



**TOWARDS THE
KNOWLEDGE SOCIETY
IN THE ISLAMIC WORLD:**

*KNOWLEDGE PRODUCTION, APPLICATION
AND DISSEMINATION*

*Proceedings of the 17th IAS Science Conference
organised in Shah Alam, Selangor/Malaysia;
14-17 December 2009*

*includes proceedings of the IAS Symposium on
Knowledge Society for the Innovation Economy*

8-9 December 2010

Shah Alam, Selangor, Malaysia

**MEHMET ERGIN
MONEEF R. ZOU'BI
EDITORS**

Published by
**ISLAMIC WORLD ACADEMY OF SCIENCES (IAS)
AMMAN, JORDAN**



TOWARDS THE KNOWLEDGE SOCIETY IN THE ISLAMIC WORLD: KNOWLEDGE PRODUCTION, APPLICATION AND DISSEMINATION

Proceedings of the 17th IAS Science Conference on
**Towards the Knowledge Society in the Islamic World:
Knowledge Production, Application and Dissemination**
organised in Shah Alam, Selangor/ Malaysia;
14-17 December 2009

Edited by

Mehmet Ergin
and
Moneef R. Zou'bi

Published by



ISLAMIC WORLD ACADEMY OF SCIENCES (IAS)
AMMAN, JORDAN.

Publication sponsored by



ISLAMIC DEVELOPMENT BANK (IDB)
JEDDAH, SAUDI ARABIA



OPEC FUND FOR INTERNATIONAL
DEVELOPMENT (OFID)
VIENNA, AUSTRIA

CONTENTS

[Preface](#)

[Acknowledgements](#)

[Sponsors of the IAS 2009 Conference](#)

[IAS Shah Alam/ Selangor Declaration](#)

[Conference Report](#)

PART ONE: STATEMENTS AT THE INAUGURAL SESSION

[Address of Hon. Dr Halimah Ali, Selangor State Minister of Education and Higher Education](#)

[Message of His Royal Highness Prince El-Hassan Bin Talal of Jordan, Founding Patron of the Islamic World Academy of Sciences](#)

[Message of H E the President of the Islamic Republic of Pakistan, and Patron of the Islamic World Academy of Sciences](#)

[Address of H E Prof. Abdel Salam Majali, President of the Islamic World Academy of Sciences](#)

PART TWO: THE KEYNOTES

[Educate, Inspire and Connect the Lindau Nobel Laureates Meetings as a Cross-fertilising Platform](#)

Wolfgang Schürer

[Building a Knowledge Society: Challenges and Opportunities](#)

Atta-ur-Rahman

PART THREE: THE HUMAN FACTOR & SYMPOSIUM ON WOMEN AND SCIENCE

[Human Capital Development for the Knowledge \(Innovation\) Economy](#)

Omar Ibn Abdul Rahman

[Knowledge Society and the Status of Women in Science in Malaysia](#)

Aini Ideris

[Woman and Science in the Public Sector: Future Outlook](#)

Khatijah Yusoff

[Malaysia-Imperial College Proteomics Research and Training Programme for Young Scientists in the Islamic World](#)

Judit Nagy

[Engendering the Knowledge Society in Malaysia: Indicators of Islamic Women Participation](#)

Sharifah Hapsah Shahabudin

**PART FOUR: WHAT IS THE SCIENCE AND TECHNOLOGY
ATLAS OF THE OIC?**

[The Atlas of Islamic World Innovation \(AIWI\)](#)

Mehmet Fatih Serenli

[The Landscape of Science in the Islamic World: Historically and
Contemporaneously](#)

Ehsan Masood

**PART FIVE: KNOWLEDGE SOCIETY AND THE BUSINESS
SECTOR**

[Addressing the Challenges of the Knowledge Society: Charting the
Way Forward for OIC Countries](#)

Mohd Azzman Shariffadeen

[Opportunities and Challenges in Creating a Knowledge-Based
Economy: A Viewpoint from the International Private Sector](#)

Qusai Sarraf

[Knowledge Workers in a Globalised World: From America to South
East Asia](#)

Michael Grimes

[Academic Industry Partnership Towards the Innovation Economy: A
Proposed Best Practice](#)

Rosti bin Suruwono

PART SIX: KNOWLEDGE SOCIETY: POLICY ASPECTS

[Science and Technology Landscape of the OIC: The Arab Countries
in Focus](#)

Adnan Badran

[R&D and KE Performance in OIC Member Countries](#)

Mehmet Fatih Serenli

[Science and the Information Society](#)

