari'a Sciences from Oman. He has also served as a full-time teacher at Ridwanun Islam School, where he teaches Islamic studies and Arabic.

Recognized for his research and fieldwork, Dr. Nawawee focuses on contemporary Islamic issues such as family leadership, adoption, and ethical jurisprudence in multicultural societies. He has earned multiple awards in Qur'an recitation at national and international levels and has published scholarly articles in reputable journals. Dr. Nawawee actively contributes to academic discourse through lectures, translations, and mentorship, and is a sought-after speaker on Islamic jurisprudence in Thailand and beyond.

Topic of Speech: ***The concept of cultured meat in the perspective of Fatwa according to Islamic Jurisprudence***

Cultured meat is extracting cells from animals in a laboratory or scientific research facility. Once the process is complete, the result is a product that resembles conventional meat from that particular animal, it can consumed in the same way as meat available in the market. However, the question is cultured meat is considered halal according to Islamic jurisprudence. Can Muslims consume it? This issue remains a new topic, and no religious scholars in Thailand have provided their opinions or fatwas on this matter yet.

Researcher has fond the Fatwa from scholars from Saudi Arabia: Sheik Abdullah Al Mana, Professor Abdullah Al Mutlaq, Professor Saad Al shammari. They are three scholars who have a widespread opinion and influence in the Kingdom of Saudi Arabia. They have set four conditions for cultured to be Halal: 1. The cells used for culturing must come from halal animals, such as chicken or cattle. 2. The animal from which the cells are extracted must be slaughtered according to Islamic law. 3. The culture medium used to nourish the cells must not contain any prohibited substances or impurities, such as blood, or ingredients from haram animals like pigs. 4. The cultured meat must be safe for consumption and pose no harm to human health, and this must be verified by experts, such as food regulatory authorities within the country.

Next, the researcher has found additional fatwas from the Egyptian Fatwa Authority. The Egyptian Fatwa authority set four conditions, which were the same as the conditions set by scholars from Saudi Arabia. Moreover, the researcher has found paper from Mr. Mohd Izhar Ariff Mohd Kashim and his team. He is researcher at Universiti Kebangsaan Malaysia, he wrote his article on cultured meat and set out six conditions. Conditions one to three are similar to those of scholars from Saudi Arabia and Egypt but conditions four to six is different, He put the Istihalah (transformation or change in nature) during production, Maslahah (public or benefit) and mafsadah (damage), and Darurat (exigency) of cultured meat in his conditions. These three conditions are particularly interesting and have been extensively analyzed in terms of Islamic jurisprudence and in the context of Thailand. This information will be useful to religious scholars in Thailand for fatwa on the issue of cultured meat in the future.

SESSION CHAIRS

Prof. Dr. Faridah Hj Hassan

President of World Academy of Islamic Management, Advisor MACFEA, and Department of Ranking at UiTM Global, Universiti Teknologi MARA Malaysia

Professor Dr Faridah Hj Hassan from Department of Ranking at UiTM Global, Universiti Teknologi MARA Malaysia is currently the Vice President of World Academy of Islamic Management, Chartered Institute of Marketing and MACFEA. She was the founder of Halal Management and Science HALALMAS, Director of Institute of Business Excellence and a former Dean Faculty of Business Management. Her works involve in numerous international research consultancy, training, publication and she is the chief and associate editor for 2 SCOPUS journals MAJCAFE and emerald JIMA. She is a regular invited speaker in various international conferences in halal, marketing and strategic business management.

Assist. Prof. Dr. Paradorn Sureepong

Assistant Director, the Halal Science Center, Chulalongkorn University (HSC-CU), Thailand

Dr. Pradorn Sureepong is appointed as Assistant Director, The Halal Science Center Chulalongkorn University, Thailand. He received his Bachelor of Engineering (Computer Engineering), from Faculty of Engineering, Chiang Mai University, Thailand and pursued to another level and received his Master of Economics from Faculty of Economic, Chiang Mai University, Thailand. He received his PhD for Dual Degree Program from Université Lumière Lyon 2, France and Chiang Mai University, Thailand in 209. He has published many academic articles and remarkable writings.

SESSION CHAIRS

Prof. Ts. Dr. Suraini Abd Aziz

Professor at Faculty of Biotechnology & Biomolecular Sciences, Universiti Putra Malaysia

Prof. Ts. Dr. Suraini Abd Aziz is a professor at the Faculty of Biotechnology and Biomolecular Sciences, Universiti Putra Malaysia. Her expertise lies in biochemical engineering, with a focus on enzyme technology and industrial biotechnology. She holds a Ph.D. and Master's degree in Biochemical Engineering from the University of Wales Swansea, United Kingdom, and a Bachelor's degree in Clinical Biochemistry from Universiti Kebangsaan Malaysia. Prof. Suraini's work bridges academia and industry, advancing research in enzyme applications and biotechnology.

Assoc. Prof. Dr. Srawut Aree

Director of Muslim Studies Center of Chulalongkorn University, Thailand

Assoc. Prof. Dr. Srawut Aree is a prominent researcher specializing in West Asian Studies, with a focus on political science and Islamic political movements. He earned his Ph.D. in West Asian Studies from Aligarh Muslim University in 2002, where his dissertation explored contemporary ideological and political trends in Egypt. Additionally, he holds an M.A. in the same field from the same institution and a B.A. in Islamic Studies.

Dr. Aree has actively contributed to the academic community through various research papers presented at international conferences, addressing topics such as terrorism perspectives in the Muslim world and the role of international Islamic organizations. His publications include significant works on state and society dynamics in Saudi Arabia and Iran, as well as contributions to encyclopedic entries on the Middle East.

In addition to his research, Dr. Aree is a columnist for national newspapers in Thailand, sharing insights on issues related to the Muslim world and promoting a deeper understanding of West Asian affairs. His expertise continues to influence both academic discourse and public understanding of complex geopolitical dynamics in the region.

SESSION CHAIRS

Prof. Dr. Ahmed M. Youssef

National Research Center, Dokki, Cairo, Egypt

Ahmed M. Youssef, B. Sc., M.Sc., Ph.D is a Head of Packaging Materials Department at National Research Centre. He serves as the Vice President of Conference Unite at National Research Centre, Secretary of Council of Industrial Technology at Academy of Scientific Research and Technology, Technical Examiner for the Egyptian Patent Office, and an Ambassador of Good Well from Arkansas state to the people of other states in United States of America.

He also holds the position of a Full Professior at Packaging Materials Department at National Research Centre, Dokki, Egypt. He attained his Ph.D. in Organic Chemistry from Ain Shams University, Egypt. Meanwhile, his bachelor's degree, Pre-Master's degree of science, and master's degree of science were attained from Manoufyia University, Egypt.

His research areas include different plastic analysis, different polymerization techniques, preparation and characterizations of nanomaterials, treatment of clays, and preparation and characterization for materials such as Polymer nanocomposites, novel Paper composites, conducting Polymer with nanomaterials and nanofiber, and determination of Water Vapor Transition Rate (WTVR) and Gases Permeability (GTR) for films and packaging.

Some of his latest award achievements are Excellence Award in Applied Chemistry from National Research Award, Best Applied Research Paper in Food Industry from Dream Company, and The Order of Merit, First Class, for Sciences & Art from the President Abdel Fatah Al-SiSi, President of the Arab Republic of Egypt.

Prof. Dr. Sirichai Adisakwattana

Head of Phytochemical and Functional Food Research Unit for Clinical Nutrition, Chulalongkorn University, Thailand

Prof. Dr. Sirichai Adisakwattana is the Head of the Phytochemical and Functional Food Research Unit for Clinical Nutrition at Chulalongkorn University, Thailand. His expertise includes nutrition and dietetics, phytochemicals, and functional foods. He holds a Ph.D. in Pharmacology and a B.Sc. in Chemistry, both from Chulalongkorn University. Prof. Sirichai's work focuses on advancing research in functional food and clinical nutrition to promote health and wellness.

SESSION CHAIRS

Assoc. Prof. Dr. Pakorn Priyakorn

The Halal Standard Institute of Thailand

Associate Professor Dr. Pakorn Priyakorn is the Director of the Halal Standard Institute of Thailand. President of the National Political Reform Committee, Professor in Public Administration, and former Dean of the Graduate School of Public Administration, National Institute of Development Administration. He is also the representative of Thailand at the Standards and Metrology Institute for Islamic Countries (OIC/SMIIC).

Associate Professor Dr. Pakorn Priyakorn is the Director of the Halal Standard Institute of Thailand. President of the National Political Reform Committee, Professor in Public Administration, and former Dean of the Graduate School of Public Administration, National Institute of Development Administration. He is also the representative of Thailand at the Standards and Metrology Institute for Islamic Countries (OIC/SMIIC).

Associate Professor Dr. Pakorn Priyakorn is the Director of the Halal Standard Institute of Thailand. President of the National Political Reform Committee, Professor in Public Administration, and former Dean of the Graduate School of Public Administration, National Institute of Development Administration. He is also the representative of Thailand at the Standards and Metrology Institute for Islamic Countries (OIC/SMIIC).

Dr. Anat Denyingyhot

Assistant Director, The Halal Science Center, Chulalongkorn University (HSC-CU), Thailand

Dr. Anat Denyinghyot, Ph.D. is the Assistant Director of Research and Innovation and the Head of Scientific Service Affairs at The Halal Science Center Chulalongkorn University. He obtained his Bachelor of Science at the Faculty of Science, Thammasat University, and M.Sc. of Food Technology and Ph.D. of Biotechnology from the Faculty of Science, Chulalongkorn University. His research expertise covers the area of Food Safety and Food Quality Management, Molecular Biology, Halal Forensic Science, and Halal Innovation.

He holds a position of Lead Auditor FSSC 22000, certificated by the International Register of Certificated Auditors (IRCA) which is registered in England. Besides his current position as the Assistant Director, he is also a consultant in HAL! (Halal Assurance and Liability Quality System) for preparing Halal products in production plants.

SESSION CHAIRS

Prof. Dr. Umair Arshad

Professor / Chairperson Department of Food Science
Government College University, Faisalabad, Pakistan

Prof. Dr. Umair Arshad is an accomplished academic and leader in the field of Food Science, currently serving as a Professor and Chairperson of the Department of Food Science at Government College University Faisalabad (GCUF), Pakistan. In addition to his academic role, he is the Director of Industrial Linkages at GCUF and has a distinguished record of leadership in the food science community. Prof. Dr. Arshad is also the Treasurer of the Pakistan Society of Food Scientists and Technologists (PSFST) and serves as a member of several prominent scientific panels, including the Punjab Food Authority (PFA) and the Pakistan Standard Quality Control Authority (PSQCA).

Prof. Dr. Arshad's expertise spans various domains within food science, including food fortification, food labeling regulations, and the health claims of food products. He has provided valuable consultancy at national and international levels for renowned organizations such as GAIN, the Food for Peace Program (FFP), the Scaling Up Nutrition Academia Research Network (SUNAR), and the Punjab Food Authority (PFA). His research interests focus on the glycemic responses of food, appetite regulation, and the nutritional composition of dairy products.

Dr. Arshad earned his Ph.D. in Food Science and Technology from the University of Agriculture Faisalabad, where he was awarded an Indigenous Ph.D. Scholarship from the Higher Education Commission of Pakistan. His postdoctoral studies in Nutrition at the University of Toronto (2014-2016) further strengthened his expertise in the field. He has also played a significant role in shaping food fortification strategies and food safety regulations at both the national and international levels.

Prof. Dr. Arshad continues to make significant contributions to the food science field through his leadership, research, and consultancy work, particularly in food labeling, health claims, and nutritional fortification strategies, with a special focus on dairy products and their components. His work remains pivotal in advancing food science policy, nutrition, and food safety globally.

SESSION CHAIRS

Associate Professor Suwimol Sapwarobol

Faculty of Allied Health Sciences Chulalongkorn University, Thailand

Dr. Suwimol Sapwarobol is an esteemed Associate Professor at the Faculty of Allied Health Sciences, Chulalongkorn University in Bangkok, Thailand. She holds a Doctor of Public Health in Nutrition from Loma Linda University and a Master of Science in Pharmacology from Chulalongkorn University. With a robust background as a registered dietitian nutritionist, her research focuses on non-communicable diseases, clinical nutrition, and diet therapy, particularly concerning metabolic syndrome and diabetes.

In her role as Deputy Dean for Academic Affairs and Education at Chulalongkorn University since 2020, Dr. Sapwarobol has significantly contributed to the development of the BSc. Nutrition and Dietetics curriculum. She has also led various initiatives aimed at improving dietary practices among preschool children through innovative nutrition programs. Her extensive publication record includes numerous articles in reputable journals, highlighting her commitment to advancing knowledge in clinical nutrition.

Dr. Sapwarobol is actively involved in national and international research collaborations and has presented her findings at various conferences. Her dedication to education and research continues to impact the field of nutrition and public health in Thailand and beyond.

Dr. H. Sapta Nirwandar, SE., DESS.

Chairman of Indonesia Halal Lifestyle Center, Indonesia

Dr. H. Sapta Nirwandar, SE., DESS., is the Chairman of the Indonesia Halal Lifestyle Center and a leading expert in tourism, the Halal lifestyle, and Islamic marketing. He holds an honorary professorship from the Silk Road International University of Tourism and Cultural Heritage and advanced degrees from prestigious institutions in Paris, including a Doctorate from Université Paris IX - Dauphine. An alumnus of the École Nationale d'Administration (ENA), he also holds a Bachelor of Economy from Padjajaran University, Bandung. Dr. Sapta's work bridges academia and industry, promoting the Halal lifestyle and sustainable tourism development globally.

SESSION CHAIRS

Dr. Anthony Sales

Regional (Director of DOST XI DOST Halal Science and Technology Program Lead), Philippines

Dr. Anthony Cinco Sales is a distinguished professional in food technology and mycotoxicology, currently serving as the Regional Director IV at the Department of Science and Technology (DOST) in the Philippines since 2009. He holds a Ph.D. in Mycotoxicology from Ehime University, Japan, where he was awarded a Monbukagakusho scholarship, and has furthered his expertise with a Master's in Management from the University of the Philippines Mindanao and a Master's in Food Science from the University of the Philippines Diliman.

With over 30 years of experience, Dr. Sales has been instrumental in advancing science and technology initiatives, particularly in food safety and innovation. His leadership has led to the successful implementation of quality management systems within DOST, earning the organization notable awards for excellence. He actively participates in various national and international committees, contributing to significant programs such as the DOST National Program on Food Innovation Centers Development and the DOST Halal S&T Program.

In addition to his administrative roles, Dr. Sales is recognized for his research contributions, particularly regarding aflatoxins and food safety. He has published numerous articles in reputable journals and serves as a reviewer for several scientific publications. His commitment to enhancing food technology practices continues to influence policies and strategies aimed at sustainable agricultural development in the Philippines.

Asst. Prof. Dr. Pakpum Somboon

Lecturer, Bio-Electronic Research Laboratory (BERL), Department of Electrical Engineering, Chulalongkorn University, Thailand

Asst. Prof. Dr. Pakpum Somboon is a lecturer at the Bio-Electronic Research Laboratory (BERL) in the Department of Electrical Engineering, Chulalongkorn University, Thailand. Specializing in biomedical and electrical engineering, he holds a Ph.D. in Physical Electronics from the Tokyo Institute of Technology, Japan, as well as a Master's and Bachelor's degree in Electrical Engineering from Chulalongkorn University. Dr. Somboon's expertise bridges the fields of electronics and biomedical innovation, contributing significantly to research and education.

SESSION CHAIRS

Asst. Prof. Dr. Muhammad Sajid Arshad

Department of Food Science Government College University, Faisalabad, Pakistan

Prof. Muhammad Umair Arshad is a distinguished academic and leader in the field of Food Sciences, currently serving as a Professor and Chairman of the Department of Food Science at Government College University Faisalabad (GCUF), Pakistan. With a versatile leadership style, he has demonstrated exceptional capabilities in building, leading, and training cross-functional teams within both academic and industry settings. Prof. Arshad is also the Director of Industrial Linkages at GCUF and plays an active role in several prestigious scientific panels, including the Punjab Food Authority (PFA) and the Pakistan Standard Quality Control Authority (PSQCA).

Prof. Arshad has a broad range of expertise, including food fortification strategies, health claims and food labeling regulations, and the glycemic responses of food, with a special focus on dairy products and their components. His consultancy work with national and international organizations, including GAIN, the Food for Peace Program (FFP), and the Scaling Up Nutrition Academia Research Network (SUNAR), has further solidified his reputation as a leading expert in the field. He also serves as the Treasurer of the Pakistan Society of Food Scientists and Technologists (PSFST) and heads the Scientific Panel for Dairy, Fat & Oil, and Infant Formulas at PFA.

Prof. Arshad holds a Ph.D. in Food Science & Technology from the University of Agriculture Faisalabad, Pakistan, where he was awarded an Indigenous Ph.D. Scholarship by the Higher Education Commission of Pakistan. He further enhanced his expertise with a postdoctoral fellowship in Nutrition at the University of Toronto, Canada. Prof. Arshad has extensive teaching and research experience, having supervised numerous Master's and Ph.D. students, and coordinated various research and extension projects in food science and nutrition.

His academic career includes roles at prominent institutions, such as the University of Sargodha and North Carolina State University, USA. With a strong commitment to advancing food science education and research, Prof. Arshad continues to contribute significantly to both national and international food science communities.

SESSION CHAIRS

Asst. Prof. Dr. Sukrit Sirikwanpong

Lecturer, Department of Nutrition and Dietetics
Chulalongkorn University, Thailand

Asst. Prof. Dr. Sukrit Sirikwanpong is a lecturer in the Department of Nutrition and Dietetics at Chulalongkorn University, Thailand. His expertise spans lipid and fat science, cosmetic science, and Halal science. He earned his Ph.D. in Biomedical Sciences and B.Sc. in Medical Technology (Hons) from Chulalongkorn University. Additionally, he served as a research assistant with the Lipid Mass Spectrometry-Lipidomics Research Group at the University of Southampton, United Kingdom, contributing to advanced research in lipidomics.

Prof. Jalaloden Bansil Marohom

University of Southern Mindanao, Philippines

Jalaloden B. Marohom, DBA is an Assistant Professor IV of the University of Southern Mindanao in the Philippines. He worked on his dissertation paper particularly the behavioral influence on halal food consumption, which made him complete the degree Doctor of Business Administration.

He received funding for various research projects on halal which aims for development and commercialization. Additionally, some of his trainings participated in are technology commercialization, technology business incubation, and social entrepreneurship. In 2017, he was awarded as Most Outstanding Marketing Educator. With his dedication, he wishes to work on projects that make an impact to the community.

