

Newsletter

ISLAMIC ACADEMY OF SCIENCES



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Scene set for Manpower Conference

Preparations are advancing well for the fifth IAS Conference, "Science and Technology Manpower Development in the Islamic World", scheduled for Amman (Jordan), during 16-19 December 1991, under the patronage of His Royal Highness Crown Prince Al-Hassan of Jordan, Patron of the Islamic Academy of Sciences.

Over one hundred and fifty participants are expected to take part in the four-day activity which is sponsored by the Academy, the Islamic

Foundation for Science, Technology and Development IFSTAD, the Islamic Development Bank IDB, the Royal Scientific Society RSS as well as the World Bank.

The Conference, which will be convened at the Amman Plaza Hotel, will mark the highlight of the Academy activities for 1991, and would hopefully provide the appropriate academic forum for the exchange of views on the subject of "Manpower".

"Environment" theme for '92

The Academy's Secretariat has recently received Malaysia's formal invitation to host the sixth IAS Conference, which will be under the general title of, "Environment and Development in the Islamic World".



Prof. Omar Abdul Rahman

An Academy Science Committee has recently been assigned by the IAS Council to work out the various technical and organisational conference details.

The Committee which is made up of Prof. Shamsher Ali FIAS, Prof. Fakhruddin Daghestani FIAS, Prof. Ali Kettani FIAS, Prof. Badri Ibn Mohammad FIAS as well as Prof. Ahmad Nawawi Ayob FIAS as Chairman, has met in Amman during September 1991, and has worked out the preliminary details of the Academy's Conference '92.

The conference itself is scheduled to take place during August 1992 in

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Dr. Hamid Al-Ghabid

OIC Secretary General visits Amman

The Secretary General of the Organisation of Islamic Conference OIC, His Excellency Dr. Hamid Al-Ghabid has recently paid a two-day visit to Amman, Jordan, as part of a tour of a number of OIC member states.

His Majesty King Hussein received Dr. Al-Ghabid and his delegation, who briefed His Majesty on the various activities of the OIC.

These include the OIC's 20th Ministerial Conference, which took place during early August in Istanbul, as well as the next OIC summit which will be held in Senegal, during early December.

The OIC foreign ministers meeting in Istanbul discussed the basic economic and social issues of concern to OIC member countries, including the grave financial and economic difficulties facing the less developed Islamic countries.



IAS Council in Session

IAS Council convenes

The Council of the Islamic Academy of Sciences held its eleventh meeting at the Academy Secretariat in Amman during 29-30 June, 1991.

The Council reviewed an extensive agenda over the duration of the two day meeting, covering such matters as the activities of the IAS Secretariat, the Academy's finances and the 1991 Conference, "Science and Technology Manpower Development in the Islamic World".

The Council also reviewed the IAS's future plan of action, gratefully accepting the invitations of Malaysia and Indonesia to host the 1992 and 1993 Academy conferences, respectively.

The Council also assessed the possibility of organising specialised training programmes for engineers and technicians in Turkey during 1992.

The Academy Council is made up of the President of the Academy Prof. Mumtaz Kazi FIAS, Vice-Presidents; Prof. Mehmet Ergin FIAS, Prof. Saleh Al-Athel FIAS, Prof. Mohamed Kamel Mahmoud FIAS, Secretary General; Prof. Ali

Kettani FIAS and Treasurer Prof. Fakhruddin Daghestani FIAS. The other Council members are Prof. M. Shamsheer Ali FIAS, Prof. Souleymane Niang FIAS, and Prof. Achmad Baiquni FIAS.

The Secretariat of the Academy was represented at these meetings by Dr Anwar Bilbeisi, who is the Executive Director General and Eng. Mounneef Zou'bi, the Academy's Technical Affairs Director.

Election of new Fellows

The Academy Secretariat has recently sent out the ballots, for the election of new Academy Fellows for 1991.

The Curriculum Vitae of all twenty three nominees were also sent out with the ballots.

IAS Fellows are allowed to vote for 10 nominees out of the 23 listed on the ballot, since 1991 marks the start of a two-year election period.

The deadline for receiving the ballots back by the Academy Secretariat in Amman is 15th November, 1991.



Qasem appointed minister

Prof. Subhi Qasem FIAS has recently been appointed Minister of Agriculture in the government of Jordan.

An IAS Fellow since 1988, Prof. Qasem was previously a professor of agriculture at the University of Jordan.