El Tayeb Mustafa

[Hubs of Knowledge and Information Flows in Islamic Countries:
Challenges and Potentials](#)

Hussam H. Salama

PART SEVEN: KNOWLEDGE DISSEMINATION FORUM

[Renaissance of Science and its Integration with Islamic Thought](#)

Mazhar M. Qurashi

[A Vehicle for the Dissemination of Knowledge: Doha Qur'anic
Garden](#)

Kamal Batanouny

[Some Neglected Factors in Science Planning in the Islamic World](#)

Mehdi Golshani

[Nanotechnology: The Urgent Necessity for OIC](#)

Noor Butt

[Design, Simulation and Fabrication of Polysilicon-based Piezoresistive Microcantilever Biosensor for Human Stress Measurement](#)

Anuar Ahmad

[Health and Human Well-being: An Extrapolation into the Future](#)

Iqbal Parker

[Enhancement of Nuclear Knowledge for Application in Medicine, Particularly in Positron Emission Tomography](#)

Syed Muhammad Qaim

[Quality of Medical Education: How to Assess Customer Satisfaction? How Relevant is the ISO 9001-2008 to Educational Quality Assessment?](#)

Qurashi Ali

[The Living Dead](#)

Mohammad Shamim Jairajpuri

[Islamic World Through the Societies of Knowledge: Vision of Morocco](#)

Karim Lahlaoui

[The Challenge to Access a Knowledge-Based Economy: The Case of Algeria](#)

Mostefa Khiati

PART EIGHT: KNOWLEDGE AND THE MEDIA FORUM

[Genome-based Discovery Platform Uncovers Biotechnology Potential of Papaya and Rubber Genomes](#)

Maqsudul Alam

[Towards the Knowledge Society: The Gambia as an OIC Country Starting-up](#)

Muhammadou M. O. Kah

PART NINE: KNOWLEDGE PRODUCTION FOR DEVELOPMENT

[Towards the Knowledge Society in the Islamic World: Knowledge Production and Dissemination through Joint Research](#)

Hammadi Ayadi

[Views Regarding Academic Publishing in the Information Age](#)

Arif Ergin

[Science Growth in Iran in the Last Decade](#)

Mohammad Abdollahi

**PART TEN: INTERNATIONAL SYMPOSIUM ON
KNOWLEDGE SOCIETY FOR THE INNOVATION
ECONOMY, SELANGOR, MALAYSIA (8-9 DECEMBER 2010)**

[Innovations in Postgraduate Research Training within Life Sciences at
the University of Manchester](#)

Raymond Boot-Handford

[Capturing Innovation – The Imperial College Model](#)

David Leak

[From Research to Innovation Routes to Exploiting the Intellectual
Capital in Universities](#)

Tony Cass

[S & T Landscape in the OIC: Role of the Islamic World of Sciences
\(IAS\)](#)

Moneef Zou'bi

[Building Scientific Capacity and Increasing Innovation in Developing
Countries](#)

Abdallah Daar

[Innovation in Traditional Milieus — Medicinal Plants of Mauritius
'From Academic Research to a Business Model'](#)

Ameenah Gurib-Fakim

[Nano innovation: Innovation in Nanotechnology: Where is it Taking
us?](#)

Munir Nayfeh

[Women in Life Sciences at the University of Manchester](#)

Alison Gurney

[Developing Genuinely Innovative People](#)

Jim Platts

[Managing a Commercial Oil Palm Tissue Culture Laboratory:
Past Reminders and Future Challenges](#)

Sharifah Shahrul Rabiah Syed Alwee

PART ELEVEN: APPENDIXES

Appendix A:

[2009 Conference Committees](#)

Appendix B:

[Chairpersons of 2009 Conference Sessions](#)

Appendix C:

[2009 Conference Participants](#)

Appendix D:
[Patrons, Honorary Fellows, Fellows of IAS](#)

Appendix E:
[Laureates of the IAS-COMSTECH Ibrahim Memorial Award](#)

Appendix F:
[IAS Council \(2009-2013\) and Executive Staff](#)

Appendix G:
[Deceased IAS Fellows](#)

Appendix H:
[Publications of the IAS](#)

Appendix I:
[IAS Supporters](#)

Appendix J:
[IAS Waqf](#)



**Some of the participants in the 17th IAS Science Conference;
Shah Alam, Selangor/ Malaysia; 14-17 December 2009.**

Copyright © Islamic World Academy of Sciences, Amman, Jordan; 2016.
All rights reserved. No part of this publication may be reproduced or transmitted in any form
or by any means, without the permission of the Islamic World Academy of Sciences.