CONFERENCE PROGRAM

Thursday | December 19, 2024

Tentative Conference Program

Day 0: December 18, 2024 (WEDNESDAY)	
14:00 – 20:00	Arrival of delegates

Day 1: December 19, 2024 (THURSDAY)`	
Time	**Grand Meroz Room** **IHSATEC2024; 17th HASIB**
08:00 – 09:00	Registration of delegates
09:00 – 09:50	**Grand Opening Ceremony**
09:00 – 09:05	• Recitation of the Holy Al-Quran
09:05 – 09:10	• **Opening Ceremony presentation**
09:10 – 09:15	• **Welcoming Remarks by Prof. Dr. Sombat Treeprasersuk, MD.**, Vice President of Chulalongkorn University
09:15 – 09:20	• **Congratulatory Remarks by H.E. İhsan ÖVÜT,** Secretary General, The Standards and Metrology Institute for the Islamic Countries (SMIIC) *** *Video Presentation****
09:20 – 09:25	• **Report Notes by Assoc. Prof. Dr. Winai Dahlan**, Founding Director, The Halal Science Center, Chulalongkorn University (HSC-CU)
09:25 – 09:30	• **Opening Remarks by Chairman of Ceremony, Mr. Akanat Promphan,** Minister of Industry, Thailand
09:30 – 09:35	• **Opening Ceremony**
09:35 – 09:45	• **Chairman of Ceremony** receiving a token of appreciation
09:45 – 09:50	• **Photo Sessions**
09:50 – 10:15	**Exhibition visit by Chairman of Ceremony**
10:15 – 10:30	Tea/Coffee Break/ Poster Viewing
10:30 – 11:00	**Keynote Session** **2AIs for Thailand's Halal Trust & Confidence** **Chairperson: Prof. Dr. Faridah Hj Hassan,** President of World Academy of Islamic Management, Advisor MACFEA, and Department of Ranking at UiTM Global, Universiti Teknologi MARA Malaysia **Keynote Speaker: Assoc. Prof. Dr. Winai Dahlan**, Founding Director, The Halal Science Center, Chulalongkorn University (HSC-CU), Thailand

Day 1: December 19, 2024 (THURSDAY)`	
Time	**Grand Meroz Room** **IHSATEC2024; 17th HASIB**
11:00 – 12:00	**Session 1:** **Advanced Power AIs for Halal Trust** **Chairperson: Assist. Prof. Dr. Paradorn Sureepong,** Assistant Director, the Halal Science Center, Chulalongkorn University (HSC-CU), Thailand
11:00 – 11:10	**Speaker 1: Prof. Dr. Abdelaziz Bouras** Professor at College of Engineering, Qatar University, Qatar **Title: Digital Technology Trustworthiness: from AI-based process Enhancement to technology lifecycle management**
11:10 – 11:20	**Speaker 2: Prof. Dr. Ahmed Seffah,** College of Technological Innovation, Zayed University UAE ***Title: AI for halal Science and Halal of AI Science***
11:20 – 11:30	**Speaker 3: Assoc. Prof. Worasit Choochaiwattana,** Chulalongkon Business School, Chulalongkorn University, Thailand ***Title: AI Automation vs. AI Augmentation: Shaping the Future of Nutrition and Dietetics***
11:30 – 11:40	**Speaker 4: Dr. Amalia Mohd Hashim,** Head of Laboratory, Halal Products Research Institute, Universiti Putra Malaysia, Malaysia ***Title: Halal Meets Artificial Intelligence, The Future of Halal Authentication***
11:40 – 11:50	**Speaker 5: Mr. Syed Atiq ul Hasan,** Founding Director Halal Expo Australia, Journalist, Writer & Speaker, Australia ***Title: The Role of AI in the Halal Industry*** *(Video presentation)*
11:50 – 12:00	**Panel Discussion, Question and Answer session**
12:00 – 13:00	Lunch and Dhuhr prayer

Time	**Grand Meroz Room** **IHSATEC2024; 17th HASIB**	**Time**	**Rifaee Room** **Halal Route Workshop**
13:00 – 14:00	**Session 2:** **Halal Wellness and Beauty** **Chairperson: Prof. Ts. Dr. Suraini Abd Aziz,** Professor at Faculty of Biotechnology & Biomolecular Sciences, Universiti Putra Malaysia	**13:00 – 15:15** 13:00 – 13:05 13:05 – 13:10	**Halal Route Workshop** **Welcoming Address** • by Head of Delegates of Thailand • by Director of CIMT

INTERNATIONAL CONFERENCE
งานประชุมวิชาการด้านวิทยาศาสตร์ และนวัตกรรมฮาลาลนานาชาติ
19-20 DECEMBER 2024 at Al Meroz Hotel Bangkok

Time	Grand Meroz Room IHSATEC2024; 17th HASIB	Time	Rifaee Room Halal Route Workshop
13:00 – 13:10	**Speaker 1: Prof. Dr. Irwandi Jaswir,** Dean for Academic, Research, and Publication at INHART, the International Islamic University Malaysia (IIUM), Malaysia ***Title: Concerns over Water Permeable Claims of Wudu- Friendly Cosmetics***	**13:10 – 13:45**	**Session 1** **"Halal Route: Unlocking the Future of Halal Thai Tourism"**
13:10 – 13:20	**Speaker 2: Mr. Aleem Siddiqui M. Guiapal,** Program Manager Halal Industry Development Department of Trade & Industry Phillipines ***Title: Integration of Relevant Policies on Halal of ASEAN Member Countries: Market opportunities for Emerging Industries (Cosmetics, Functional Food)***	13:10 – 13:25	**"Driving the Future of Halal Thai Tourism: The Halal Route Concept"** **by Assoc. Prof. Dr. Winai Dahlan,** Founding Director, The Halal Science Center, Chulalongkorn University (HSC-CU)
13:20 – 13:30	**Speaker 3: Dr. Simab Kanwal,** Institute of Nutrition, Food Chemistry Unit, Mahidol University, Thailand ***Title: Cosmeceutical Applications of Algae Biometabolites- Halal, Vegan and Sustainable Prospects***	13:25 – 13:45	**"The Potential of Halal Route Application and Key Stakeholders in the Halal Ecosystem"** **by Assist. Prof. Dr. Paradorn Sureepong,** Assistant Director, HSC-CU **Panel Discussion, Question and Answer session**
13:30 – 13:40	**Speaker 4: Dr. Kasinee Katelekha**, Assistant Director, The Halal Science Center, Chulalongkorn University (HSC-CU), Thailand ***Title: Natural Bioactive compound for sustainable Halal cosmetic***	13:45 – 15:15	**Session 2** **"Interactive Workshop of the Halal Route Application"** **By Dr. Peraya Kojaranon,** Executive Director, Digital Era Group Co., Ltd. & Halal Route Development Team
13:40 – 14:00	**Panel Discussion, Question and Answer session**		

Time	Grand Meroz Room IHSATEC2024; 17th HASIB	Time	Rifaee Room Halal Route Workshop
14:00 – 15:00	**Session 3:** **Oral Presentation (OP)** **Science, Technology, and Innovation** *(8 min presentation + 2 min Q&A)*	**14:00 – 15:00**	**Young Halal Innovators Project Presentation** **Mentor 1: Assoc. Prof. Dr. Moohamad Ropaning Sulong,** Universiti Islam Sultan Sharif Ali, Brunei **Mentor 2: Asst. Prof. Dr. Muhammad Sajid Arshad,** Department of Food Science Government College University, Faisalabad, Pakistan
14:00 – 14:10	**Global Research Ecosystem Introduction by Dr. Hendrati Dwi Mulyaningsih.** Co-Chair of IHSATEC 2024: 17th HASIB (Academic), Founder & Chairperson of Research Synergy Foundation		
14:10 – 14:15	**Welcoming Academic Presentation and Group Photo** **Chairperson 1: Prof. Dr. Sirichai Adisakwattana,** Head of Phytochemical and Functional Food Research Unit for Clinical Nutrition, Chulalongkorn University, Thailand **Chairperson 2: Dr. Simab Kanwal,** Institute of Nutrition, Food Chemistry Unit, Mahidol University, Thailand **Chairperson 3: Prof. Dr. Ahmed M. Youssef,** Professor of Packaging and Packing materials, National Research Center, Dokki, Cairo, Egypt.		
14:15 – 14:25	Academic presenter: **1. Paper ID: HST24110** **Presenter: Mrs. Atika Yahdiyani Ikhsani** - Universitas Islam Negeri Sunan Kalijaga, Indonesia **Title: " Functional Properties and Nutritional Value of Local Hyacinth Bean (Lablab purpureus (L.) Sweet) Protein Isolate: A Potential Halal Ingredient Substitute"**		

Time	Grand Meroz Room IHSATEC2024; 17th HASIB	Time	Rifaee Room Halal Route Workshop
14:25 – 14:35	**2. Paper ID: HST24128** **Presenter: Mrs. Ayesha Shiddika Afsana -** Bangladesh Livestock Research Institute, Savar, Dhaka **Title: "Isolation and Identification of Lactic Acid Bacteria from Local Dahi for the Development of Probiotic Starter Culture"**		
14:35 – 14:45	**3. Paper ID: HST24153** **Presenter: Ms. Supharada Khaisaat -** Chiang Mai University, Thailand **Title: "Production of Chitooligosaccharides with Anti-Acetylcholinesterase and Antioxidant Properties from Chitosan Using Enzymatic Hydrolysis"**		
14:45 – 15:00	**4. Paper ID: HST24132** **Presenter: Prof. Dr. Syed Ghulam Musharraf -** H.E.J. Research Institute of Chemistry, ICCBS, University of Karachi, Pakistan **Title: "A comparative untargeted-metabolomics differentiation of unripened cow milk cheese produced from different sources of rennet including pig rennet"**		
15:00 – 15:10	**5. Paper ID: HST24135** **Presenter: Dr. Sadaf Shakoor -** University of Agriculture, Faisalabad Sub Campus Burewala, Pakistan **Title: "Histopathological Changes Induced by Tartrazine and Curcumin Food Colorants in Glands and Tissues of Female Sprague Dawley"**		
15.10 – 15.25	Tea/Coffee Break/ Poster Viewing	15.15 – 15.30	Tea/Coffee Break/ Poster Viewing

Time	Grand Meroz Room IHSATEC2024; 17th HASIB	Time	Rifaee Room Halal Route Workshop
15.25 – 16.15	**Session 4:** **Oral Presentation (OP)** **Science, Technology, and Innovation** *(8 min presentation + 2 min Q&A)*		
15:25 – 15:35	**Welcoming Academic Presentation and Group Photo** **Chairperson 1: Assoc. Prof. Dr. Srawut Aree,** Director of Muslim Studies Center of Chulalongkorn University, Thailand **Chairperson 2: Prof. Dr. Faridah Hj Hassan,** President of World Academy of Islamic Management, Advisor MACFEA, and Department of Ranking at UiTM Global, Universiti Teknologi MARA Malaysia		
15:35 – 15:45	Academic presenter: **1. Paper ID: HST24119** **Presenter: Dr. Jean Paolo Lacap -** City College of Angeles, Philippines **Title: "Developing a Framework for Non-Muslim Willingness to Try Halal Restaurants: A Path Modeling Analysis"**		
15:45 – 15:55	**2. Paper ID: HST24120** **Presenter: Mr. Naved Alam -** Aligarh Muslim University, Aligarh, India **Title: "The Role of AI in Language Learning in the context of the 21st Century: Adaptive Learning Methods and Their Impact on learners and Personalized"**		

Time	Grand Meroz Room IHSATEC2024; 17th HASIB	Time	Rifaee Room Halal Route Workshop
15:55 – 16:05	**3. Paper ID: HST24141** **Presenter: Assist. Prof. Dr. Wassana Bootpo -** Faculty of Education, Ramkhamhaeng University, Thailand **Title: "The Guideline of Development Halal Tourism Strategy to Promoting Sport and Health Business Sectors in the Bangkok Metropolitan "**		
16:05 – 16:15	**6. Paper ID: HST24140** **Presenter: Assoc. Prof. Dr. Manoon Tho-ard -** Shinawatra University, Thailand **Title: "Targeted Halal Marketing's Information Impacting on Diverse Muslim Consumer Needs"**		
19:00 - 20:30	**Welcoming Dinner**		

CONFERENCE PROGRAM

Friday | December 20, 2024

THAILAND HALAL ASSEMBLY2024

INTERNATIONAL CONFERENCE
งานประชุมวิชาการด้านวิทยาศาสตร์ และนวัตกรรมฮาลาลนานาชาติ
19-20 DECEMBER 2024 at Al Meroz Hotel Bangkok

Day 2: December 20, 2024 (FRIDAY)			
Time	**Grand Meroz Room IHSATEC2024; 17th HASIB**	**Time**	**Archway IHSATEC2024; 17th HASIB Poster session**
08:30 – 09:00	Registration of delegates		
09:00 – 10:00	**Session 5: Halal Compliance with A New Frontier Food and Nonfood Innovation** **Chairperson: Assoc. Prof. Dr. Pakorn Priyakorn,** the Halal Standard Institute of Thailand.	**09:00 - 10:00** 09:00 – 09:10	**IHSATEC2024; 17th HASIB Poster session** *(3 min presentation + 2 min Q&A)* **Welcoming Academic Presentation and Group Photo**
09:00 – 09:10	**Speaker 1: Mr. Farhan Tufail,** Director of Halal Certification Services, Switzerland ***Title: Halal Status of Novel Food***	**09:10 - 09:30**	• **Cluster 1: Business & Marketing, Social Science**
09:10 – 09:20	**Speaker 2: Ms. Nur Sharalyn Abdullah,** Manager, Halal Certification (Business Transformation) | Halal Development, Majlis Ugama Islam Singapura (Islamic Religious Council of Singapore) ***Title: Reconciling New Frontiers and Islamic Principles: Singapore's View on Alternative Proteins***		**Chairperson 1: Dr. H. Sapta Nirwandar, SE., DESS., DESS.** Chairman of Indonesia Halal Lifestyle Center, Indonesia **Chairperson 2: Dr Anthony Sales,** Regional (Director of DOST XI DOST Halal Science and Technology Program Lead), Philippines
09:20 – 09:30	**Speaker 3: Dr. Nawawee Arawan,** Researcher, the Halal Science Center Chulalongkorn University (HSC-CU), Thailand	09:10 – 09:15	**1. Paper ID: HST24102 Presenter: Dr. Mohamed Syazwan Ab Talib -** Universiti Brunei Darussalam, Brunei **Title: "Sustainability in Halal Logistics and Supply Chain Management Research"**
09:30 – 09:40	**Speaker 4: Dr. Acharee Suksuwan,** Researcher, the Halal Science Center Chulalongkorn University, Thailand ***Title: Microplastics: A New Challenge in Halal Food Safety for Sustainability***	09:15 – 09:20	**2. Paper ID: HST24107 Presenter: Ms. Al Marifatul Ala -** Universitas Airlangga, Indonesia **Title: "Prankvertising from an Islamic Marketing Perspective: A Case Study of The Collaboration between Polki Indonesia, Shireen Sungkar and Teuku Wisnu"**
09:40 – 10:00	**Panel Discussion, Question and Answer session**		

Day 2: December 20, 2024 (FRIDAY)			
Time	**Grand Meroz Room IHSATEC2024; 17th HASIB**	**Time**	**Archway IHSATEC2024; 17th HASIB Poster session**
		09:20 – 09:25	**3. Paper ID: HST24139** **Presenter: Mrs. Anis Mursyidah binti Annis Azman -** Universiti Teknologi MARA, Malaysia **Title: "Expanding the Halal Horizons: The Emergence of Halal Certification for Consumer Goods and Unidentified Product Categories"**
		09:25 – 09:30	**4. Paper ID: 176813** **Presenter: Dr. Nur Farhani Zarmani -** Universiti Teknologi MARA, Malaysia **Title: "Securing Global Credibility: Examining Key Issues among Halal Certification Bodies (HCBs)"**
		09:30 - 09:50	• **Cluster 2: Science, Technology, and Innovation** **Chairperson 1: Asst. Prof. Dr. Pakpum Somboon,** Lecturer, Bio-Electronic Research Laboratory (BERL), Department of Electrical Engineering, Chulalongkorn University, Thailand **Chairperson 2: Asst. Prof. Dr. Muhammad Sajid Arshad,** Department of Food Science Government College University, Faisalabad, Pakistan
		09:30 – 09:35	**1. Paper ID: HST24115** **Presenter: Mrs. Alya Mafaza -** Halal Center UIN Sunan Kalijaga, Indonesia **Title: "Ensuring Halal Integrity and Food Safety in Sustainable Pesantren-Based SMEs: A Comprehensive HACCP and HGMP Approach"**

Day 2: December 20, 2024 (FRIDAY)			
Time	**Grand Meroz Room IHSATEC2024; 17th HASIB**	**Time**	**Archway IHSATEC2024; 17th HASIB Poster session**
		09:35 – 09:40	**2. Paper ID: HST24138 Presenter: Dr. Siti Suaidah Rahim-** Universiti Teknologi Brunei **Title: "Desiccation Cracking of Rice Husk and Crushed Coir Inclusions in Clay Soil as Biocover"**
		09:40 – 09:45	**3. Paper ID: HST24142 Presenter: Mrs. Nor Surilawana Sulaiman -** Halalan Thayyiban Research Centre, Universiti Islam Sultan Sharif Ali **Title: "Developing an Assertive Halal Governance Framework for Internal Halal Committee Board in Halal Industry"**
10:00 – 10:20	Tea/Coffee Break/ Poster Viewing		
10:20 – 12:20	**Session 6: Oral Presentation (OP) Science, Technology, and Innovation** *(8 min presentation + 2 min Q&A)*	**10:20 - 11:15**	**IHSATEC2024; 17th HASIB Poster session (Parallel Session)** *(3 min presentation + 2 min Q&A)*
10:20 – 10:30	**Welcoming Academic Presentation and Group Photo Chairperson 1: Prof. Dr. Umair Arshad,** Professor / Chairperson Department of Food Science Government College University, Faisalabad, Pakistan **Chairperson 2: Assoc. Prof. Dr. Suwimol Sapwarobol,** Faculty of Allied Health Sciences Chulalongkorn University, Thailand	10:20 – 10:30	**Welcoming Academic Presentation and Group Photo** • **Cluster 3: Science, Technology, and Innovation** **Chairperson 1: Asst. Prof. Dr. Pakpum Somboon,** Lecturer, Bio-Electronic Research Laboratory (BERL), Department of Electrical Engineering, Chulalongkorn University, Thailand

Day 2: December 20, 2024 (FRIDAY)			
Time	**Grand Meroz Room** **IHSATEC2024; 17th HASIB**	**Time**	**Archway** **IHSATEC2024; 17th HASIB** **Poster session**
10:30 – 10:40	Academic presenter: **1. Paper ID: HST24112** **Presenter: Dr. Anam Latif -** Institute of Food Science & Nutrition, University of Sargodha, Pakistan **Title: "Development of Halal Antimicrobial Agents from Plants: Prospects to Halal Nutritional Framework"**		**Chairperson 2: Asst. Prof. Dr. Muhammad Sajid Arshad,** Department of Food Science Government College University, Faisalabad, Pakistan
10:40 – 10:50	**2. Paper ID: HST24113** **Presenter: Dr. Usman Mir Khan -** University of Agriculture, Faisalabad, Pakistan **Title: "Halal plant-based gelatin production, authentication and implementations"**	10:30 – 10:35	**1. Paper ID: HST24145** **Presenter: Ms. Netnapa Ontao -** The Halal Science Center, Chulalongkorn University, Thailand **Title: "Comparative Analysis of Thymoquinone Content and Nutritional Profiles in Healthy Products containing black cumin seed oil in the Thai Market"**
10:50 – 11:00	**3. Paper ID: HST24117** **Presenter: Mr. Fakrutdin tapohtoh** – Prince of Songkla University, the Halal Science Center Chulalongkorn University, Thailand **Title: "Factors influencing young customers' purchase intentions for Ready-to-eat Halal food products in Pattani Province"**	10:35 – 10:40	**2. Paper ID: HST24143** **Presenter: Ms. Ketsaree Klinsukhon –** Kasetsart Agricultural and Agro-Industrial Product Improvement Institute, Thailand **Title: "Evaluation of the effect of extraction method on chemical composition and antioxidant activity of the lime essential oil"**
11:00 – 11:10	**4. Paper ID: HST24123** **Presenter: Assoc. Prof. Dr. Moohamad Ropaning Sulong –** Universiti Islam Sultan Sharif Ali, Brunei **Title: "Awareness and Knowledge of Bruneians Towards Microplastics in Food"**	10:40 – 10:45	**3. Paper ID: HST24111** **Presenter: Dr. Diky Faqih Maulana –** UIN Sunan Kalijaga, Indonesia **Title: "User Perception Analysis of Sihalal App: A Tam Approach in Indonesia"**

