

SCIENTIFIC RESEARCH AND DISCOVERIES BASED ON THE UNDERSTANDING OF QUR'AN AND THE UNIVERSE

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International Institute of Islamic Thought (IIIT)
East and Southeast Asia (ESEA)
International Islamic University Malaysia (IIUM)

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PREFACE

The International Institute of Islamic Thought was established as an educational trust in 1981 to promote research and publications to aid in the education of the *ummah*. As part of its IOK agenda, the IIIT has consistently called for a critical evaluation of existing disciplines and their methodologies - a call for epistemological reform based on twin sources of knowledge i.e. revelation and the universe. The aim was to re-mould disciplines taught in universities that would project the Islamic worldview in those disciplines for the betterment of the *ummah* and humanity at large.

The late Ismail Raji al-Faruqi, one of the founders of the IIIT in his IOK-Principles and Workplan (1982) talked about the need to develop textbooks that required ‘mastery of both modern knowledge and Islamic heritage’ and based on a critical evaluation of both - to have creative synthesis. More recently another co-founder of the IIIT- the late AbdulHamid Abu Sulayman (who was 2nd Rector of the International Islamic University Malaysia from 1988-1998)- initiated the Textbook/Teaching Materials Project (TMP) that was meant to produce books to be utilised for courses being taught at the IIUM. This was backed up with generous research funding from the IIIT.

Since late 2017, the TMP has been introduced not only in the IIUM, but also in a few other institutions of higher learning. Funds are granted to academics teaching a specific course/s to produce a course-book that would be used as a main reference in a particular course/s. Proposals and manuscripts were reviewed and feedback conveyed to the author. In many ways, these books are still ‘a work in progress’. They are not meant for commercial purposes and have rather limited distribution. The aim is to utilise these materials in class, to receive further feedback from scholars and others and to keep improving these books until they become standard textbooks to be used in the courses taught.

The book that you have in your hands now is a result of these efforts. The IIIT East and SouthEast Asia Office is pleased to contribute to this project to realise the goals of its founders.

We look forward to constructive input for further improvement.

*IIIT East and SouthEast Asia Office
IIUM Gombak, Kuala Lumpur*

AUTHOR'S PROFILES



Prof. Dr. Imad Fakhri Taha Alshaikhli is a distinguished academic currently serving as a Professor at Duzce University in Turkey. He is an esteemed IEEE senior member with a rich educational background and a prolific career in academia and research.

Professor Imad completed his Bachelor of Science (Honors) in Mathematics and earned his Master of Science in Computer Science, both in Iraq. He further pursued his academic journey by obtaining a PhD from Pune University, India, in 2000.

His impressive career path includes various leadership roles and significant contributions to the field of computer science and engineering. From 2003 to 2005, Professor Imad served as the Head of the Department of Computer Information Systems at Alrafidain University College. In January 2006, he joined Gulf University in Bahrain and played an essential role as the Founding Dean of the College of Computer Engineering and Sciences. During his tenure, he introduced the CCNA certificate as part of the curriculum, positively impacting students' career prospects.

In November 2010, Professor Imad embarked on a new stage by joining the International Islamic University Malaysia (IIUM) at the Department of Computer Science within the Kulliyah of Information and Communication Technology. He assumed the role of Head of Research from 2013 to 2021, demonstrating his commitment to advancing research initiatives within the university. In recognition of his dedication and excellence in teaching, he received the Best Teacher Award in 2011.

His contributions extend beyond the classroom and into scholarly publishing and conference organization. Professor Imad has held significant editorial roles, including Editor-in-Chief of the International Journal on Advanced Computer Science and Technology Research (JACSTR) from 2011 to 2020 and Editor-in-Chief of the Arabic Renewal Journal. He has also served as the General Chair of the International Conference on Advanced Computer Science Applications and Technologies (ACSAT) since 2012.

Professor Imad has made significant strides in innovation, obtaining a US patent for his collaborative work with a PhD student on a smart traffic light with an accident detection system on December 2, 2014. His scholarly output is extensive, with Professor Imad having authored over 200 articles, conference papers, book chapters, and several books. Furthermore, his dedication to research is evident through his successful acquisition of over 10 research grants. He has also been instrumental in mentoring and guiding over 50 postgraduate students in their academic pursuits.

In 2023, Professor Imad Fakhri Taha joined Duzce University in Turkey, further enriching his international academic journey and continuing to contribute significantly to the computer science and technology field.



Prof. Datin Dr. Roslina Othman graduated with a PhD in Information Retrieval from University of Wales-Aberystwyth, Wales, UK. She specializes in Information Retrieval, Semantic Technology, Bibliometrics, Artificial Intelligence Literacy, Knowledge Management, and Futures Study. Currently, she is the Head, Semantic Body of Knowledge and Technology Research Unit at the International Islamic University Malaysia, the Lifetime Fellow Member, International Society for Development and Sustainability (ISDS), and a member, Research Data Alliance. Previously, she was the the President, Persatuan Capaian Maklumat dan Pengurusan Pengetahuan, PECAMP, Malaysia (Information Retrieval and Knowledge Management Society).