First published in 2016 by

Islamic World Academy of Sciences (IAS)

PO Box 830036 Zahran

Amman 11183 – Jordan.

Telephones: + 9626 55 22 104

+ 9626 552 33 85

Fax: + 9626 55 11 803

Email: ias@go.com.jo

Web Page : <http://www.iasworld.org>

Type-setting at the Secretariat of the Islamic World Academy of Sciences, Amman, Jordan

Jordan National Library Classification Deposit Number: 2010/5/1793

Descriptors:/

ISBN 978-9957-412-22-7

*** The views expressed in this book are of the authors, and not necessarily of the editors, or the Council or the General Assembly of the Islamic World Academy of Sciences. The Islamic World Academy of Sciences, by providing a free forum for the exchange of scientific opinions and being a non-political organisation, does not hold itself responsible for the statements made or ideas expressed by the contributors.*

For a note on the editors, see below.

Jordan National Library Classification Deposit Number: 2010/5/1793

Knowledge Society (2009: Malaysia)

Towards the Knowledge Society in the Islamic World: Knowledge Production, Application and Dissemination\ Mehmet Ergin, Moneef R. Zou'bi – Amman: Islamic World Academy of Sciences, 2010.

Descriptors:

ISBN 978-9957-412-22-7

Type-setting at the Secretariat of the Islamic World Academy of Sciences, Amman, Jordan.

Prof. Mehmet Ergin was for many years a professor of Chemical Engineering at Hacettepe University in Ankara (Turkey). He is a Founding Fellow (1986) and current Vice-President of the Islamic World Academy of Sciences. He is a former President of the Turkish Scientific and Technical Research Council (TUBITAK) and a former President of the Turkish Atomic Energy Authority. He received his PhD in Physical Chemistry from Glasgow University in the UK, back in 1969.



Dr Moneef R. Zou'bi is the Director General of the IAS. Formerly, he occupied the positions of Technical Affairs Director and Deputy Executive Director of the IAS. He studied at the University of Brighton, Loughborough University and the University of Malaya, to acquire his degrees in engineering and Science and Technology Studies, respectively. His academic interests include information technology, the environment as well as science and technology policy studies. He has developed an interest in the history of Islamic science since joining the IAS in 1990.



IAS PUBLICATIONS

Medical Journal of the Islamic World Academy of Sciences (Quarterly)

www.medicaljournal-ias.org

Editor: Prof. Şinasi Özsoylu

Co-Editors: Şinasi ÖZSOYLU, Mehmet O. YENİDÜNYA

Associate Editor: Fuat Emre CANPOLAT

PUBLISHED CONFERENCE PROCEEDINGS

Food Security in the Muslim World

Science and Technology Policy for Self-Reliance in the Muslim World

New Technologies and Development of the Muslim World

Technology Transfer for Development in the Muslim World

Science and Technology Manpower Development in the Islamic World

Environment and Development in the Islamic World

Health, Nutrition and Development in the Islamic World

Water in the Islamic World: An Imminent Crisis

Science and Technology Education for Development in the Islamic World

Information Technology for Development in the Islamic World

Biotechnology and Genetic Engineering for Development in the Islamic World

Materials Science and Technology and Culture of Science

*Energy for Sustainable Development and Science for the Future of the Islamic World and Humanity
Science, Technology, and Innovation for Socioeconomic Development: Towards Vision 1441*

Higher Education Excellence for Development in the Islamic World

*Science, Technology and Innovation for Sustainable Development in the Islamic World: The Policies and
Politics Rapprochement*

Towards the Knowledge Society in the Islamic World: Knowledge Production, Application and Dissemination

BOOKS

*Découvertes en pays d'Islam – Arabic Edition Published by the
Islamic World Academy of Sciences*

Ahmed Djebbar (Author)

Reverse Engineering: The Permissible but not Well-Recognized

Mohamed B. E. Fayez (Editor)

Intellectual Property Rights: An Introduction for Scientists and Technologists

Mohamed B. E. Fayez (Editor)

Islamic World Academy of Sciences Outreach

Moneef R. Zou'bi (Editor)

Islamic World Academy of Science Declarations

Moneef R. Zou'bi (Editor)

Personalities Noble

Moneef R. Zou'bi (Editor of the Second Revised Edition)

Islamic Thought and Modern Science

Mumtaz A. Kazi (Author)

Qur'anic Concepts and Scientific Theories

Mumtaz A. Kazi (Author)

ISBN 978-9957-412-22-7