Day 2: December 20, 2024 (FRIDAY)			
Time	**Grand Meroz Room IHSATEC2024; 17th HASIB**	**Time**	**Archway IHSATEC2024; 17th HASIB Poster session**
11:10 – 11:20	**5. Paper ID: HST24149 Presenter: Mr. Mohd Nurhadi Hamsar –** Universiti Putra Malaysia **Title: "Meat Detective: Tackling Meat Adulteration Using Chemical Probe as Specific Detector of Porcine Peptide"**	10:45 – 10:50	**4. Paper ID: HST24121 Presenter: Mrs. Nor Nadiha Mohd Zaki** – Universiti Putra Malaysia **Title: "Application of Artificial Intelligence in Food and Agriculture: A Bibliometric Analysis"**
11:20 – 11:30	**6. Paper ID: HST24130 Presenter: Ms. Latifah Hannani Haji Md Jini –** Universiti Islam Sultan Sharif Ali, Brunei **Title: "Biodegradable Packaging in Brunei: Assessing Viability and Understanding Barriers to Eliminate Single-Use Plastic"**	10:50 – 10:55	**5. Paper ID: HST24122 Presenter: Dr. Ahmad Maulidizen –** Universitas Ary Ginanjar, Indonesia **Title: "Leveraging the Concept of a Meaningful Journey to Develop Halal Tourism in Indonesia: Study Case at ESQ Tour and Travel"**
11:30 – 10:40	**7. Paper ID: HST24116 Presenter: Mrs. Aina Fariha Mohamad Hussaini -** Universiti Teknologi Mara, Malaysia **Title: "From Ingredients to Integrity: A Comprehensive Review of Porcine Detection Methods in Cosmetics"**	10:55 – 11:00	**6. Paper ID: HST24144 Presenter: Dr. Chenda Ly –** SkinMedics Clinic, Philippines **Title: "The Anatomy Study of the Facial Temporal Region, Age 25-50, in Thai Population Based on Ultrasound Investigation"**
11:40 – 11:50	**8. Paper ID: HST24129 Presenter: Mrs. Aimi Shafinaz Binti Shaharudin -** Universiti Teknologi Mara, Malaysia **Title: "From Lab to Plate: Navigating Contamination Risks in Cultivated Meat Production"**	11:00 – 11:05	**7. Paper ID: HST24133 Presenter: Mr. Amarul Arief Mohd Shuhaimi -** University of Newcastle, Australia **Title: "Bridging Standards: How Australian Food Companies Navigate Halal Certification in Non-Muslim Markets"**

Day 2: December 20, 2024 (FRIDAY)			
Time	**Grand Meroz Room** **IHSATEC2024; 17th HASIB**	**Time**	**Archway** **IHSATEC2024; 17th HASIB** **Poster session**
11:50 – 12:00	**9. Paper ID: HST24151** **Presenter: Ms. Nadia Mira Kusumaningtyas -** Universitas Darussalam Gontor, Indonesia **Title: "Formulation of Amylopectin from Durian Peel and Carrageenan as a Potential Halal Capsule Alternative"**	11:05 – 11:10	**8. Paper ID: HST24150** **Presenter: Mr. Andi Subhan Husain -** Chulalongkorn University, Thailand **Title: "Islamic Social Finance for Refugee Livelihoods: Exploring Thailand's Policy Innovation"**
12:00 – 12:20	**Oral and Poster presenters** receiving a certificate	11:10 – 11:15	**9. Paper ID: HST24154** **Presenter: Mrs. Nor Surilawana Sulaiman -** Halalan Thayyiban Research Centre, Universiti Islam Sultan Sharif Ali, Brunei **Title: " Valorisation of Food Waste into Sustainable Halal Pet Food"**
		10:20 - 11:00	• **Cluster 4: Science, Technology, and Innovation** **Chairperson 1: Prof. Ts. Dr. Suraini Abd Aziz,** Professor at Faculty of Biotechnology & Biomolecular Sciences, Universiti Putra Malaysia **Chairperson 2: Asst. Prof. Dr. Sukrit Sirikwanpong,** Lecturer, Department of Nutrition and Dietetics Chulalongkorn University, Thailand
		10:30 – 10:35	**10. Paper ID: HST24146** **Presenter: Ms. Suwaibah Sulong -** The Halal Science Center, Chulalongkorn University, Thailand **Title: "Development of Omega-3 Enrich Halal Plant-based Snack : AI-Driven Nutritional Optimization of Halal Snacks from Local Thai Crops:**

Day 2: December 20, 2024 (FRIDAY)			
Time	**Grand Meroz Room IHSATEC2024; 17th HASIB**	**Time**	**Archway IHSATEC2024; 17th HASIB Poster session**
			A Framework for Advancing SMEs in Product Design and Commercialization"
		10:35 – 10:40	**11. Paper ID: HST24147 Presenter: Dr. Norli L. Aidasani -** Department of Science and Technology-Industrial Technology Development Institute, Philippines **Title: "Comparative Analysis of Plant Protein Profiles from Cowpea (Vigna unguiculata) and Pigeon Pea (Cajanus cajan)"**
		10:40 – 10:45	**12. Paper ID: HST24148 Presenter: Mr. Sarin Chaovasuteeranon -** The Halal Science Center, Chulalongkorn University, Thailand **Title: "Characterization of Chitin Extracted from Apple Snail (Pomacea canaliculata) Shells: A Preliminary Study for Chitosan Production"**
		10:45 – 10:50	**13. Paper ID: HST24157 Presenter: Ms. Suwaibah Sulong -** The Halal Science Center, Chulalongkorn University, Thailand **Title: "Characterization of Legume-Derived Plant Milks: A Nutritional and Functional Analysis"**

Day 2: December 20, 2024 (FRIDAY)			
Time	**Grand Meroz Room** **IHSATEC2024; 17th HASIB**	**Time**	**Archway** **IHSATEC2024; 17th HASIB** **Poster session**
		10:50 – 10:55	**14. Paper ID: HST24158** **Presenter: Ms. Chitaporn Pratan -** The Halal Science Center, Chulalongkorn University, Thailand **Title: "Practical IoT Training for Thai Smart Farmers: Controllers and Sensors in Agriculture"**
		10:55 – 11:00	**15. Paper ID: HST24156** **Presenter: Dr. Setyowati Triastuti Utami** - Universitas Gadjah Mada, Indonesia **Title: "Global Trends for Candida albicans CDR1 Resistance: A Bibliometric and Content Analyses"**
		12:00 – 12:20	**Poster presenters** receiving a certificate at Grand Meroz room
12:00 – 14:00	Lunch and Jumaat prayer		

Day 2: December 20, 2024 (FRIDAY)	
Time	**Grand Meroz Room** **IHSATEC2024; 17th HASIB**
14:00 – 15:00	**Session 7:** **Fostering Collaboration and Establishing Academic Networks between Thailand and GCC Countries: Exploring Partnerships and Technology Transfer Opportunities** **Chairperson: Dr. Anat Denyingyhot,** Assistant Director, The Halal Science Center, Chulalongkorn University (HSC-CU), Thailand **Speaker:** 1. **Assoc. Prof. Dr. Nasser Al-Habsi,** Assistant Dean for Postgraduate Studies & Research Dept. Food Science and Nutrition, Sultan Qaboos University, Oman ***Title: Innovative Utilization of Date Fruit and Pits: Unlocking Value from By-Products*** 2. **Eng. Hamad Al-Mansour,** Associate Research Scientist at the Environment and Life Sciences Research Center, KISR, Kuwait ***Title: Establishment of Halal Testing Laboratory at KISR*** 3. **Assoc. Prof. Dr. Srawut Aree,** Director of Muslim Studies Center of Chulalongkorn University, Thailand ***Title: Thailand and GCC: Partnership in Progress*** **Panel Discussion, Question and Answer session**
15:00 –15:30	Tea/Coffee Break
15:30 – 16:00	**Award Ceremony** • **Halal SMEs award** • **Young Halal Innovators Project** • **IHSATEC2024 awards**
16:00 – 16:30	**Closing Ceremony**
End of Conference	

CONFERENCE PROGRAM -VIRTUAL SESSION

Thursday | December 19, 2024

THAILAND HALAL ASSEMBLY2024

INTERNATIONAL CONFERENCE
งานประชุมวิชาการด้านวิทยาศาสตร์ และนวัตกรรมฮาลาลนานาชาติ
19-20 DECEMBER 2024 at Al Meroz Hotel Bangkok

Conference Program

Day 1: December 19, 2024 (THURSDAY)			
Time	**Online Presentation Session - Breakout Room IHSATEC2024; 17th HASIB**	**Time**	**On-Site Session Main Room IHSATEC2024; 17th HASIB**
14:00 – 15:50	**Academic Online Presentation Session**	14:00 – 14:10	**Global Research Ecosystem Introduction by Dr. Hendrati Dwi Mulyaningsih.** Co-Chair of IHSATEC 2024: 17th HASIB (Academic), Founder & Chairperson of Research Synergy Foundation
14:00 – 14:10	**Announcement and preparation of Academic Online Presentation Session**		**Session 3: Oral Presentation (OP) Science, Technology, and Innovation** *(8 min presentation + 2 min Q&A)*
14:10 – 14:20	**Session Chairs Introduction of Online Presentation: Prof. Jalaloden Bansil Marohom– University of Southern Mindanao, Philippines**	14:10 – 14:15	**Welcoming Academic Presentation and Group Photo**
14:20 – 14:35	**1. Paper ID: HST24125 Presenter: Siti Majidah Rahim - Halalan Thayyiban Research Centre (UNISSA) Title: "Investigating Muslim Consumer Perceptions and Attitudes in Brunei Darussalam Towards Current Trends in Personal Care and Cosmetics Acquired by Personal Shoppers (PS) from Non-Muslim Countries"**		**Chairperson 1: Prof. Dr. Sirichai Adisakwattana,** Head of Phytochemical and Functional Food Research Unit for Clinical Nutrition, Chulalongkorn University, Thailand
14:35 – 14:50	**2. Paper ID: HST24137 Presenter: Siti Majidah Rahim - Halalan Thayyiban Research Centre (UNISSA) Title: "Analysis of Halal Certification System Value Chain in Brunei: A Comprehensive Ecosystem Perspective"**		**Chairperson 2: Dr. Simab Kanwal,** Institute of Nutrition, Food Chemistry Unit, Mahidol University, Thailand
			Chairperson 3: Prof. Dr. Ahmed M. Youssef, Professor of Packaging and Packing materials, National Research Center, Dokki, Cairo, Egypt.
			Academic presenter:

Day 1: December 19, 2024 (THURSDAY)			
Time	**Online Presentation Session - Breakout Room IHSATEC2024; 17th HASIB**	**Time**	**On-Site Session Main Room IHSATEC2024; 17th HASIB**
14:50 – 15:05	**3. Paper ID: HST24147 Presenter: Norli L. Aidasani - Department of Science and Technology -Industrial Technology Development Institute Title: "Comparative Analysis of Plant Protein Profiles from Cowpea (Vigna unguiculata) and Pigeon Pea (Cajanus cajan)"**	14:15 – 14:25	**1. Paper ID: HST24110 Presenter: Atika Yahdiyani Ikhsani -** Universitas Islam Negeri Sunan Kalijaga, Indonesia **Title: " Functional Properties and Nutritional Value of Local Hyacinth Bean (Lablab purpureus (L.) Sweet) Protein Isolate: A Potential Halal Ingredient Substitute"**
15:05 – 15:20	**4. Paper ID: HST24101 Presenter: Duaa Mughal -** Industrial Analytical Center HEJ ICCBS University of Karachi, Pakistan **Title: " Comparative Study Between Raw Pork Meat and Pork Fat: Determining the Minimum Limit of Detection of Porcine DNA in Halal Food Mixture Utilizing Real-Time (polymerase chain reaction) Taqman Probe Technique."**	14:25 – 14:35	**2. Paper ID: HST24128 Presenter: Ayesha Shiddika Afsana -** Bangladesh Livestock Research Institute, Savar, Dhaka **Title: "Isolation and Identification of Lactic Acid Bacteria from Local Dahi for the Development of Probiotic Starter Culture"**
15:20 – 15:35	**5. Paper ID: HST24103 Presenter: Natasha Abbas Butt -** Department of Biomedical Engineering, Ziauddin University, Karachi, Pakistan **Title: " Halal and GMO: Detection of Genetically**	14:35 – 14:45	**3. Paper ID: HST24153 Presenter: Supharada Khaisaat -** Chiang Mai University, Thailand **Title: "Production of chitooligosaccharides with anti-Alzheimer's and antioxidant potential from Mantis Shrimp (Oratosquilla nepa) Shell using enzymatic hydrolysis"**

Day 1: December 19, 2024 (THURSDAY)			
Time	**Online Presentation Session - Breakout Room IHSATEC2024; 17th HASIB**	**Time**	**On-Site Session Main Room IHSATEC2024; 17th HASIB**
	Modified Organisms (GMO) in Halal Food by Products"		
15:35 – 15:50	**6. Paper ID: HST24128 Presenter: Ayesha Shiddika Afsana -** Bangladesh Livestock Research Institute, Savar, Dhaka **Title: "Isolation and Identification of Lactic Acid Bacteria from Local Dahi for the Development of Probiotic Starter Culture"**		
15:50 – 16:05	**7. Paper ID: HST24113 Presenter: Usman Mir Khan -** University of Agriculture, Faisalabad, Pakistan **Title: "Halal plant-based gelatin production, authentication and implementations"**		
16:05 – 16:20	**8. Paper ID: HST24112 Presenter: Anam Latif -** Institute of Food Science & Nutrition, University of Sargodha, Pakistan **Title: "Development of Halal Antimicrobial Agents From Plants: Prospects to Halal Nutritional Framework"**		

Day 1: December 19, 2024 (THURSDAY)			
Time	**Online Presentation Session - Breakout Room IHSATEC2024; 17th HASIB**	**Time**	**On-Site Session Main Room IHSATEC2024; 17th HASIB**
16:20 – 16:30	**Awarding Certificate of Presentation, Testimonial, and Post-conference information announcement.**		

Track:
Artificial Intelligence

Development of Omega-3 Enrich Halal Plant-based Snack : AI-Driven Nutritional Optimization of Halal Snacks from Local Thai Crops: A Framework for Advancing SMEs in Product Design and Commercialization

| Suwaibah Sulong[1], Hasam Chebako[2], Firadaw Boonmalert[3], Sarin Chaovasuteeranon[4], Winai Dahlan[5], Kasinee Katelakha[6]

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Abstract

Background – Although shrimp and fish chips are popular among consumers, some individuals are allergic to seafood-based products. The primary advantage of these chips over plant-based alternatives is their higher protein and omega-3 content.

Purpose – The aim of this study was to develop a plant-based chip with protein and omega-3 content comparable to that of seafood-based chips available on the market.

Design/methodology/approach – The master formula was generated using the AI-driven ChatGPT platform, with prompts designed to optimize the ingredient composition. The resulting formula was prepared and tested. The nutritional profile of the product was calculated by ChatGPT and was then compared with results obtained from proximate analysis to validate its performance.

Findings – The master formulation comprises of taro (50.0%), tapioca starch (30.0%), Wolffia globosa (5.0%), perilla seed oil (1.0%), garlic (1%) salt (0.8%) and natural color (1.0%) which provide a nutrient-rich, plant-based alternative healthier snack. Utilizing AI, the nutritional profile was optimized, resulting in a low-fat, high-fiber product with no added sugar and moderate sodium levels. The taro chip was prepared according to the formula provided by AI and the nutrition fact was calculated using AI compared to those that were analyzed with laboratory-based proximate analysis. The result found that each 35g serving delivers approximately 106 kcal. This formulation offers a low-calorie, plant-based snack with moderate carbohydrates, low fat, and added omega-3 benefits.

Research limitations – Comprehensive shelf-life studies were not conducted, which could impact the product's quality, stability, and market acceptance.

Originality/value – The analysis highlights the competitive advantage of incorporating AI in nutritional optimization, enabling the creation of snacks that address both health and religious dietary needs.

Keywords: Plant-based snacks, AI-driven nutritional optimization, Halal food innovation, Omega-3 enrichment, AI-formulated snack

The Role of AI in Language Learning in the context of the 21st Century: Adaptive Learning Methods and Their Impact on learners and Personalized

| Naved Alam[1], Dr. Riaz Ahmad[2], Assistant Professor[3], Ms. Naveela Rehman[4], Prof. Tania Hossain[5]

[1,2,3,4]Aligarh Muslim University, Aligarh, [5]Waseda University, Japan

Abstract

Background – The Artificial intelligence (AI), which provides personalised educational experiences and adaptable learning methodologies, has revolutionised education in the twenty-first century, especially in the area of language acquisition. The ability of AI to customise instructional tactics and content to meet the requirements of specific learners is the main emphasis of this paper's analysis of the technology's function in language learning. This ability improves student engagement, retention, and overall learning results. The efficiency of important AI technologies in aiding language acquisition is investigated, including Natural Language Processing (NLP), machine learning techniques, and AI-powered chatbots. By enabling real-time modifications to course materials in response to student performance, these technologies facilitate personalised learning paths. Artificial intelligence (AI)-powered services like Babbel and Duolingo are prime examples of how customised exercises and tailored feedback can motivate language learners. The report also emphasises how AI benefits students by enhancing engagement and enabling them to concentrate on their own areas of weakness. It does, however, also address certain difficulties, such as worries about the privacy of data, the quality of the information, and the lack of human interaction—all of which are essential for comprehending context and culture. This study proposes that in order to improve educational efficacy, future AI technologies should attempt to blend human experience with sophisticated algorithms.

Purpose – 1. To investigate how language learning is being incorporated with AI technology. 2. To evaluate the effects on language learners using AI-driven adaptive learning. 3. To evaluate how individualized instruction helps students acquire languages more effectively.

Design/methodology/approach – Quantitive and Qualitative Analysis

Findings – The study comes to the conclusion that while AI-driven language learning has tremendous promise for individualised instruction, there are still some issues that need to be resolved before its full potential in a variety of learning contexts can be realised.

Research limitations – This study examines the research's main issues: artificial intelligence in personalized education, the effects of adaptive learning on students, and the function of AI technology in language acquisition.

Originality/value – This study provides an original viewpoint on how artificial intelligence is revolutionizing language acquisition, with important ramifications for multilingualism, individualized instruction, and international communication.

Keywords: AI, 21st-century education, personalised learning, adaptive learning, and language acquisition.

User Perception Analysis of SiHalal App: A TAM Approach in Indonesia

| Diky Faqih Maulana[1], Imelda Fajriati[2]

[1]UIN Sunan Kalijaga, [2]Halal Center UIN Sunan Kalijaga

Abstract

Background – In response to growing demand for halal-certified products in Indonesia, the Halal Product Assurance Organizing Agency introduced the SiHalal application to streamline the halal certification process for producers and service providers. As the country with the world's largest Muslim population, Indonesia requires accessible, user-friendly digital tools to support halal certification, essential for regulatory compliance and consumer trust.