She has teaching experiences at several universities including University of Bahrain, Kingdom of Bahrain. At Jazan University, Kingdom of Saudi Arabia, she initiated the Quality Academic Assessment for the Women Section, College of Computer Science and Information Systems. She is a Visiting Professor and External Assessor, Management Science University. She was an Adjunct Professor, Swinburne University of Technology Sarawak Campus and a Visiting Professor at Hanoi University of Culture, Vietnam.

She has been sponsored under the EU Grant FP7 and H2020 to present her proposal on semantic-based search engines and attended research meetings and networking sessions in Luxemburg, Brussels, Austria, and Sweden. She has led research projects under TechnoFund, FRGS, ERGS, PRGS, MIRGS, and Pinnacle grants, contributed to the Islamisation in Information Science. She is also a reviewer for the Qatar National Research Foundation.

She has delivered talks on PhD supervisions and benchmarking of PhD by Research Program. She has supervised 53 PhD and Master's students, and examined 40 PhD thesis (Local & International). She has conducted 60 sessions (Local & International) Workshops/Seminars related to academic matters and research methods. She founded WiSeMantiq search engine (MTE Gold Medal and INNOPAC Special Award), Minhajul Abidin's Maqam-based triggers, and Malek Bennabi's Novelty Ruler. She is currently the director for the project entitled "Propagation of Truth".

She has 150 publications, and her book, "Trends in Information Retrieval System" has been used as a textbook and a reference book at several universities. Her publications have been used as references for teaching at universities in USA, Canada, Taiwan and Dominican Republic, and she has presented papers at national and international conferences in 15 countries. She is now completing her book, "Information Retrieval: Concepts, Methods, and Measures".



Dr. Ts. Noor Azura Zakaria is an Assistant Professor who is currently a lecturer in Department of Computer Science, Kulliyah of Information and Communication Technology (KICT), International Islamic University Malaysia (IIUM). She obtained her PhD from Universiti Teknologi Malaysia (UTM) in 2018. Her research expertise is in Software Engineering and Software Process Tailoring. Dr. Noor Azura has been a member of the international professional society, IEEE, since 2022. Additionally, she holds memberships in prominent local bodies such as the Malaysian Software Engineering Interest Group (MySEIG) and the Information Retrieval and Knowledge Management Society (Persatuan Capaian Maklumat dan Pengurusan Pengetahuan - PECAMP). With her passion in Software Engineering field, she has earned several certifications, including the prestigious Certified Professional for Requirements Engineering (CPRE) and Certified Tester Foundation Level (CTFL).

With her extensive knowledge and experience, she has made significant contributions to the development of innovative software solutions. Currently, she is dedicated to developing a groundbreaking telehealth platform specifically designed to cater to the needs of autistic children and children with learning disabilities. She has been awarded numerous research grants both locally and internationally, and also produced numbers of publications including journals, conference papers and book chapters. highlighting her expertise and dedication.

Currently, she holds Head of Responsible Research and Innovation position since 2021 in KICT. She also holds the esteemed position of editorial board member for the International Journal on Perceptive and Cognitive Computing (IJPCC). Furthermore, she takes on the role of Chief Editor for the renowned KICT Newsletter.

SCIENTIFIC RESEARCH AND DISCOVERIES BASED ON THE UNDERSTANDING OF QUR'AN AND THE UNIVERSE

Muslim scholars, scientists, and students of knowledge today are navigating a world that is increasingly defined by rapid scientific advancement, technological disruption, and the search for meaning amid complex global challenges. As they engage in this contemporary intellectual landscape, there is a growing realization that the Qur'an beyond its role as a spiritual and legal guide contains profound insights into the natural world, human cognition, biological structures, and cosmological truths. The Qur'an repeatedly invites believers to observe, reflect, contemplate, and reason to explore the universe as a manifestation of divine signs (āyāt) and to deepen their understanding of creation as a means to strengthen their awareness of the Creator.

It is this foundational epistemological vision that inspired the creation of this book: **Scientific Research and Discoveries Based on the Understanding of Qur'an and the Universe**.

The central aim of this work is to revive and expand the discourse on how Qur'anic revelation can inform and inspire scientific discovery. Historically, Muslim scholars of the Islamic Golden Age were deeply influenced by the Qur'an's worldview. This book begins with a discussion on the nature of scientific research and discovery, drawing from contemporary definitions and methodologies. One of the book's key contributions is its detailed presentation of the Qur'anic model of research through the story of Prophet Ibrahim (peace be upon him). This model is revisited throughout the book as an archetype of Qur'anic inquiry. The Qur'an, in its frequent use of verbs such as *yatafakkarūn* (they reflect), *ya'qilūn* (they reason), *yasma'ūn* (they hear), *yubsiirūn* (they see), *yafqahūn* (they comprehend), and *yatadabbarūn* (they ponder), insists that true belief is deeply tied to empirical and intellectual engagement with the world.

This book is the product of years of teaching, inquiry, and academic engagement at the International Islamic University Malaysia (IIUM), particularly at the Kulliyah of Information and Communication Technology. We are deeply indebted to the university's leadership, the Research Committee, and colleagues who encouraged the writing of this book and contributed to its vision through feedback, debate, and collaboration.

May Allah bless this work, accept it as a form of continuous charity (*sadaqah jāriyah*), and make it a means of drawing closer to His mercy. May peace and blessings be upon our Prophet Muhammad صلى الله عليه وسلم, the best of creation, the teacher of truth, and the guide to both spiritual and intellectual enlightenment.

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