Purpose – This study investigates the perception and behavioral intentions of halal product process assistants in using the SiHalal application. Specifically, it examines how perceived usefulness, perceived ease of use, attitude, perceived enjoyment, and image interactivity technology (IIT) influence users' intentions to adopt this digital platform, based on the Technology Acceptance Model (TAM).

Design/methodology/approach – Data was collected through a questionnaire distributed to 215 high performance halal product process assistants across Indonesia. The responses were analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS). This quantitative approach allowed for a comprehensive analysis of how each factor contributes to the overall acceptance and use of the SiHalal application.

Findings – The study's findings suggest that perceived ease of use and perceived usefulness are key predictors of users' attitudes toward SiHalal. Additionally, IIT significantly contributes to perceived enjoyment and positive attitudes, underlining the importance of user-friendly design and interactivity for enhancing engagement. A positive attitude toward SiHalal was found to strongly correlate with increased behavioral intention, emphasizing that ease of use, visual engagement, and perceived benefits are crucial to fostering consistent application use.

Research limitations – This study is limited to halal product process assistants within Indonesia, which may affect the generalizability of its findings to other user groups or regions. Further research is recommended to assess the applicability of these results in broader contexts or among different stakeholders.

Originality/value – This study contributes to the understanding of Islamic fintech acceptance within specialized, religiously sensitive contexts, demonstrating TAM's effectiveness in exploring technology adoption for halal certification. By integrating TAM with IIT, this research provides a valuable framework for evaluating digital solutions designed for regulatory purposes, with implications for similar applications in global halal markets.

Keywords: Technology Acceptance Model (TAM), SiHalal Application, Halal Certification, Image Interactivity Technology (IIT)

Practical IoT Training for Thai Smart Farmers: Controllers and Sensors in Agriculture

| Komalaporn Kummalue[1], Chitaporn Pratan[*2], Sulaiya Piemchaiwat[*3], Suepphong Chernbumroong[4], and Tama Duangnamol[5]

[1]SunSpace Farm, Chiang Mai, Thailand, [2,3]The Halal Science Center, Chulalongkorn University, Bangkok, Thailand, [4,5]Department of Digital Technology Management, College of Arts, Media and Technology Chiang Mai University, Thailand.

Abstract

Background – Current training methods for Thai farmers face significant challenges in applying modern technologies like the Internet of Things (IoT) to agriculture. Key obstacles include a lack of hands-on practice, a disconnect between theory and real-world application, and a persistent digital divide among farmers.

Purpose – To address these challenges, the "Practical IoT Training for Thai Smart Farmers: Controllers and Sensors in Agriculture" course has been integrated with an innovative "EduKit" approach. This aims to enhance Thai farmers' skills in leveraging IoT technology to improve agricultural efficiency and sustainability.

Design/methodology/approach – The course places a strong emphasis on hands-on training with IoT controllers and sensors within real farm environments, applying Experiential Learning principles through the use of specially designed EduKits. These kits offer interactive, practical experiences with IoT devices, allowing farmers to experiment and learn in a structured, hands-on manner. By incorporating Constructivist Learning Theory, the course encourages active engagement, allowing learners to build knowledge through solving real-world agricultural problems.

Findings – This method bridges the gap between theoretical knowledge and its practical application, making complex IoT concepts more accessible to farmers. The course also employs a Blended Learning approach, combining online theoretical lessons with field-based practical training using the EduKit. This ensures that learners gain both the necessary theoretical foundation and the practical skills needed for application in real agricultural settings.

Research limitations – The abstract does not specify particular limitations encountered in the research or training process.

Originality/value – The integration of the EduKit-based training with both hands-on experience and theoretical learning represents an innovative approach to addressing the digital knowledge gap among Thai farmers and promoting the adoption of smart farming solutions. Upon completion, participants will be equipped to implement these solutions using the skills learned from the EduKit-based training.

Keywords: Internet of Things (IoT), Edukit, Experiential Learning, Constructivist Learning, Blended Learning

Track: Bioactive Compounds

Production of Chitooligosaccharides With Anti-acetylcholinesterase and Antioxidant Properties From Chitosan Using Enzymatic Hydrolysis

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Abstract

Background – Chitooligosaccharides (COS) are bioactive compounds with notable anti-acetylcholinesterase and antioxidant properties, making them promising candidates for functional food and therapeutic applications. However, the optimization of production conditions to enhance their bioactivity has been insufficiently explored, particularly for COS derived from chitosan

Purpose – This study aims to optimize the production of COS from chitosan to maximize their anti-acetylcholinesterase activity, antioxidant properties, and yield using response surface methodology (RSM).

Design/methodology/approach – A face-centered composite design within the RSM framework had been applied to evaluate the effects of hydrolysis duration (60, 180, and 300 minutes) and papain enzyme concentration (0.01%, 0.03%, and 0.05%) on AChE inhibitory activity, ABTS radical scavenging activity, and COS yield.

Findings – The study demonstrated that optimizing hydrolysis conditions for chitooligosaccharide (COS) production from chitosan had significantly enhanced their bioactivity, addressing a critical gap identified in the background. The optimized COS exhibited notable anti-acetylcholinesterase activity (9.31 ± 2.80% to 30.18 ± 2.05%) and ABTS radical scavenging activity (9.38 ± 0.27% to 38.20 ± 0.32%), with yields ranging from 72.62 ± 1.41% to 92.05 ± 3.01%. The results underscored the importance of enzyme concentration and hydrolysis duration in improving COS bioactive properties for functional and therapeutic applications.

Research limitations – The limitations of this study include its focus on only hydrolysis duration and enzyme concentration, excluding other potential factors, and its reliance on papain as the sole enzyme, which may not represent broader enzymatic effects on COS properties.

Originality/value – This study provides a novel approach to optimizing chitooligosaccharide production from chitosan by enhancing its anti-acetylcholinesterase and antioxidant properties through a systematic evaluation of hydrolysis conditions. The use of response surface methodology (RSM) to determine optimal enzyme concentration and hydrolysis duration offers significant insights into maximizing COS bioactivity and yield. The findings contribute to the potential applications of COS in functional foods and therapeutic interventions, highlighting their efficacy as bioactive compounds.

Keywords: chitooligosaccharides (COS), chitosan, acetylcholinesterase, enzymatic hydrolysis, antioxidants

Evaluation of the Effect of Extraction Method on Chemical Composition and Antioxidant Activity of the Lime Essential Oil

| Ketsaree Klinsukhon[1], Udomlak Sukatta[2]*, Prapassorn Rugthaworn[3], Surisa Sakayaroj[4], Nutthaporn Presunthiah[5], Apisara Bungarat[6], Pilanee Vaithanomsat[7], Jaruporn Rakmai[8]

[1,2,3,4,5,,6,7,8]Kasetsart Agricultural and Agro-Industrial Product Improvement Institute

Abstract

Background – Lime Citrus aurantifolia (Christm. et Panz.) Swing is gaining increasing recognition for its economic and medicinal value. Lime peels, often regarded as waste, constitute approximately 20% of the raw processed fruit and represent a potential source of valuable by-products. The essential oils extracted from lime peels are widely utilized in the perfume, beverage, and food industries, as well as for medicinal purposes, due to their antioxidant properties, which are primarily attributed to compounds such as terpenes.

Purpose – This research aims to determine the efficacy of various extraction techniques (WS, SFE, ME) on lime peel essential oils and their antioxidant properties.

Design/methodology/approach – In this study the effect of extraction methods on chemical and antioxidant activity of lime peel oil was investigated. The essential oil from lime peels was extracted using three different methods, including water and steam distillation (WS), supercritical CO2 extraction (SFE) and microwave extraction (ME). The chemical composition of the extracted essential oils was analyzed using gas chromatography-mass spectrometry (GC-MS) with a DB-5MS column. The antioxidant activity of the essential oils and their main components: limonene, β-pinene, and γ-terpinene were evaluated using 2,2-diphenyl-1 picrylhydrazyl (DPPH) assay and 2,2-azinobis (3 ethylbenzothiazoline-6-sulfonic acid (ABTS) assay.

Findings – The highest oil yield was obtained from SFE (3.03±0.48%) followed by WS (1.21±0.05%) and ME (0.45±0.12%), respectively. The major components of the lime essential oils from all extraction methods were similar, with D-Limonene, γ-terpinene, and β-pinene being the main identified compounds. D-limonene is the dominant compound with concentrations of 43.55±0.76%, 42.74±0.37%, and 33.06±1.49% in WS, SFE, and ME, respectively. The essential oil obtained by SFE exhibited the highest activity in both DPPH and ABTS (IC50 of 8.45±0.19 mg/ml and 133.82±0.61 mg/ml, respectively) followed by essential oil obtained by ME and WS. followed by essential oil obtained by ME and WS. The compound γ-terpinene significantly contributed to antioxidant activity, showing IC50 values of 42.20±3.04 and 205.27±1.48 mg/ml in the DPPH and ABTS assays, respectively.

Research limitations – Lime peels from Citrus aurantifolia were extracted using various methods (WS, SFE, ME) to assess their antioxidant properties. Other lime varieties may exhibit different chemical compositions and antioxidant properties.

Originality/value – This study may lead to more efficient and sustainable lime peel oil extraction.

Keywords: Lime oil, antioxidant, DPPH, ABTS, and GC-MS

Track: Biotechnology

From Lab to Plate: Navigating Contamination Risks in Cultivated Meat Production

| Aimi Shafinaz Binti Shaharudin[1], Dr. Nur Farhani Zarmani[2], Dr. Mohammad Naqib Hamdan[3], Noramin Mohd Noor[4]

[1,2,3]Universiti Teknologi MARA (UiTM), [4]Global Haltech Sdn. Bhd.

Abstract

Background – The commercialization of cultivated meat presents innovative solutions to global food security while posing unique challenges, such as the absence of clear guidelines for safety and halal compliance criteria for cultivated meat.

Purpose – This paper explores identifying potential halal control points (HCPs) in cultivated meat production, focusing on potential risks at pre-processing, during and post processing of cultivated meat.

Design/methodology/approach – This study employs a qualitative, exploratory research approach comprising two main components: data collection and analysis. Data were gathered in 2022 through qualitative interviews with subject matter experts from Malaysia and Singapore. Thematic analysis, supported by Atlas.ti software, was used to organize and interpret the interview transcripts effectively.

Findings – The potential halal control points (HCPs)include the source of animal cells, growth medium, additives, and safety. For example, if animal cells come from non-halal sources, the product is considered non-halal. Safety concerns, such as the possibility of cancerous cell growth, also arise. Cultivated meat is a complex biotechnological product requiring strict halal and safety controls. Every production stage must be carefully studied and tested to ensure compliance and safety.

Research limitations – This study focuses on Malaysia and Singapore, despite the global presence of cultivated meat industries that could be explored through observation. In Malaysia, guidelines will be developed based on local legal frameworks, though they can be applied globally, aligning with Islamic principles. Singapore, as the only country to approve the sale of cultivated meat, has established production guidelines. The experts involved include specialists in cultivated meat production and halal and Shariah issues, selected based on specific inclusion criteria.

Originality/value – This study does not analyze the rulings on cultivated meat but refers to existing fatwas and previous research. It also does not focus on Muslim acceptance or the scientific production of cultivated meat, leaving these areas for future research.

Keywords: Cultivated meat, Halal control points, Risk management

Halal and GMO : Detection of Genetically Modified Organisms(GMO) in halal food by products

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Abstract

Background – The concept of GMO (Genetically Modified Organisms) in Halal (permissible) food is a critical area. To ensure Halal compliance Muslim-majority countries / organizations have established guidelines in food and feed for GMOs, but guidelines for utilization of food byproducts needs some attention.

Purpose – Present research aimed towards utilizing by-products produced from food i.e. Potato Peel (PP), Papaya Seeds (PS) &Corn Silk (CSK) and utilizing it for the tracing of GMO status as well as quantification and comparison of DNA extraction techniques.

Design/methodology/approach – A comprehensive analysis for detection of GMO accompanied with DNA quality and PCR amplification was performed by using RT-PCR . Three samples were selected and dried followed by three different homogenization techniques viz tissue Lyzer (TL), Liquid Nitrogen (LN), and Lab Grade Grinder (LG). The homogenized samples were then used for the extraction of DNA using the protocol provided by the kit. All three homogenization techniques were also compared to determine the technique that gave the highest amount of extracted DNA. Fluorometric assay was performed for quantification of the extracted DNA. The quality of the DNA was accessed on 1.5% agarose gel.

Findings – Among the three homogenization techniques used, Tissue Lyzer (TL) gave the highest yield of extracted DNA in all samples i.e. 3.6 (PS),75.1(LN) 0.62(PP). The end result showed that the chosen samples were all GMO-negative since every sample that underwent PCR testing revealed the absence of any genetic modification. Peaks observed at Ct values of 30.38,30.82,30.21& 30.07 were identified as positive controls for the kit.

Research limitations – Our research limitation was extended upto only few samples for detection of GMO in food wastage that is utilized in many food / non food products. However utilizing large no. of food samples or those products that was produced by food wastage might open new gates of research. Due to time limitations it was not possible to analyze extensively sample of broad range.

Originality/value – Present investigation is free from plagiarism. Outcome of this study can be used by policy makers to incorporate in implementing and updating new regulations in GMO. Implications of this study is diverse including public health, biotechnology, halal and much more.

Keywords: Genetically modified organism (GMO), quantitative PCR (qPCR), Tissue lyzer, Halal food, Food wastage

Comparative Study Between Raw Pork Meat and Pork Fat: Determining the Minimum Limit of Detection of Porcine DNA in Halal Food Mixture Utilizing Real-Time (polymerase chain reaction) Taqman Probe Technique.

| Duaa Mughal[1], Syeda Areeba[2], Dr. Shakil Ahmed[3], Dr. Ishtiaq Ahmed[4]

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Abstract

Background – Authenticity of halal food is vital for ensuring the tranquillity of consumers, particularly among Muslims. A practical scientific approach has been developed and implemented for the detection of raw porcine as well as pork fat.

Purpose – The purpose of the study is to detecting minimal limit of Pork fat DNA with in halal food mixture using Real-time PCR analysis. Purpose is to find minimum LOD 0.01% and 0.001% of pork fat DNA in mixture of halal meat sample containing chicken, bovine and camel meat.

Design/methodology/approach – In this paper comparative analysis based on DNA isolated through Raw Pork meat and pork fat was done. DNA of camel, chicken and beek were extracted using Qiagen DNeasy Mericon Food Kit. Sample collection was done from local market. Meat of chicken, camel and bovine was collected from local market and pork fat was obtain from custom sample. 0.1%, 0.01% and 0.001% of pork fat was mixed in halal food mixture. The objective of the results was Real time PCR analysis for detecting minimal LOD of pork fat in halal food mixture. Identification of DNA band size of pork meat and pork fat was done by gel electrophoresis. Results validation was done by repeatability of test.

Findings – Interpretation of the result was 0.001% of pork fat can be detected by Real time PCR and consider as minimum limit of detection (LOD). In this research, minimum limit of detection (LOD) of pork fat in halal food mixture was detected. The band size of raw DNA is more visible as compare to pork fat.

Research limitations – Time limitation is the research limitation in this study. In this study DNA was successfully extracted from raw Pork meat and pork fat but the amount of DNA can be more if we use manual method of DNA extraction. Manual method is more time consuming as compare to kit based extraction method.

Originality/value – This research can be use for halal authentication. This study was the first to identify the minimum limit of detection of pork fat in halal food mixture sample. Finally, the outcomes of this study can be used as a reference for Halal authentication in mixed food sample.

Keywords: Pork fat, Raw Pork meat, DNA Isolation, Porcine DNA quantification, limit of detection (LOD)

Track:
Cosmetic Science

Investigating Muslim Consumer Perceptions and Attitudes in Brunei Darussalam Towards Current Trends in Personal Care and Cosmetics Acquired by Personal Shoppers (PS) from Non-Muslim Countries

| Siti Majidah Rahim[1], Nor Surilawana Sulaiman[2], Zulfah Syauqina Muhamad[3], Latifah Hannani Md Jini[4]

[1,2,3,4]Halalan Thayyiban Research Centre (UNISSA), Brunei Darussalam

Abstract

Background – The rising trend of using personal shoppers (PS) to acquire personal care and cosmetic products from non-Muslim countries is becoming increasingly popular in Brunei Darussalam, particularly among young consumers. Fueled by the widespread use of social media platforms and live selling applications, consumers in Brunei can easily access global brands and products that may not be readily available in the local market. However, this trend raises critical concerns as many of these imported products lack halal certification, and there is a lack of rigorous assessment of ingredients by PS to ensure their compliance with halal standards.

Purpose – This study aims to explore the attitudes, perceptions the factors driving of Bruneian consumers, particularly the youth, toward non-halal-certified cosmetics acquired from non-Muslim countries through PS.

Design/methodology/approach – A mixed-methods approach, has been employed. The quantitative survey captures data on purchasing habits, brand perceptions, and the prioritization of halal certification among young consumers. Meanwhile, qualitative interviews with PS provide insights into their understanding and practices concerning ingredient verification and halal standards.

Findings – The findings reveal a strong preference among Bruneian youth for aesthetics and brand reputation when it comes to cosmetics. This preference is partly driven by the limited availability of halal-certified cosmetic products locally, compelling consumers to seek international brands via PS. Additionally, it was found that PS lack adequate knowledge and training in assessing halal compliance, often focusing on popular demand without checking ingredient suitability under halal standards.

Research limitations – This study is limited by its focus on the Bruneian market and may not fully represent the broader consumer dynamics in other Muslim-majority countries.

Originality/value – This research contributes valuable insights on the growing trend of non-halal-certified cosmetic consumption in Brunei. This research is relevant, in addressing a gap in the academic literature and providing actionable insights for policymakers and industry stakeholders aiming to strengthen the halal ecosystem in Brunei.

Keywords: Halal Cosmetics, Halal Certification, Youth Consumer Trends, Personal Shoppers, Brunei Darussalam

The Anatomy Study of the Facial Temporal Region, Age 25-50, in Thai Population Based on Ultrasound Investigation

| Chenda Ly[1], Sirintip Chaichalotornkul[2], Tawee Saiwichai[3], Thamthiwat Nararatwanchai[4], Chantawat Kasemnet[5]

[1]SkinMedics Clinic, [2]School of Anti-aging and Regenerative Medicine, [3]Faculty of Public Health, [4]School of Anti-aging and Regenerative Medicine, [5]Dr. Art Aesthetic Clinic

Abstract

Background – Aging, influenced by genetics and environment, affects facial tissues, including skin, fat, muscles, and bones. The temporal region is significant for both function and appearance. Many Thais are increasingly concerned about temporal depression, which can make them look older, and they seek to improve it through injections. This area is complex due to its layered structure and blood vessel pathways, posing challenges for safe aesthetic procedures. Advanced ultrasound imaging provides detailed views of the anatomy in this region, which is crucial for precise and safe injections.

Purpose – This study aims to use high-frequency ultrasound to map the depth and position of the deep temporal arteries and to explore the basic anatomy of the temporal region in Thai individuals aged 25 to 50, with a focus on structural variations.

Design/methodology/approach – This observational cross-sectional study included 33 Thai participants (aged 25 to 50) who had received filler injections or not. The study used high-frequency ultrasound (2.5 to 16.8 MHz hockey-stick probe) to map the vessels in the temporal region and measure the depth and position of the deep temporal artery and surrounding tissues. Ultrasound images were taken, and participants were surveyed about their satisfaction and any adverse effects.

Findings – The study involved 33 subjects (15.15% male, 84.85% female) with an average age of 33.42 years. It compared anatomical features between 10 subjects with hyaluronic acid filler injections (average duration: 32.4 months) and 23 subjects without fillers. Key findings showed variations in skin thickness, subcutaneous layers, SMAS layers, temporal bone, and temporalis muscle thickness at various depths and positions, indicating that filler injections impact the anatomy of the temporal region. The study also identified differences in the depth and position of the temporal artery between the two groups.

Research limitations – The small sample size and specific population limit the study's generalizability, and variations in ultrasound equipment and operator expertise may impact the results.

Originality/value – The intricate structure of the temporal region in the Thai population necessitates a clear understanding of the spatial arrangement of each tissue layer to enhance the effectiveness and safety of injectable temporal fillers. Ultrasound imaging aids in comprehending these details and supports therapeutic procedures.

Keywords: Temporal Region Anatomy, Deep Temporal Arteries, High-Frequency Ultrasound, Thai Population, Facial Aging

Track:
Digital Marketing

Targeted Halal Marketing's Information Impacting on Diverse Muslim Consumer Needs

| Manoon Tho-ard[1], Assist.Prof.Dr.Wassana Bootpo[2]

[1]Shinawatra University, [2]Faculty of Education, Ramkhamhaeng University, Thailand

Abstract

Background – The global Muslim consumer market is growing rapidly, driven by rising demand for halal products and services. Businesses must navigate diverse cultural, regional, and individual consumer expectations while leveraging digital technologies for targeted marketing. However, this raises ethical concerns, particularly regarding data privacy and cultural sensitivity. Despite the importance of halal marketing, comprehensive frameworks for ethical data use and personalization are lacking. This research addresses this gap by examining how information can shape effective halal marketing strategies, offering actionable insights to balance innovation with adherence to halal ethics, fostering trust and loyalty in a dynamic global market.

Purpose – 1) study expectation of Muslim's Information Impacting on Diverse Muslim Consumer Needs, 2) analyze information roles for creating the Targeted Halal Market impacting on Muslim consumers, and 3) suggest challenges and solutions in the ethical application of data for halal marketing.

Design/methodology/approach – The research methodologies applied qualitative research methods, including in-depth interviews with key stakeholders and analysis of consumer behavior trends focusing on the role of data in identifying unique consumer preferences and optimizing engagement strategies.

Findings – The findings revealed that data-driven personalization enhances consumer trust, fosters brand loyalty, and supports ethical practices by addressing cultural sensitivities. Furthermore, the study identified challenges such as data privacy concerns and the need for transparent data usage policies. By presenting case studies of successful halal marketing initiatives, this research provided actionable insights and a framework for businesses to implement personalized, data-informed strategies that not only meet consumer expectations but also uphold the principles of halal ethics resulting in contributing to the growing body of knowledge on digital halal marketing and offers practical recommendations for businesses to navigate the complexities of personalization in a dynamic, global marketplace.

Research limitations – Limitations 1. Cultural Diversity: May not fully reflect diverse Muslim preferences. 2. Generalizability: Findings may not apply universally to all Muslim consumers. 3. Market Dynamics: Rapid changes may affect long-term relevance. 4. Data Gaps: Limited data on consumer behavior and trends. 5. Narrow Focus: Emphasis on marketing may overlook other factors. 6. Stakeholder Input: Limited representation of industry perspectives.

Originality/value – 1. Integration of Data-Driven Personalization with Halal Ethics 2. Framework for Ethical and Effective Halal Marketing 3. Contribution to Digital Halal Marketing Knowledge

Keywords: Targeted Halal Marketing; Information; Muslim Consumer Needs, Health

Prankvertising from Islamic Marketing Perspective: A Case Study of Key Opinion Leader (KOL) Social Media Campaign

| Al Marifatul Ala[1], Intan Fitranisa[2]

[1,2]Universitas Airlangga

Abstract

Background – Social media and the touch of creativity influence all business sectors, including marketing strategy. This phenomenon also impacts Muslim market and Halal industry, where adherence to Islamic marketing principles is critical. Public polarization on social media directs massive market opportunity targeted by key opinion leader (KOL) to enlarge their reach in promoting specific products and brands where some might cross the ethics line. One such strategy, Prankvertising, raises potential conflicts with the Islamic marketing ethical framework. Therefore, initial research must be done to evaluate the strategy alignment with Islamic marketing principles.

Purpose – This study examines the processes and stages of Prankvertising campaigns on social media and assesses their alignment with Islamic marketing principles. It investigates whether the strategies and impact of the campaign - including public responses - adhere to or diverge from ethical guidelines rooted in Islamic values.

Design/methodology/approach – This study implements qualitative approach using a single-case instrumental case study method centered on specific campaign within defined timeframe. Primary data were gathered from social media content and comments using pseudonyms to emphasize roles over personal identities. Rigorous analysis techniques were employed, including triangulation and thematic coding.

Findings – The analysis of the prankvertising campaign identified four key phases: the initial act, public response, opportunity gimmick, and official advertisement release with the Brand Ambassador announcement. While some phases aligned with the purpose and fundamentals of Islamic marketing, several aspects deviated from these guidelines. The initial trigger content led to uncontrolled and polarizing reactions, diverging from Islamic marketing values like spiritual wisdom and the Falah (well-being) perspective. After the heightened public attention, the subsequent opportunity gimmick phase indicated lacking adherence to the principles of Ihsan (excellence and integrity) required by Islamic marketing ethics, indicating gaps in maintaining ethical consistency throughout the campaign.

Research limitations – The study's limitations arise from its reliance on data within a specific context timeframe on single-case instrumental design that may limit the generalizability of findings to other cases. Potential researcher bias in data interpretation could happen affecting the objectivity of the findings.

Originality/value – Previous studies analyzed Prankvertising as marketing phenomenon on humor perceptions while this study uniquely explores Prankvertising from Islamic marketing perspective.

Keywords: Prankvertising, Muslim influencer, Ethical marketing, Social media, Endorsement

Track:
E-Business

Securing Global Credibility: Examining Key Issues among Halal Certification Bodies (HCBs)

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Abstract

Background – Given the increasing global demand for halal products, this study provides valuable insights into the evolving role of HCBs within the international halal market.

Purpose – This article investigates the primary challenges faced by HCBs in maintaining credibility and sustaining recognition globally.

Design/methodology/approach – This research paper employs a qualitative approach, conducting in-depth interviews among HCBs of minority Muslim countries and analyzing the data using thematic analysis.

Findings – The research focuses on issues such as standardisation, trust, and cross-cultural engagement, as well as the strategic approaches employed by HCBs to address these challenges.

Research limitations – This paper limit the participants to only among HCBs of minority Muslim countries, which were recognized by JAKIM, Malaysia.

Originality/value – This study addresses a critical gap in understanding the operational and strategic issues faced by HCBs in achieving international recognition. Unlike prior research that primarily focuses on domestic halal certification frameworks, this paper uniquely investigates cross-border challenges and opportunities.

Keywords: Halal certification, credibility, global recognition, foreign certification bodies, standardization

Leveraging the Concept of a Meaningful Journey to Develop Halal Tourism in Indonesia: Study Case at ESQ Tour and Travel

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Abstract

Background – Indonesia has vast potential for developing its halal industry, particularly in sectors such as food, non-food products, and services. Halal tourism has become increasingly important due to its ability to cater to leisure, lifestyle, and personal well-being needs.

Purpose – This study explores the concept of a meaningful journey within the context of halal tourism and examines its strategic implementation by ESQ Tours and Travel Indonesia.

Design/methodology/approach – Utilizing a qualitative descriptive approach combined with a case study method, data were gathered through interviews, questionnaires, and documentation. Managerial representatives were selected via purposive sampling, and the data were analyzed using NVivo 12 Plus software to efficiently categorize and interpret the information.

Findings – The research reveals that the concept of a meaningful journey, specifically its focus on meaningfulness, is integral in shaping memorable tourism experiences. These experiences enhance participants' post-trip performance and strengthen their intention to revisit, making meaningfulness a key factor in halal tourism's continued engagement.

Research limitations – The study is limited to the case of ESQ Tours and Travel Indonesia, which may affect the generalizability of the findings to other halal tourism providers or regions.

Originality/value – This research contributes to the understanding of how fostering meaningfulness in travel experiences can create sustainable engagement in the growing field of halal tourism, offering practical insights for industry stakeholders.

Keywords: Halal Tourism Development, Meaningful Travel Experience, Halal Tourism in Indonesia, Spiritual Tourism Journey, Muslim-Friendly Travel Strategy

Factors Influencing Young Customers' Purchase Intentions for Ready-To-Eat Halal Food Products in Pattani Province

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Abstract

Background – Halal food, a part of the "Halal Economy," is suitable for all, including non-Muslims. The COVID-19 pandemic has transformed consumer food purchasing habits, particularly RTE food. This is particularly relevant in the digital age and amid increased food safety concerns, as it provides a quick and convenient solution for the pandemic. Young Muslim consumers under 30, comprising 60% of global Muslims, are growing in purchasing power. By 2030, they will require halal food that promotes ethnic cuisine, including prepared and RTE options.

Purpose – To determine the factors influencing to the purchase intention of RTE Halal food products among young consumers in the Pattani provinces.

Design/methodology/approach – This research employs a cross-sectional design, utilizing a questionnaire for data collection. The online survey was distributed to young consumers in Pattani province. Data analysis will involve statistical methods, including descriptive and bivariate analyses such as t-tests and ANOVA. A multiple linear regression model is used to examine the relationship between the dependent variable and the independent variables. All statistical analyses will be conducted using the R software.

Findings – A study revealed that several factors, including religious beliefs, education level, attitudes toward Halal quality, and perceptions of the Halal logo, significantly influence young consumers' intentions to purchase RTE Halal food products in Pattani Province. It was found that non-Muslim youth generally have lower purchase intentions for these products compared to their Muslim counterparts. Additionally, young consumers with only a high school or lower level of education tend to have less interest in buying RTE Halal food products compared to those with a bachelor's degree.

Research limitations – This study has limitations due to a small sample size, discrepancy between respondents' perceived knowledge of Halal and actual understanding, and external validity affecting the generalizability of the findings. Recognizing these limitations can improve interpretation and guide future research directions.

Originality/value – The findings of this study offer valuable insights into the relationship between personal factors, attitudes, and Halal knowledge and their impact on purchase intentions. This information can be beneficial for the Halal industry, government agencies, food producers, and businesses, as well as other relevant stakeholders, to enhance marketing strategies and better promote RTE Halal food products.

Keywords: Halal food, Halal knowledge, Attitude, Ready-to-eat food products, purchase intentions

Track: Environment Technological

Desiccation Cracking of Rice Husk and Crushed Coir Inclusions in Clay Soil as Biocover

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Abstract

Background – Brunei's main landfills—Sg. Paku, Rubada, and K37, face increasing municipal solid waste (MSW) generation, from 0.171 million tons in 2014 to 0.196 million tons in 2023, with Sg. Paku handling 86% of the total. With MSW averaging 1.19kg/capita/day, methane (CH4) emissions are a concern. Biocovers made from organic waste offer a sustainable solution by enhancing CH4 oxidation through methanotrophic bacteria that reside in the soil cover.

Purpose – Desiccation cracking compromises the long-term sealing performance of biocovers, allowing moisture migration into landfills. Clay's low permeability makes it suitable but prone to cracking when dried. This study examines rice husk (RH) and crushed coir (CC) inclusions in clay (CL) as biocover materials, focusing on cracking water content (Wcr), desiccation rate coefficients (k), and the number of cracks. Wcr refers to the water content at which cracking first appear. While, k indicates how quickly soil loses moisture.

Design/methodology/approach – The study examined inclusions at 0% (CL as control), 25%, 50%, and 75% of the dry unit weight of clay, with 5% aerobic wastewater sludge added to each sample. Desiccation cracking tests were performed following BS 1377: Part 2: 2018, using a polystyrene box setup and rectangular Perspex moulds (5 mm, 10 mm, and 15 mm thick) over 7 days under constant temperature and humidity, analysing cracking water content (Wcr), desiccation rate coefficients (k), and the number of cracks, all under constant temperature and humidity.

Findings – RH and CC inclusions influenced Wcr, k, and crack formation, with higher Wcr and fewer cracks indicating better performance. Increasing soil thickness decreased k values, even with inclusions. RH25 at 15 mm (Wcr 24.0%) performed well but had more cracks. CC50 showed a lower k at 5 mm (0.998 days^{-1}) than CL (1.499 days^{-1}), with no cracks for CC25 at 10 mm and CC50 at 15 mm. CC50 at 15 mm emerged as the best biocover for desiccation resistance.

Research limitations – The main limitation was the long intervals between measurements, introducing uncertainties. Hourly time-lapse tests with advanced cameras are recommended for greater accuracy.

Originality/value – The results of this study are valuable for environmental engineers, geotechnical specialists, and policymakers aiming to improve landfill management practices.

Keywords: Desiccation characteristics, biocover, landfill, clay, methane

Awareness and Knowledge of Bruneians towards Microplastics in Food

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Abstract

Background – Bioplastics, which are also known as tiny plastic fragments that left over after the breakdown of bigger plastic objects, have been detected in various habitats, including in freshwater, marine environments and even in daily food supply. The presence of bioplastics has raised concerns among scientist, environmental activists as well as publics about their effects human health particularly on food safety. There is a considerable knowledge gap regarding how certain populations, such as Bruneians, view and react to this newly developing environmental and public health concern, research on microplastics is expanding globally. Hence, the issue at hand is the shortage of thorough information about Bruneians' perceptions, awareness, concerns, and levels of knowledge regarding the presence of microplastics in food.

Purpose – The study aims to valuate Bruneians' present degree of knowledge and awareness about the possible presence of microplastics in food as well as to obtain the publics suggest tactics and legislative changes to encourage sustainable lifestyles and reduce the amount of microplastics in Brunei's food supply.

Design/methodology/approach – A mixed-methods strategy integrating both quantitative and qualitative procedures were used to accomplish the goal. A total number of 215 respondents with various educational backgrounds from 4 different Districts, namely Brunei-Muara, Tutong, Kuala Bliat and Temburong were selected.

Findings – The results of the study showed that 77.2% of respondents had knowledge about microplastics, while 22.8% of respondents answered no. As for the level of awareness among respondents that microplastics in the environment can be transferred through the food chain, the findings of the study show that 14.4% of respondents are very aware, 37.7% of respondents are aware. While 24.7% of respondents were not aware, 7% of respondents were very unaware and 18.1% of respondents chose neutral.

Research limitations – The unintentional bias encountered during data collection. Besides, time constraints for data collection. Other limitations of the study are that the number of respondents was not big enough.

Originality/value – The findings of this study also highlight the respondents concern and their suggestion where to reduce microplastic pollution in the food supply in Brunei, waste management practices need to be improved, and the using of sustainable packaging must be encouraged.

Keywords: Microplastics, Environment, Foods, Halalan, Thayyiban

Track:
Food Safety

Analysis of Halal Certification System Value Chain in Brunei: A Comprehensive Ecosystem Perspective

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Abstract

Background – Halal certification is a critical component in ensuring that food, beverages, and other products adhere to Islamic principles, enhancing consumer trust and promoting global trade opportunities. In Brunei Darussalam, halal certification is regulated by the Ministry of Religious Affairs (MoRA) and its Halal Food Control Division (HFCD). Despite the comprehensive system in place, challenges persist in ensuring its efficiency and adaptability to meet industry needs. Investigating the value chain of halal certification system in Brunei is essential to identify gaps and improve the system's effectiveness.

Purpose – This study aims to explore the halal certification system in Brunei by identifying its key processes, stakeholders, and challenges. The research seeks to highlight inefficiencies in the certification process and provide a comprehensive framework that maps the ecosystem, outlining the role of key contributors and their interconnections within the halal certification system.

Design/methodology/approach – The research adopts a qualitative approach, analyzing past literature and conducting interviews with experts in the field. The data is collected for 1 month. Then the data is analyse using content analysis. By mapping roles, identifying issues, and synthesizing findings, the study develops a comprehensive framework for Brunei's halal certification ecosystem.

Findings – The study identifies relevant agencies involved in the halal certification process, such as industry players and regulatory bodies. It highlights key issues, including procedural bottlenecks and limited coverage for cosmetics and pharmaceuticals. Recommendations are provided to streamline processes and enhance collaboration among stakeholder.

Research limitations – This research focuses primarily on halal certification for food and beverages, excluding cosmetics and pharmaceuticals, this is because these industries are less developed within Brunei's system. Furthermore, as the halal industry keeps on growing according to the ever-changing ecosystem, this research will be focused only on the current ecosystem. Limitations on the sample population.

Originality/value – The study introduces a novel ecosystem framework for Brunei's halal certification system, offering a holistic perspective that enhances understanding and supports systemic improvement.

Keywords: Value Chain, Halal Certification, Ecosystem, Brunei Darussalam

Developing an Assertive Halal Governance Framework for Internal Halal Committee Board in Halal Industry

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Abstract

Background – The halal certificate holder is responsible for any abuse or fraudulent use of the certificate subject to the law. However, despite having the standards, guidelines, regulations, and policies, a few businessmen were still found guilty. All those halal issues exist because the parties who deal with anything under the so-called halal have a lack of understanding of halal concepts, principles, and guidelines in executing certain matters diligently and faithfully.

Purpose – Therefore, this article aims to develop the Halal Governance Framework (HGF) for the Internal Halal Committee (IHC), which is crucial to ensuring that products and processes comply with Islamic dietary laws and principles.

Design/methodology/approach – The method applied in this study is the qualitative method by reviewing the pertinent documents to understand more halal governance. The study will also conduct interviews with a few halal supervisors of restaurants in order to gain an understanding of their roles and responsibilities. The data collected from the interview will be analysed using thematic analysis.

Findings – The findings show that most halal supervisors know and understand their roles and responsibilities in ensuring halal integrity. However, by establishing clear roles and responsibilities within the internal Halal committee, organisations can better navigate the complexities of Halal certification and ensure adherence to both regulatory and ethical standards. Hence, the development of HGF is crucial.

Research limitations – The research conducted was limited to Brunei, particularly Tutong district. However, the findings could be applied to any halal industry around the world. Moreover, the study also has methodological gaps where it only applied qualitative study of reviewing pertinent studies and interviewing a few halal supervisors. For future studies, the researcher should apply quantitative studies to get a better understanding of the roles and responsibilities of halal supervisors or internal halal committees, not just in restaurants, perhaps all the span of the halal industry, and also get interview sessions with authorities regarding the development of HGF.

Originality/value – Undeniably, the HGF is essential for fostering a sustainable Halal industry that meets the needs of consumers while upholding Islamic values. Furthermore, research on halal supervisors is scarce, specifically in Brunei. Hence, this study might provide valuable findings and insight.

Keywords: Halal, Halal Governance, Internal Halal Committee, Roles and Responsibilities

Isolation and Identification of Lactic Acid Bacteria From Local Dahi for the Development of Probiotic Starter Culture

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Abstract

Background – Dahi contains beneficial lactic acid bacteria (LAB) that enhance the texture, flavour, color, and safety of it. These LABs combat against foodborne pathogens and maintain intestinal well-being when included in a balanced diet.

Purpose – The current study aimed to isolate and identify the LAB from traditional Dahi at molecular levels while assessing their probiotic and safety properties for use as starter cultures of Dahi.

Design/methodology/approach – This study consists of two experiments. The first evaluated the probiotic and safety properties of four LABs: Lacticaseibacillus casei, Lacticaseibacillus paracasei, Lacticaseibacillus rhamnosus, and Limosilactobacillus fermentum, previously isolated from Dahi. The second experiment collected 30 Dahi samples from various regions of Bangladesh between March and December 2023, identified LAB isolates using MALDI-TOF/MS, and confirmed by 16s rRNA sequencing.

Findings – In 1st experiment, the LAB isolates exhibited suitable probiotic properties with a wide temperature tolerance (15–45 °C) and survived under acidic conditions (low pH 2-4), and bile salt. Survival rates ranged from 53.00-89.80%, with L. rhamnosus being the most tolerant. All isolates showed antibacterial activity against pathogens, with inhibition of 16.67–25.56 mm, where L. casei and L. rhamnosus were the most effective. The isolates were susceptible (17.56-43.43 mm) to five antibiotics but resisted norfloxacin and demonstrated auto-aggregation between 79.19-98.39%, with co-aggregation to E. coli at 43.57-78.20%. In 2nd experiment, 52 isolates from 30 Dahi samples in Bangladesh included 30 Lactobacillus spp., 19 Lactococcus spp., and 3 Pediococcus spp. MALDI-TOF MS profiling and 16s rRNA sequencing showed >98% similarity, confirming four genera: Lactobacillus, Limosilactobacillus, Pediococcus, and Lactococcus, with L. fermentum being the most (8 isolates), followed by L. plantarum and Lac. lactic (4 each), Ped. pentosaceus (3), and L. rhamnosus, L. casei, and L. acidophilus (2 each).

Research limitations – The study limits the evaluation of LAB isolates as a starter culture for Dahi production and its quality attributes, indicating a need for further research.

Originality/value – Traditional fermented Dahi is rich in probiotic LAB that can enhance its nutritional quality, safety, and shelf life. This study lays the foundation for selecting effective probiotics for developing starter cultures and improving preservation methods.

Keywords: Dahi, food safety, lactic acid bacteria,probiotics,starter culture

Application of Artificial Intelligence in Food and Agriculture: a bibliometric analysis

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Abstract

Background – This paper investigates Artificial Intelligence (AI)'s contributions to the food and agriculture sectors based on the rising urge for sustainable and efficient farming practices.

Purpose – This study attempts to review the literature on AI applications in agriculture and food security based on a bibliometric approach.

Design/methodology/approach – The analysis of bibliometrics involved 369 documents obtained from the Scopus database that highlight the importance of AI in agricultural sectors including resource management and yield optimization. The bibliographic coupling and co-word analysis were performed to visualize topics and authors' interrelations and performance.

Findings – The results show that the contribution of AI to the agriculture and food sectors improves crop productivity and overall food quality. Technology applications such as machine learning, deep learning, and IoT-based systems in these sectors facilitate the optimization of prediction and decision-making processes.

Research limitations – However, there are limitations to this study including data limitations, relatively more costly than traditional cost, and challenges in the adoption of AI in small-scale farmers.

Originality/value – This paper attempts to investigate the application of AI in both food and agricultural sectors, hoping to contribute to a novel understanding of the merger of digitalization into agriculture and foods. The future of agriculture and the food industry heavily depends on the integration of AI tools with traditional farming methods with fewer costs and user-friendly applications.

Keywords: AI, artificial intelligent, agriculture sectors, food sectors

Ensuring Halal Integrity and Food Safety in Sustainable Pesantren-Based SMEs: A Comprehensive HACCP and HGMP Approach

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Abstract

Background – The growing demand for halal-certified products, particularly in Indonesia, where Muslims form the majority, underscores the need for stringent food safety measures and halal integrity in Small and Medium Enterprises (SMEs), especially those operating within pesantren (Islamic boarding schools)

Purpose – The purpose of this study was to examine the halal assurance and food safety practices of Rotaz, a bread product manufactured by Al Mumtaz Pesantren. As a pesantren-based SME, Rotaz faces various production risks, including physical, chemical, and biological hazards, which could potentially impact both halal integrity and food safety.

Design/methodology/approach – This study uses the Hazard Analysis and Critical Control Points (HACCP) and Halal Good Manufacturing Practices (HGMP) frameworks to analyze risks in the halal production process of Rotaz, alongside a Failure Mode and Effect Analysis (FMEA) to identify and prioritize critical risks. This empirical research aims to pinpoint stages within the production process that require stricter monitoring and to propose a model for sustainable halal assurance and food safety compliance.

Findings – The findings reveal that Rotaz production involves multiple hazard points: three biological, five chemical, and seven physical hazards identified across various production stages. Critical Control Point (CCP) analysis identified five stages requiring close control to maintain product safety and quality. While HACCP established the necessary safety parameters, the HGMP analysis highlighted gaps in the implementation of best practices. The FMEA results identified three critical risks with a Risk Priority Number (RPN) exceeding the critical threshold, indicating the need for immediate action. Recommendations include enhanced standard operating procedures (SOPs), routine monitoring, and checklists to ensure consistent adherence to halal and safety protocols.

Research limitations – The limitation of this study lies in its focus on a single pesantren-based SME, which may limit generalizability. However, the findings provide valuable insights into the unique challenges faced by pesantren-based SMEs in maintaining halal standards and food safety.

Originality/value – The limitation of this study lies in its focus on a single pesantren-based SME, which may limit generalizability. However, the findings provide valuable insights into the unique challenges faced by pesantren-based SMEs in maintaining halal standards and food safety.

Keywords: SMEs Pesantren-based, halal good manufacturing practice (HGMP), HACCP, food safety, halal integrity

Track:
Food Science

Comparative Analysis of Plant Protein Profiles from Cowpea (Vigna unguiculata) and Pigeon Pea (Cajanus cajan)

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Abstract

Background – Plant-based foods have grown in popularity in recent years, owing to consumer demand for alternatives to animal-based products. This trend is being pushed by increased awareness of the nutritional value of plant-based foods versus animal-based foods, poorly perceived animal husbandry practices, and the influence livestock has on our ecosystem (Aimutis, 2022). Consumers are especially concerned about the high cholesterol content of animal-based diets, lactose intolerance, and rising levels of animal protein allergenicity. As a result, there is a greater demand for protein with plant-based formulations. However, few consumers understand plant-based diets, with the majority connecting the word with vegetarianism and veganism (Aimutis, 2022).

Purpose – The general objective of this study is to develop processes for producing plant proteins from plant underutilized local legumes (cowpea and pigeon pea).

Design/methodology/approach – Cowpea and pigeon pea flour were processed according to the modified method of Olawuni et.al (2012) and Oshidi and Ekperigin (1989). Design Expert was used to generate a Central Composite Design (CCD) model for the optimization of protein extraction parameters from raw materials. Only the significant models that satisfy the statistics and diagnostic criteria were included in the process optimization.

Findings – The study successfully extracted protein from cowpea and pigeon pea, optimizing extraction parameters using Design Expert software. Key factors influencing protein yield included basic pH, acidic pH, and solid-liquid ratio. The resulting protein powders demonstrated notable physicochemical properties such as pH, total acidity (%TA), total soluble solids (TSS), and colorimetric measurements. Functional properties highlighted the powders' water absorption capacity, emulsifying, and foaming abilities. Nutritional analysis revealed proximate compositions with cowpea yielding 6.77% protein and pigeon pea 6.02%. The protein content was particularly high at 72.6% for cowpea and 63.8% for pigeon pea, indicating their potential as valuable protein sources for nutritional applications. These findings underscore the effective of optimizing extraction processes to enhance protein yield and quality from these legumes.

Research limitations – While the study assessed the physicochemical and functional properties of the protein powders, it did not extensively evaluate their sensory attributes in food applications. This aspect is crucial for understanding consumer acceptance and the overall viability of the products developed.

Originality/value – The study emphasizes the used of underutilized local legumes, addressing both food security and sustainability. This approach is particularly relevant in the context of increasing global demand for plant-based proteins as alternative to animal protein.

Keywords: plant protein, protein extraction, cowpea, pigeon pea, legume

Comparative Analysis of Thymoquinone Content and Nutritional Profiles in Healthy Products containing black cumin seed oil in the Thai Market

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Abstract

Background – Black cumin seed oil (BCSO) is a renowned herbal and prophetic remedy, celebrated for its diverse health benefits due to its bioactive compounds, particularly thymoquinone. In the Thai market, black cumin seed oil is available in various forms, including cold-pressed oil capsules, sprays, salad dressings, and peanut butter. Despite its popularity, comparative studies on the nutritional value and functionality of these products remain limited.

Purpose – This study aimed to evaluate the functionality and nutritional values of healthy products containing black cumin seed oil in the Thai market, with a focus on their thymoquinone content, fatty acid profiles, and antioxidant activity.

Design/methodology/approach – Thymoquinone content was quantified using high-performance liquid chromatography (HPLC), fatty acid profiles were determined using gas chromatography (GC), and antioxidant activity was assessed via spectrophotometry.

Findings – The salad dressing containing BCSO exhibited the highest thymoquinone content (1802.55 ppm) and the highest linolenic acid levels among the tested products. Cold-pressed BCSO had the highest linoleic acid content (34.01%). All products demonstrated a high polyunsaturated fat content, ranging from 76.78% to 81.74%. Antioxidant activity, measured as % inhibition, was consistently high across all products, ranging from 81.3% to 84.3%.

Research limitations – This study focused on a limited range of commercially available BCSO products in the Thai market. Further research should explore a broader variety of formulations and consider additional bioactive compounds and sensory evaluations.

Originality/value – This research provides a comprehensive comparative analysis of BCSO products available in the Thai market, highlighting their nutritional and functional attributes, and underscores the potential of salad dressing as a superior delivery medium for thymoquinone and other health-promoting components.

Keywords: Thymoquinone, Prophetic medicine, Functional food, Thai Markets

Meat Detective: Tackling Meat Adulteration Using Chemical Probe as Specific Detector of Porcine Peptide

| **Mohd Nurhadi Hamsar[1], Siti Farah Md Tohid[2], Awis Qurni Sazili[3], Mohd Nasir Mohd Desa[4], Muhammad Alif Mohammad Latif[5], Michelle Fong Wai Cheng[6]**

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Abstract

Background – Muslims are obliged to ensure that every food they choose is from a clean and halal source. The food issues such as authenticity and adulteration has increasingly become great concern among Muslim consumers. Meat and processed meats are among the food of interest that facing adulteration and fraud including substitute pork derivatives, usage of blood plasma, prohibited additive substance, pork intestine casings and fake halal meat.

Purpose – This study aims to explore and propose a harmonized approach that integrates molecular biotechnology techniques with computational methods to design chemical probes for halal meat authentication. It seeks to develop a straightforward, convenient, and rapid screening method for porcine detection that complements existing Malaysian halal authentication systems.

Design/methodology/approach – method for porcine detection that complements existing Malaysian halal authentication systems. The study consists of in-silico techniques to design potential probes that specifically detect porcine peptide and in vitro titration method to determine binding properties of potential chemical probes to porcine peptide.

Findings – Chemical probes offer the potential for a novel, cost-effective, and rapid approach to porcine detection. This method has the potential to address the limitations of DNA-based techniques while complementing existing halal authentication systems. Contrary to biological-based methods, chemical-based probes can offer an alternative screening procedure that is straightforward, convenient, and more accessible.

Research limitations – The limitation of this research lies in the need to filter through thousands of chemical compounds to identify potential chemical probes that effectively bind with the porcine peptide. This process is time consuming and resource-demanding. Additionally, although the suitable compounds are identified, they are not commercially available and purchasable that posing challenges to their practical application. Furthermore, due to the short amino acid sequence of the porcine peptide, the binding interactions with chemical compounds are often weak and unstable, which could compromise the reliability and consistency of the detection method.

Originality/value – This work is expected to establish new strategies using biotechnology and computational approach to design specific probes for authentication of halal status. This approach can become a novel approach in halal authentication strategies as opposed to the common biological- based authentication methods.

Keywords: Halal Authentication, porcine peptide, adulteration, chemical probe, meat

A Comparative Untargeted-Metabolomics Differentiation of Unripened Cow Milk Cheese Produced from Different Sources of Rennet Including Pig Rennet

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Abstract

Background – Cheese is one of the most significant dairy products of milk globally, with its production steadily increasing due to the high, and constant demand for dairy products. As a nutrient-rich food, cheese significantly contributes to human health by providing essential nutrients. However, impact of rennet from different sources including haram and halal at the production of cheese is neither properly understood nor quantifiable.

Purpose – the objective of the current study was to investigate the effect of different rennet sources including calf, pig, and microbial rennet on the cheese prepared from cow's milk using untargeted metabolomics approach.

Design/methodology/approach – Untargeted metabolomics approach was used to investigate the impact impact of rennet source on cheese production. A mass spectrometry tool i.e. Gas chromatography-mass spectrometry (GC-MS) was used for sample analysis, while NIST database was used for compounds identification, while statistical analyses were carried out using different software. Total 10 samples were analyzed in triplicates. Samples and the resulted data were analyzed six months before.

Findings – A total, of 89 compounds, including amino acids, aldehydes, saccharides, sulfur containing, cholesterol derivatives, alcohols, carboxylic acids, fatty acids, and lipids were identified in different cheese samples. Comparison of metabolic profiles revealed that cheese produced with calf rennet exhibited higher levels of saccharides compared to pig rennet cheese. Conversely, pig rennet cheese showed significantly higher concentration of propionic acid, whiles the level of dimethyl disulfide, and was observed to be higher in cheese obtained from calf rennet. Pathway analysis highlighted metabolic pathways associated with amino acid metabolism (glycine, serine, and threonine), glyoxylate and dicarboxylate metabolism, and valine, leucine, and isoleucine biosynthesis.

Research limitations – Research limitations lies with the analysis of prepared samples only, no commercial samples were evaluated at this stage. Therefore, there is a need to analyze the commercial samples to check the research findings in coherence with the commercially available samples.

Originality/value – Overall, this study provides a detailed metabolic profile that distinguishes among cheese samples produced using different sources of rennet. This study has never been reported before.

Keywords: Cow milk cheese, Rennet (enzyme), Untargeted Metabolomics, unripened cheese

Functional Properties and Nutritional Value of Local Hyacinth Bean (Lablab purpureus (L.) Sweet) Protein Isolate: A Potential Halal Ingredient Substitute

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Abstract

Background – Lablab purpureus (L.) Sweet, known as Hyacinth Bean, is a legume rich in protein and low in fat, making it a potential alternative protein source for functional food products. Despite its nutritional benefits, the use of Hyacinth Bean protein isolate (HBPI) in food applications, particularly halal-certified products, remains limited. Protein isolates are gaining popularity as versatile halal ingredients, offering a reliable, non-animal-based protein source crucial for meeting halal dietary standards, especially in industries that traditionally rely on animal-derived proteins.

Purpose – This study investigates the functional properties of HBPI, optimizing extraction conditions and assessing its suitability for halal food products. Functional characteristics such as water holding capacity (WHC), oil holding capacity (OHC), emulsion capacity, and foam capacity and stability were analyzed to evaluate HBPI's application potential in food processing.

Design/methodology/approach – Hyacinth Bean flour was defatted to reduce lipid content, followed by protein isolation and analysis across pH levels (2, 4, 6, 8, 10, 12) using the Lowry-Follin method. The pH with maximum protein solubility was selected as the optimal extraction pH, while the isoelectric point was the pH with minimum solubility. Functional tests were performed to determine HBPI's suitability for incorporation into halal-certified food products.

Findings – Hyacinth Bean flour composition included 25.56% protein, 0.099% fat, and 60.74% carbohydrates, confirming its viability as a nutritious alternative to soybean. Optimal protein extraction was achieved at pH 10, with a concentration of 2.225 mg/ml, while the isoelectric point occurred at pH 4 (0.285 mg/ml). The resulting protein isolate contained 65.35% protein, qualifying it as a protein concentrate with a yield of 11.97%. Functional evaluations showed WHC of 6.81 ml/g, OHC of 6.59 ml/g, an emulsion capacity of 42%, foam capacity of 38.5%, and foam stability of 83.09%.

Research limitations – The protein isolate did not reach the 90% threshold for pure isolates, likely due to carbohydrate co-precipitation and equipment issues, affecting yield precision.

Originality/value – This study provides novel insights into the functional potential of HBPI, highlighting its application as a halal-certified ingredient in functional foods, meeting nutritional needs and supporting halal food demand.

Keywords: Hyacinth Bean (Lablab pupureus (L) Sweet), protein isolate, halal certification, halal product subtitute, halal food product

Halal Plant-Based Gelatin Production, Authentication and Implementations

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Abstract

Background – The manufacture of gelatin has long was considered a contentious issue on a global scale. The culinary, pharmaceutical, and cosmetics sectors use gelatin extensively. However, it is considered one of the most controversial elements in the Halal and Kosher food businesses. The animal from which gelatin is obtained determines whether or not products containing it are acceptable. Once gelatin has been combined with food or medication, it is hard to identify the animal from which it came. Consequently, there is a risk of mislabeling or adulteration driven by financial gain.

Purpose – Milk is combined with gelatin to make yogurt to overcome the syneresis difficulty during storage. However, the source of the gelatin is unknown, raising ethical questions about whether it is Halal or Haram.

Design/methodology/approach – This study was carried out to develop yoghurt with transglutaminase enzyme. The yoghurt was evaluated for the rheological characteristics of yogurt and its synthesis using the transglutaminase enzyme that was isolated from the fig plant as a gelatin substitute. The effects of different enzyme concentrations (0.02%, 0.03%, and 0.04%) and setting temperatures (35, 45, and 55oC) as well as time treatments (60, 90, and 120 minutes) on gelatin-based yogurt were assessed.

Findings – The enzymatic treatment of milk enhanced its ability to retain water following centrifugation by delaying the syneresis process during yogurt storage at 4oC. The cross-linking of transglutaminase with milk protein improved the functional qualities of yogurt and had an impact on the post-acidification process and stability of yogurt samples. Plant-based yogurt had higher FRAP antioxidant activity than gelatin-based yogurt, which had no antioxidant activity at all.

Research limitations – The use of plant-based gelatin provides bitterness problems and it must not be added in raw extract form. The purification and extraction must be followed properly for better results.

Originality/value – The quantitative estimate of protein and fat contents by FTIR and Raman spectroscopy provided better fat and protein microstructure changes. Modern scientific methods about Halal and Kosher food features must be incorporated since consumer concerns over the authenticity of Halal and non-halal food products have increased.

Keywords: Gelatin, Halal source, Fig, Transglutaminase enzyme, Yoghurt

Cutting-Edge Scientific Methods for detection of Lards adulteration in Halal Foods

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Abstract

Background – Food product adulteration is becoming a widespread problem in many nations. The widely affected adulteration problem is recorded in the dairy and confectionary industry which requires blends of fats and oils. Halal ingredient usage in food processing is important and requires newest, most advanced analytical instruments for physical inspection and documentation.

Purpose – The study was carried out to look for differences in food's basic components of contaminants such as oils or fats, which forms basis of analytical techniques employed for detection of adulteration of oils and fats or including lards.

Design/methodology/approach – The Fourier-transform infrared (FTIR) spectroscopy technique was used for butter fats relying on chemical and biological data or their physical-chemical constants to identify any lard inclusion in imported branded butter and cheese (2 samples) for up to 30 days of storage period. The FTIR was used to determine variation in samples' vibrational bands and compared with standard butter fat FTIR bands for fat differentiation. The Principal component analysis (PCA) and MATLAB statical software) was used for designing a standard linear equation for differentiation of fats in butter blends based on spectral data in a range of 4500–600 cm-1.

Findings – The recorded results identified the spectral bands linked to lard, butter, and their blends (containing 0% to 12% lard in butter). The results demonstrated that comparison of triacylglycerol (TAG) profiles of butter fat adulterated with various lards with those of animal fats could qualitatively determine lard contaminations. The band variation shows the difference in fat and higher lards and a mixture of fats thus needed advanced FTIR - MR combination for each fat differentiation.

Research limitations – This study provided a visual representation while quantitative estimation is still difficult and unclear. However, this study will open research ways for higher combination of PCA and FTIR for better clarification and understanding of the food fats adulteration.

Originality/value – This research will provide cutting-edge scientific methods (FTIR proved an advanced technique for differentiation of fats) for the detection of lards, identification and separation of such fats from food product. Therefore, it will lead to better food safety and food quality aspects with respect to halal authenticity.

Keywords: Lards, adulteration, FTIR, Authenticity, Halal food

Characterization of Legume-Derived Plant Milks: A Nutritional and Functional Analysis

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Abstract

Background – Plant-based beverages have garnered significant attention due to their nutritional benefits and alignment with dietary preferences such as lactose intolerance, veganism, and sustainability.

Purpose – This study focuses on the development and characterization of plant-based milk formulations derived from a mixture of black bean with green bean, and black bean with red bean. The beans and resultant milk products were evaluated for their fatty acid profile, total phenolic content, and antioxidant activity.

Design/methodology/approach – All samples were extracted by dichloromethane-ethanol extraction. The crude extract will be further derivatization for fatty acid profile analysis. The spectrophotometry were used to analyze the total phenolic compound and antioxcidant activity of the the product.

Findings – Black beans demonstrated a high content of linolenic acid (41.74 ± 1.26%), surpassing green and red beans. Both plant-based milk formulations were rich in unsaturated fats, with monounsaturated fat ranging from 54.47% to 59.23% and polyunsaturated fat from 40.29% to 45.06%. The total phenolic content of black bean, red bean, and green bean were 2.38, 2.20, and 1.52 µg GAE/g DW, respectively. Antioxidant activity, assessed via % inhibition at 100 mg/ml, showed that black bean extracts exhibited the highest activity (75.05%), followed by red bean (64.1%) and green bean (64.5%). For the plant-based milk formulations, the antioxidant activity was 40.1% and 29.2% for black bean with red bean, and black bean with green bean, respectively.

Research limitations – The study focused on black bean, green bean, and red bean, which may not fully represent the diversity of legumes available globally.

Originality/value – The findings underscore the nutritional and functional potential of plant-based milk derived from legumes, particularly highlighting their unsaturated fat content and phenolic compound-mediated antioxidant activity. This study contributes to the growing field of sustainable, plant-based food innovations aimed at promoting health and addressing global dietary trends.

Keywords: Plant-based milk, legume, total phenolic content, antioxidant activity

Track:
Green Technology

Biodegradable Packaging in Brunei: Assessing Viability and Understanding Barriers to Eliminate Single-Use Plastic

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Abstract

Background – The increasing global focus on sustainability has underscored the importance of reducing plastic waste, with biodegradable packaging offering a practical and environmentally friendly alternative. In Brunei, while there is a growing interest in sustainable practices, the adoption of biodegradable packaging remains limited, largely causes by the gaps in awareness and accessibility.

Purpose – This study aims to assess the current level of awareness and explore practical strategies to encourage the use of biodegradable packaging among Brunei's society. By analyzing consumer perceptions, availability of alternatives, and affordability, the research identifies actionable challenges and solutions.

Design/methodology/approach – This study employs a quantitative approach by distributing structured surveys to a representative sample in Brunei. The survey instrument was developed by adapting items from existing validated studies with modifications. A pilot test was conducted to refine the questionnaire. The survey aims to assess awareness, perceptions, and barriers to biodegradable packaging. Data will be analyzed using descriptive statistics and factor analysis to identify key variables affecting biodegradable packaging adoption. To ensure validity and reliability, the study employs expert reviews and a Cronbach's alpha test during the pilot phase to verify internal consistency.

Findings – The study identifies key barriers to adopting biodegradable packaging, such as limited public knowledge, and insufficient policy support. Findings show moderate awareness but significant gaps in understanding its benefits, with perceptions shaped by concerns over cost and practicality. To address these issues, the study proposes public education campaigns, collaborations with local businesses to improve affordability, and government-led incentives. Grounded in the findings, these strategies offer a practical roadmap to promote biodegradable packaging adoption and sustainable and eco-conscious society in Brunei.

Research limitations – none

Originality/value – This study provides insights into biodegradable packaging adoption in Brunei, focusing on local awareness, affordability, and accessibility. By examining region-specific barriers such as cultural perceptions, cost concerns, and policy gaps, it highlights unique challenges within Brunei's socio-economic context. A review of studies from other regions reveals similarities in barriers but underscores the distinctiveness of Brunei's approach. This comparison enhances the study's contribution by situating its findings within a broader global context while addressing the specific needs of Brunei.

Keywords: Biodegradable Packaging, Brunei Darussalam, Environment, Single-Use Plastic, Sustainability.

Sustainability in Halal Logistics and Supply Chain Management Research

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Abstract

Background – The importance of sustainability in supply chain management has grown significantly, drawing global attention to sustainable practices across various industries. The halal logistics sector must also consider how to incorporate sustainability into its operations. Effective integration of sustainability into halal logistics and supply chain management (HLSCM) is vital to meet global sustainability objectives and to maintain practices that are environmentally, economically, and socially sustainable.

Purpose – This research aims to address the key themes and gaps in integrating sustainability practices that encompass environmental, economic, and social dimensions by systematically reviewing the literature on sustainability in HLSCM

Design/methodology/approach – This research utilizes a systematic literature review approach. Articles were sourced from the Scopus database, focusing on research published in the Journal of Islamic Marketing (JIMA) from 2011 to 2024. Keywords used included 'halal logistics' and 'halal supply chain.' The data collection involved indexing relevant publications and analyzing 41 articles. Thematic analysis was employed to quantify key themes, while content analysis was used to synthesize the information and identify research gaps.

Findings – The review reveals a notable increase in publications focusing on sustainability in HLSCM, particularly emphasizing sustainable production, cost optimization, and promoting ethical practices. However, it highlights several key gaps that form the research purpose: a fragmented approach where studies often address sustainability dimensions (environmental, economic, and social) in isolation and the underexplored role of emerging technologies such as blockchain and IoT in enhancing sustainability within HLSCM. These gaps indicate a need for more integrated and holistic approaches to sustainability in halal logistics and supply chain management.

Research limitations – The study is limited by the scope of articles reviewed, such as database and publication period restrictions may not cover all aspects of HLSCM. Furthermore, the rapidly evolving nature of technologies such as blockchain and IoT means their potential impacts may not be fully captured in the existing literature.

Originality/value – The originality of this research lies in identifying the fragmented approach to sustainability in HLSCM and the underexplored potential of emerging technologies like blockchain and IoT. This study provides valuable insights for future research and practical applications in integrating comprehensive sustainability practices in halal supply chains by addressing these gaps.

Keywords: Sustainability, Logistics, Supply Chain Management, Systematic Literature Review, Halal

Track: Health and Physical Science

Formulation of Amylopectin from Durian Peel and Carrageenan as a Potential Halal Capsule Alternative

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Abstract

Background – Capsules are pharmaceutical preparations consisting of active compounds enclosed within water-soluble hard or soft shells. Gelatin is commonly used as a gelling agent for capsule shells. Although, approximately 80% of gelatin is derived from porcine sources, raising concerns about its permissibility for Muslim consumers. Durian peel offers a promising alternative as it contains lignin, hemicellulose , cellulose, and pectin .

Purpose – Combining durian peel with Eucheuma cottonii carrageenan is essential for producing high-quality capsule shells as a potential halal capsule alternative.

Design/methodology/approach – This study involved an experimental approach, analyzing the amylopectin content in durian peel and formulating capsule shells using five variations of durian peel starch to carrageenan ratios: 0.76% : 5% (F1), 0.78% : 5% (F2), 0.80% : 5% (F3), 0% : 5% (F4), and 5% : 0% (F5).

Findings – The results confirmed the presence of amylopectin in durian peel, with moisture and ash content meeting the National Standard of Indonesia (SNI) requirements. Halal capsule shells were successfully produced from a combination of durian peel and Eucheuma cottonii carrageenan, with the formulation meeting specification standards, including appropriate disintegration times.

Research limitations – The research on amylopectin from durian peel combined with Eucheuma cottonii carrageenan as a halal capsule alternative still needs further investigations to optimize the formulations, ensure biocompatibility and safety, and evaluate the material's functional properties. Expanding studies to include scalability and cost-effectiveness will facilitate its potential commercialization.

Originality/value – Durian peel, a by-product of agriculture, has been innovatively combined with Eucheuma cottonii carrageenan to develop sustainable, plant-based capsule shells. This breakthrough presents a halal-certified, allergen-free alternative to traditional animal-derived capsules, meeting the needs of sensitive consumers. These capsules can be colored to combine visual appeal with environmental sustainability, exemplifying a novel application of natural resources in functional product development.

Keywords: Capsule shells, halal, Eucheuma cottonii carrageenan, durian peel

The Guideline of Development Halal Tourism Strategy to Promoting Sport and Health Business Sectors in the Bangkok Metropolitan in the Bangkok Metropolitan

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Abstract

Background – Health and wellness tourism is a growing trend, with increasing demand for Halal-compliant services among Muslim travelers. Bangkok, a leading medical tourism hub, offers advanced healthcare and wellness services but lacks full integration of Halal principles. This research develops strategic guidelines to position Bangkok as a global leader in Halal health and wellness tourism.

Purpose – This research aimed to achieve three main objectives: 1) to study the development Halal Tourism Strategy to promoting sport and health business sectors in Bangkok Metropolitan 2) to analyze the Halal Tourism Strategies for advancing the sport and health business sectors in the Bangkok Metropolitan and 3) to identify challenges and propose guidelines and solutions for Halal Tourism Strategies in the context of sports and health business in the Bangkok Metropolitan.

Design/methodology/approach – The research methodologies applied qualitative research methods, including in-depth interviews with key stakeholders' executives in related industries and analysis of Halal Tourism Trends focusing on the role of data in identifying unique strategies to promoting sport and health business sectors and optimize their outcomes.

Findings – The findings indicate that Halal compliance and service quality are significant predictors of customer satisfaction and loyalty, which, in turn, enhance the overall competitiveness of sports and health businesses in the Halal tourism sector. Moreover, proactive marketing strategies and strong collaboration among government agencies, private sectors, and local communities were identified as critical factors for sustainable development.

Research limitations – 1. Geographic Scope: Focus on Bangkok may limit relevance to other regions. 2. Sample Size: Limited stakeholders may not represent all perspectives. 3. Industry Changes: Findings may need updates due to rapid trends. 4. Diverse Preferences: Strategies may not fully address all Muslim subgroups. 5. Data Gaps: Limited data access affects analysis depth. 6. Narrow Focus: Health emphasis may overlook other Halal tourism areas.

Originality/value – 1. Strategic Framework: Guidelines for Halal health tourism. 2. Holistic Approach: Model integrating Halal and wellness services. 3. Stakeholder Collaboration: Multi-sector cooperation for sustainability. 4. Destination Competitiveness: Positioning Bangkok as a Halal health leader. 5. Niche Market: Focus on health-conscious Muslim travelers.

Keywords: Halal sustainable development, Health and Wellness Tourism, Sports tourism, Health Business sector, promotion and public relation

Track:
Islamic Finance

Islamic Social Finance for Refugee Livelihoods: Exploring Thailand's Policy Innovation

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Abstract

Background – At the end of 2023, 117.3 million urban displaced persons lived globally, with 15.6 million in Asia and the Pacific. In the region, Afghanistan and Myanmar are two of the most important factors that contribute to forced displacement, with Southeast Asia continuing to at the epicenter of this tragedy. Existing framework, such as the Refugee Convention of 1951, frequently fail to meet the needs of refugees, especially in non-signatory countries like Thailand. While the National Screening Mechanism (NSM) represents Thailand's first attempt to formalize refugee governance, the transformative potential of the NSM is limited by the inertia of the institutions. Islamic social finance, thorough mechanism like zakat (almsgiving) and waqf (endowments), presents an innovative approach to addressing these gaps.

Purpose – This study analyses the potential of Islamic social finance to strengthen Thailand's NSM to support refugee entrepreneurship and financial inclusion, as well as solving fundamental issues in refugee governance. The research explores the integration of Sharia-compliant financing with humanitarian framework to offer sustainable solutions for refugee protection and livelihoods in Southeast Asia.

Design/methodology/approach – The research uses a secondary data analysis approach, investigating previous research, papers, and policy document aiming to develop an understanding of the potential of Islamic social finance in supporting refugee livelihood in Thailand and beyond.

Findings – Islamic social finance encourages financial inclusion and mitigates economic vulnerabilities, therefore bridging gaps in current refugee governance models, according to preliminary results. These mechanisms develop regional collaboration and contribute to more resilient refugee communities when they are in line with humanitarian and economic empowerment principles (Fassin, 2012; Betts & Collier, 2017).

Research limitations – The analysis mainly focuses on Thailand, with limited comparative focus on the other ASEAN countries. Further research is required to assess the long-term scalability of Islamic finance in supporting refugee governance frameworks.

Originality/value – This study extends the discussion on policy entrepreneurship and refugee governance by explaining how faith-based finance structure can address serious challenges in Southeast Asia. It advocates for Islamic social finance as an essential element for sustainable and inclusive governance of refugees in the region.

Keywords: Islamic finance, refugee governance, zakat, waqf, Southeast Asia

The Dynamics of Bank Titil: A Deep Dive into the Perspectives of Indonesian Muslim MSMEs

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Abstract

Background – Bank Titil, a term used in Java, refers to interest-based lenders targeting MSMEs through mobile loan services. Despite being classified as usury (riba) under Islamic principles, many Muslim MSMEs continue borrowing from Bank Titil, raising questions about their motivations and the availability of Islamic loan alternatives

Purpose – This study investigates the perceptions of Muslim Micro, Small, and Medium Enterprises (MSMEs) in borrowing from interest-based lenders, commonly referred to as "Bank Titil"

Design/methodology/approach – Employing a qualitative approach grounded in phenomenology and utilizing Interpretative Phenomenological Analysis (IPA), this study gathered primary data through semi-structured interviews with Muslim MSMEs in Indonesia who continue to rely on Bank Titil. Thematic analysis, performed using NVivo 14 software, facilitated a systematic and comprehensive data exploration. Reliability was ensured through rigorous verification strategies that maintained alignment between data analysis and interpretation. Validity was reinforced using triangulation techniques, including participant feedback, to confirm the accuracy and credibility of the findings.

Findings – The findings reveal that borrowing from Bank Titil often leads to diminished business profitability, cyclical dependency on debt, and psychological distress due to the violation of Islamic prohibitions on usury (riba). Despite this, many borrowers turn to Bank Titil out of necessity, driven by the need to fulfill basic living requirements. External factors, including the ease and accessibility of borrowing from Bank Titil, coupled with the limited availability of alternatives further influence these decisions. Islamic banks are often perceived as less accessible due to their complex procedures and limited loan amounts, making them less attractive to MSMEs

Research limitations – A key limitation of this study is on the perspectives of MSME borrowers through interviews, without incorporating insights from regulators or Islamic financial institutions

Originality/value – This study significantly contributes by emphasizing the urgent need to enhance financial literacy and the inclusion of Islamic financial products. Moreover, It fills a gap in the literature by exploring the socio-economic pressures and convenience factors driving these decisions

Keywords: Bank Titil; Riba; Usury; MSMEs; Islamic Bank

Nexus of Halal Entrepreneurship and Islamic Finance for the Creation of a Strong Halal Ecosystem: A Critical Literature Review

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Abstract

Background – Ethical entrepreneurship and ethical financing models based on Islamic principles are insufficiently researched and discussed in the emerging plural economic landscape. To enhance the understanding of practitioners and researchers and to advance the frontier of knowledge, an exploratory study on Halal entrepreneurship and Islamic finance within a strong Halal ecosystem is expedient.

Purpose – This article discusses the relationship between Halal entrepreneurship and Islamic finance to create a strong Halal ecosystem.

Design/methodology/approach – Using a qualitative research method, we provide answers to the research questions through a critical literature review (CLR). We selected 68 scholarly articles and texts from the Google Scholar database based on the purposive sampling technique and inclusion/exclusion criteria of relevance, compatibility, and recency of the articles.

Findings – Three findings emerged from the CLR. First, Islamic finance activities are conducted on the demand and supply side of the Halal ecosystem. On the demand side, Islamic Financial Institutions (IFSs) collect idle funds from depositors for safekeeping and ethical investments. On the supply side, the accumulated depositor funds are used by IFS to fund entrepreneurship, contracts, and other investments to generate halal returns. Second, Halal entrepreneurs and businesses are funded and supported by Islamic finance on the supply side of the Halal ecosystem. Third, the collaboration between Halal entrepreneurship and Islamic finance is a catalyst for the manufacture and delivery of products, services, technology, job creation, wealth creation, and economic development in the Halal ecosystem.

Research limitations – Apart from being a conceptual paper, the study's limitations include a reliance on secondary data, potential selection bias in article selection, a narrow focus on specific regions, and the exclusion of non-English literature, which may limit generalizability.

Originality/value – It is rare to find a research article that addresses how halal entrepreneurship and Islamic finance converge to create a strong halal ecosystem. The paper therefore offers new insights into the relationship between halal entrepreneurship and Islamic finance based on the finance-growth nexus theory and presents a comprehensive framework for understanding their role in promoting economic growth and sustainability in the halal industry.

Keywords: Halal ecosystem, Halal entrepreneurship, Islamic finance, Nexus

Track: Marketing

Expanding the Halal Horizons: The Emergence of Halal Certification for Consumer Goods and Unidentified Product Categories

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Abstract

Background – The importance of halal certification for consumer goods in the halal market is explored in this article, with particular attention paid to commodities that fit into unknown categories or are not typically halal-certified. Customers are looking for verified halal items that adhere to ethical and religious standards growing increasingly as the halal business expands significantly. The study discovers that the variables that make halal certification necessary for consumer goods and the unidentified product categories to be certified are due to market access, customer trust, government regulations, and religious compliance.

Purpose – To reveal the necessities for consumer goods and non-food items of unrecognized schemes for acquiring a halal certificate

Design/methodology/approach – Both document examination and field research, employing in-depth interviews, were used to collect data for this study. A qualitative strategy that combines secondary data from web databases with in-depth interviews is an effective method to collect data, claims Fram (2013). Since this study gathers data through interviews and document analysis, a qualitative technique is effective (Creswell, 2013). This study design makes The evidence-collection method explicit, resulting in findings that clarify the research questions. According to Guest et al. (2014), the use of Atlas.TI software facilitated the analysis of textual materials and transcribed interviews, making it easier to find themes and clusters in the data. This tool improves qualitative analysis by classifying and structuring content to promote significant insights.

Findings – High consumer demand, industrial pressure to match market expectations, and regulatory obligations in some countries are some of the factors driving the need for halal certification of consumer goods and non-food products under uncategorized schemes. To guarantee quality, safety, hygienic practices, and adherence to Islamic values, consumers are also favoring halal-certified products, including non-food items, in increasing numbers.

Research limitations – The need for halal certification for uncategorized products or those deemed unsuitable or ineligible for halal certification, as well as non-food products unidentified schemes that are halal certified, are the main limits of this article.

Originality/value – This study has identified the factors of the necessities for the non-food products of unidentified categories and schemes to be halal certified

Keywords: factor of necessities, non-food, consumer goods, uncategorized

Track: Molecular Biology

Global Trends for Candida albicans CDR1 Resistance: A Bibliometric and Content Analyses

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Abstract

Background – Fungal infections have become a significant concern in recent years, with Candida albicans being humans' most common pathogenic fungus. Despite advancements in antifungal chemotherapy, the emergence of antifungal-resistant strains and the limited availability of effective and selective antifungals pose significant challenges in managing clinical fungal infections-.

Purpose – To identify patterns, trends, and relationships of C. albicans CDR1 transporter resistance, in this study, quantitative assessment and analysis of scholarly literature was conducted to make informed decisions to advance science and innovation targeting a new proposed antifungal.

Design/methodology/approach – We examined C. albicans resistance, focusing on CaCDR1, an ATP- Binding Cassette superfamily transporter. This transporter has been demonstrated to be clinically significant in C. albicans, making it one of several promising candidates for developing novel antifungal medicines. We performed a bibliometric analysis of 445 papers retrieved from the Scopus database between 1995 and 2023 using the Bibliometrix R-package, VOSviewer, and Open Refine. We used bibliometric coupling, keyword co-occurrence, conceptual thematic analysis, and a content analysis of the most cited publications based on total global citations to create our findings-.

Findings – We identified two significant study clusters: internal and external aspects. Internal components merely emphasize on CDR1 genetics or genomics connected to resistance mechanisms. External features rely on environments that support CDR1 resistance mechanisms, such as membrane lipid conditions and biofilm formation as a result of CDR1 overexpression-.

Research limitations – We limited the scope of study only for C. albicans ABC transporter, especially CDR1 as a multidrug transporter due to its published advanced analysis and as a protein model within the field-.

Originality/value – This article thoroughly explains the academic field's intellectual and conceptual framework. Furthermore, it contributes to existing literature and characterization attempts and offers a future study path-.

Keywords: Candida albicans, CDR1, Resistance, Bibliometric, ABC transporter

Track:
Natural Products

Characterization of Chitin Extracted from Apple Snail (Pomacea canaliculata) Shells: A Preliminary Study for Chitosan Production

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Abstract

Background – GGolden apple snails (Pomacea canaliculata) are major pests in rice fields, causing significant challenges for farmers. Chemical controls leave sharp residual shells, increasing risks of leptospirosis and medical costs. While golden apple snails in Thailand are used for animal feed and wastewater treatment, they remain underutilized. Their shells, containing 20-50% chitin, can be extracted into chitosan-a non-toxic natural polymer suitable for Halal applications in health-related industries. Chitosan from snail shells offers an eco-friendly solution to reduce agricultural issues and promote sustainable economic opportunities for local communities.

Purpose – This research aims to extract and characterize chitin from apple snail shells and evaluate its structural, chemical, and morphological properties. The study also examines contaminants like pesticide residues and heavy metals to assess its suitability for diverse applications.

Design/methodology/approach – The extraction conditions included demineralization with 1 M HCl at 25 °C for 2 hours, deproteinization with 2 M NaOH at 25 °C for 2 hours. Fourier-transform infrared spectroscopy (FT-IR) confirmed functional groups, while Scanning Electron Microscopy (SEM) analyzed microstructure. Heavy metal and pesticide residues were assessed using AOAC methods.

Findings – The resulting chitin yielded approximately 40.77 % (w/w) of raw apple snail shells. The FT-IR absortion of light brown chitin powder showed 10 major characteristic peaks between 513 and 3430 cm-1. Metals like As, Cd, Pb, and Hg were undetected, except for 0.149 ppb Cu, and no pesticide residues were found. SEM analysis revealed that the particles had a polygonal shape with a rough surface texture.

Research limitations – The extraction is limited by chitosan's solubility in acid, requiring large shell fragments and higher solvent volumes, increasing cost and complexity.

Originality/value – This study highlights that chitin extracted from apple snail shells offers a sustainable source for chitosan production. Utilizing this abundant but underused resource supports waste reduction and enhances agricultural productivity. Safety assessments, including tests for heavy metals and pesticides, confirm its suitability for applications in the food, pharmaceutical, and medical industries.

Keywords: Chitin, Chitosan, Apple snail, Industry, Halal

The Promise of Essential Oils: Bridging Sustainability and Halal Compliance in Food Preservation

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Abstract

Background – The global food manufacturing sector is vital in supplying food to consumers and institutions. However, its reliance on synthetic preservatives raises concerns about safety, chemical residues, and Islamic law's compliance, compounded by the Thayyib challenges. In response, essential oils, as a natural alternative to synthetic preservatives, have the potential to become integral to the global food industry supply chain.

Purpose – The aim of this study is to explore the potential of Citrus sp. essential oils as an alternative for synthetic preservatives in the food industry, as well as their sustainability potential in the food business sector.

Design/methodology/approach – Using an exploratory-inductive approach, this research combines secondary data from experimental studies with primary data collected through semi-structured interviews with industry stakeholders and customers, analyzed using NVivo software. Reliability was ensured through verification strategies, aligning data analysis and interpretation of findings. Validity was tested using triangulation techniques, involving multiple sources such as researchers, participants, and experts. To enhance accuracy, interview transcripts and results were disclosed to participants for verification.

Findings – Findings indicate that essential oils are promising natural preservatives, particularly from the industry's perspective, where regulatory oversight is critical for successful implementation. Moreover, customers, especially those concerned with Halal principles, view essential oils as not only Halal but also Thayyib, meeting both health and safety standards. These results highlight the dual potential of essential oils to address safety concerns while promoting sustainability and aligning with Islamic dietary values, offering a valuable alternative for the global halal food industry.

Research limitations – The study is limited to antibacterial mechanisms without sensory testing and cost-benefit analysis.

Originality/value – This study is the first to connect experimental findings with sustainability perspectives from both industry and consumers. In contrast to prior research, which primarily focuses on the antimicrobial activity of Citrus sp. essential oils, this study emphasizes their development as a potential preservative, leveraging their diverse microbial inhibition mechanisms. By integrating these aspects, the study provides a novel approach to understanding the multifaceted applications of Citrus sp. essential oils in the food industry.

Keywords: Essential oils; Synthetic preservatives; Halal food; Sustainability

Valorisation of Food Waste into Sustainable Halal Pet Food

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Abstract

Background – Compared to its neighbours in Southeast Asia, Brunei lags in terms of sustainable waste management procedures. Landfills receive 36% of the wasted food. Converting food waste into pet food would be a good substitute for treating it as waste and instead as a valuable resource.

Purpose – The paper proposes a sustainable pet food line that uses and recycles food waste, particularly Category 3 ABPs, to reduce reliance on traditional meat products. This approach could mitigate environmental problems and create a nutritionally balanced pet food option. This initiative aims to address food waste management and pet nutrition sustainability, aligning with global sustainability goals and potentially revolutionising the pet food industry.

Design/methodology/approach – The study consists of a qualitative and experimental approach. The study conducted library research on the valorisation of food waste into pet food. For the experimental approach, the first stage was collecting the waste from an identified local supermarket and then processing it into pet food. The second stage of the experiment was conducting a food test on pet food.

Findings – Numerous research studies advise transforming food waste into pet or animal feed, as the study's findings demonstrate. Additionally, the lab test demonstrates that pet food contains proteins and fats that benefit pets.

Research limitations – The study only examines the conversion of food waste into pet food and did a simple food test, but risk assessment is just as crucial. Therefore, coordinated research is required to fully utilise such wastes for animal feed.

Originality/value – The paper's sustainable waste management goal aligns with Brunei Vision Goal 2: High Quality of Life, SDG 12: Responsible Consumption and Production, and SDG 11: Sustainable Cities and Communities. Pet food, which uses food waste as a key ingredient, promotes a circular economy and lowers greenhouse gas emissions. This inexpensive option lessens both pet owners' and landfill strain.

Keywords: Brunei, Food Waste, Pet Food, Sustainable, Food Waste

Track: Nutrition

Consumer Attitude Towards Adoption of Halal Food Industry Nutrition Certification and Health Paradigm

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Abstract

Background – The issue of halal authenticity in the halal food industry has recently grown to be a serious concern. One of the issues facing the sector is the absence of international halal standards. Experts are still discussing marketing strategies that encourage consumers to have favorable view toward halal food, despite a dearth of knowledge regarding consumer attitudes and product qualities like halal logos, ingredients, and place of origin.

Purpose – The goal of the study was to ascertain how food nutrition characteristics and marketing affected Muslim consumer perceptions towards halal food.

Design/methodology/approach – The questionnaire was pre-tested using 86 consumer responses from the entire survey study, and study was carried out at the supermarket areas of Lahore, Pakistan during the summer season. The model data was then evaluated using SPSS tool for additional analysis. Two independent variables are marketing stimuli and product attributes, including measurements for aspects of the product attributes like the halal-certified logo.

Findings – According to the findings, 34% of consumers were familiar with halal food ingredients and labeling, 30% were not familiar with label and nutrition while 36% of consumers said that they usually not see labeling and ingredients of food products. The gender of respondents showed that there were more female respondents (57.5%) than male respondents (42.4%), according to results of descriptive analysis. Age figures show that 35% of respondents are between the ages of 36 and 45, 28% are between ages of 46 and 55, and 26% are between the ages of 25 and 35. With 60% of responders holding university degree, the majority have a solid educational background.

Research limitations – There is a dire need to conduct awareness activities regarding halal nutritional foods and their availability for Muslim consumers. The results showed that consumers are unaware of Halal nutrition certification. Therefore, their creditability and acceptance of knowledge about Halal food businesses should be considered while working with Halal certification organizations to ensure that food ingredients are properly labeled.

Originality/value – The subjective norms, level of religion, the availability of Halal certification, and health considerations all have a statistically and economically significant impact on consumer nutritional perceptions. The favorable and significant correlations between product attributes and consumer perceptions of halal food as nutrition guidance are necessary to understand product halal labeling.

Keywords: Nutrition, Consumer attitude, Behavior, Health certifications, Implementations

Development of Halal Antimicrobial Agents From Plants: Prospects to Halal Nutritional Framework

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Abstract

Background – Proper halal nutrition refers to a halal diet that offers every nutrient and ingredient required to sustain regular body function. Muslim consumers are worried about the origin of food antimicrobial agents such as free fatty acids (FFA), since they can contain ingredients that are forbidden in Islam, such as lards and other animal sources. The animal-origin free amino acids (FAA) exhibited strong antimicrobial qualities against both gram-positive and gram-negative infections but also showed toxicity and organoleptic problems in foods. Therefore, it is necessary to introduce halal FFA so that Muslim customers can accept the use of FAA.

Purpose – This study evaluated the extracts from ginger, cumin, and Echinophora plants as alternative halal food antimicrobial agents such as halal free fatty acids (HFFA). These extracts were prepared by solvent extraction method. Then, these extracts were added to butter production.

Design/methodology/approach – The butter sample were compared to synthetic sulfonamide and animal-based lactoferrin in terms of their antioxidant activity (DPPH) and antimicrobial effects on dairy butter samples for 30 days of storage period.

Findings – The extracts of ginger and Echinophora exhibited greater antimicrobial potential, whereas cumin demonstrated the lowest antimicrobial potential at 50 μM and 100 μM solutions of Staphylococcus and E.Coli sps., but was still significantly higher than that of sulfonamide and lactoferrin. After 30 days of storage for butter preservation, the DPPH activity for Echinophora (43.5 mmol TEAC/kg) and ginger (39.65 mmol TEAC/kg) was higher than that of cumin (30.52 mmol TEAC/kg), lactoferrin (27.55 mmol TEAC/kg), and sulfonamide (25.56 mmol TEAC/kg). The results showed these plants showed higher antimicrobial and antioxidant activity but activity decreased with the passage of time of storage.

Research limitations – Several techniques for identifying non-halal substances must be used to safeguard the authenticity of halal products while also informing and reassuring customers about safe and hygienic products.

Originality/value – Therefore, this research will open ways for new natural sources of HFFA as potential active food ingredients that might boost the halal market and promote nutritional framework. Lastly, several techniques for identifying non-halal substances must be used to safeguard the authenticity of halal products while also informing and reassuring customers about safe and hygienic products.

Keywords: Plants, Halal antimicrobial agents, Nutritional framework, Halal food, Authenticity

Histopathological Changes Induced by Tartrazine and Curcumin Food Colorants in Glands and Tissues of Female Sprague Dawley

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Abstract

Background – Incorporation of food coloring specially tartrazine and curcumin may impact the body's physiological processes, leading to changes in tissue structure.

Purpose – Examine the histopathological changes by tartrazine and curcumin on liver, kidney, ovary, intestine, adrenal and thyroid gland tissues of female albino rats.

Design/methodology/approach – Tartrazine and curcumin were administered to the animals at the FDA-recommended acceptable daily intake (ADI) levels, as well as at concentrations ten times higher than the ADI levels were established at 9.6 mg/kg b.w. and 96 mg/kg b.w. for tartrazine, and 3.85 mg/kg b.w. and 38.5 mg/kg b.w. for curcumin.These food colors were mixed into the animals' feed and given to them daily for 30 and 45 days respectively. Histopathological approach was used for assessment of organ and following these steps Coating of slides Post fixation treatment Embedding Sectioning Mounting

Findings – The study found that high doses of tartrazine led to deposition of pigment in the portal canal and congestion of blood vessels within the liver, along with hemorrhages in the hepatic vein. The treated group's kidneys displayed symptoms of acute glomerular capillary degeneration and dilatation, tubular necrosis, epithelial damage, chronic glomerular capillary degeneration and dilation, and severe glomerular capillary degeneration and dilation. Furthermore, histopathologlogical analysis of the intestines exposed to tartrazine for 30 and 45 days depicted partially impaired and damaged mucosal epithelial cells, disrupted intestinal mucosal tissue, and epithelial rupture. Each group treated with tartrazine and curcumin exhibited fewer mature graafin follicles, shrunken ovarian follicles, degenerated oocytes, and atrophy of ovarian follicles.

Research limitations – 1. Data was collected from adult female SD rats because literature lacks such studies related to impact of food colors in female rats. 2. Study was limited to 45 days and these results may not use after 45 days.

Originality/value – The study provides new insights into the contrasting effects of a synthetic additive (tartrazine) and a natural compound (curcumin) on multiple organ systems. This differentiation can help in understanding the safety profiles and potential health impacts of these substances, which are widely consumed by humans.

Keywords: Histology, organs, tartrazine, curcumin, SD rats

Track:
Post COVID-19 Management

Bridging Standards: How Australian Food Companies Navigate Halal Certification in Non-Muslim Markets

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Abstract

Background – In the global food industry, Halal certification has become both a crucial standard and a significant challenge, especially for companies operating in non-Muslim-majority countries like Australia.

Purpose – This study explores how Halal facilitators within the Australian food industry navigate the segmented and complex requirements of Halal certification, highlighting their adaptive strategies and responses to operational constraints

Design/methodology/approach – Adopting a qualitative methodology, we conducted semi-structured interviews with key personnel from Australian food manufacturing companies involved in Halal compliance. Thematic analysis of the interview data revealed insights into the experiences, obstacles, and approaches these companies employ to meet the multifaceted requirements of Halal standards

Findings – Findings indicate that companies encounter considerable challenges, including complex supply chain adjustments, elevated compliance costs, and inconsistencies between certification authorities. Participants emphasized the critical role of effective cross-cultural communication with Halal certifiers and the necessity for specialised training to maintain certification adherence within production lines. Despite these challenges, the segmented nature of Halal standards offers potential market expansion opportunities when navigated adeptly.

Research limitations – A low sample size constrains this study's qualitative technique, which, while informative, prevents broader generalizations across other businesses and regions. Furthermore, the emphasis on operational strategy omits significant economic implications, including profitability and market share. Future studies ought to integrate quantitative analysis and longitudinal investigations to provide a more thorough comprehension of the global implications of Halal certification.

Originality/value – The study advocates for policy interventions to streamline certification protocols and enhance institutional support for companies entering the Halal market. This research enhances understanding of the operational and regulatory adjustments essential for Halal certification in non-Muslim countries, shedding light on the strategic and cultural considerations vital for successful compliance. The findings underscore the need for unified global standards and increased support mechanisms, providing valuable insights for industry leaders and policymakers focused on advancing international trade in Halal products.

Keywords: Halal Certification Strategies, Segmented Food Standards, Regulatory Adaptation in Non-Muslim Markets, Qualitative Analysis on Halal Industry,

CLOSING SPEECH

Assalamualaikum Warahmatullahi Wabarakatuh,

Excellencies, Presenters, Attendees,

Ladies and Gentlemen,

It is with great honor and delight that I deliver the closing remarks for this year's IHSATEC 2024: 17th HASIB. The conference has been managed successfully, with breakout sessions and presentations running smoothly and efficiently. Over the course of the event, we engaged in thought-provoking discussions and shared valuable research findings.

I extend my sincere gratitude to all participants, speakers, presenters, attendees, and session chairs from around the world for their meaningful contributions to IHSATEC 2024: 17th HASIB. A special thanks to the dedicated committee members for their tireless efforts in ensuring the success of this conference.

This year's IHSATEC emphasized the importance of expanding research in the fields of Halal studies across industry, business, and technology. The conference underscored the critical role of universities, higher education institutions, governments, society, and stakeholders in advancing the application of Halal studies across disciplines.

In closing, I hope IHSATEC 2024: 17th HASIB has provided valuable insights and strategies for navigating the challenges of our evolving world. May the knowledge shared, along with the connections and collaborations formed, lead to impactful partnerships in the future. Congratulations to the award recipients for best presentations, best papers, and all session chairs for their contributions.

Thank you for your participation. Stay safe, stay healthy, and I look forward to seeing you at our next event.
Best regards,

Assoc. Prof. Dr. Winai Dahlan
Conference Chair of IHSATEC 2024: 17th HASIB

Future Events

https://bit.ly/UpcomingConference-RSF

10th RESBUS

10th International Conference on Interdisciplinary Research on Education, Economic Studies, Business and Social Science (10th RESBUS)
https://www.ihsatec.com
Virtual Conference – February 18, 2025

9th ESBEM

9th International Conference on Entrepreneurship Studies, Business, Economy, and Management Science (9th ESBEM)
https://esbem.com
Virtual Conference – March 11, 2025

11th BEMSS

11th International Conference on Business, Economy, Management and Social Studies Towards Sustainable Economy (11th BEMSS)
https://www.bemssconference.com
Virtual Conference – April 22, 2025

9th IBEMS

The 9th International Conference on Interdisciplinary Business, Economy, Management, and Social Studies (9th IBEMS)
https://www.ibemsconference.com
Hybrid conference (Perth, Australia) – July 8-9, 2025

10th MASOS

10th International Conference on Management Studies and Social Science (10th MASOS)
https://www.masosconference.com
Virtual Conference – August 12, 2025

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