Prof. Qasem graduated from the University of Minnesota, St Paul-Minneapolis, with a PhD in Plant Pathology and Plant Breeding in August 1959.

Since, Prof. Qasem has occupied various academic and administrative posts at the University of Jordan, the last of which was the Deanship of Faculty of Graduate Studies in 1986.

Prof. Qasem has numerous publications covering various aspects of agricultural sciences, agricultural policy, and management of agricultural research and development in developing countries.

Prof. Qasem outstanding services to science in the third world, including many commissions by UNDP and UNESCO, have been internationally recognised culminating in the Medal of the Kawkab (Star) award, which was bestowed upon Prof. Qasem by His Majesty King Hussein Ibn Talal of Jordan.

IDB grants Jordan \$ 7.5m

The Islamic Development Bank has recently agreed terms with some governments of its member states whereby it would finance some imports to these states, worth around \$170m. Jordan, the country which hosts the Secretariat of the Islamic Academy of Sciences, is said to get \$7.5 million.

A statement from the IDB has also said that the bank would give grants worth \$ 692,000 to two poor Muslim countries: Chad and Somalia.

According to the statement, the grant to Jordan, as well as those to Uganda, which will receive \$5 million, and Lebanon, which will receive \$10 million, will be allocated to finance the purchasing of crude oil from other IDB member states.

The statement also said that Algeria would get \$13 million to finance the import of various petrochemical products, whilst Pakistan will receive over \$30 million to finance crude and palm oil purchases from Saudi Arabia and Malaysia, respectively.

On a different level, the Academy has recently agreed terms with the Islamic Development Bank IDB, whereby the latter would co-sponsor the Academy's next conference, "Science and Technology Manpower Development in the Islamic World", which will be held in Amman, Jordan during 16-19 December, 1991.

The Academy and the IDB have co-operated in the past, jointly sponsoring the IAS's fourth conference, "Technology Transfer for Development in the Muslim World", which was held in Antalya, Turkey during November, 1990.

EDITORIAL LETTER

The need for collective Islamic action

The winds of change that have recently swept the world have affected many, including Islamic, countries.

A new sense of realism seems to be emerging among the scientists and decision makers of the Islamic World. They seem to have taken stock of things and have come to appreciate the dire state some of our countries are in.

One of the great facts to have been re-emphasised by these events, is that no single Islamic country can really achieve sound development on her own or produce its needs solely by its own means. For a country to co-operate fully with her neighbours, as is happening the world over, not only makes economic sense, it fulfills an extensive list of human and social needs, also.

Co-operation is also very important among the various sectors within a country. Industry, institutes of higher education, research and development institutions as well as the central government need to co-operate fully to reach the science and technology goals of the country.

Another important fact, is that technology was and remains a crucial strategic variable for rapid socio-economic development in today's increasingly competitive world. If the use of technology can be properly planned, executed and monitored, it would be the key to a well-off society.

For an Islamic country to qualify to co-operate fully with her neighbours in the area of S&T, its policy makers have to have ready answers and ideas on the following, among many, five areas of the development strategy:

- a) It has been proven time and again, that the success of any development process largely depends on the preliminary research carried out before hand. It does help greatly if the decision makers in any country have access to reliable data, i.e. know how good/bad a particular aspect of the development process in their country is;*
- b) In determining the fields of priority in science and technology, it would be a mistake to follow an approach which does not take into account the status quo S&T setup in the country, its advantages and drawbacks;*
- c) In many Islamic countries, a trend has emerged to assign the S&T policy of the country to a particular ministry or institution, which takes charge of the formulation, planning and sometimes the implementation of the S&T policy. Although this system makes economic sense, it would nevertheless be far more efficient for a country to adopt a decentralised, "S&T think-tank" system for policy formulation where the priorities would be to promote competitiveness and productivity;*
- d) A fundamental concept of any development strategy is manpower. Without the meticulous planning and sound appreciation of the S&T manpower assets and needs of a country, any planning strategy would be have very little authenticity; and*
- e) The concept of technology management needs to be looked at anew. The Islamic World has the experts and the experiences, and most of the 45 OIC-member states can and need to adopt this concept, which can "manage" a long list of technological processes.*

The concept of Leadership

The following is a précis of an article written by Prof. Abdel-Salam Majali FIAS, and presented at the 1990 IAS Conference.

Leadership is the ability to show the way, to guide or conduct, to direct and govern, to influence the actions or opinions of others. Ibn Khaldoun said; "Human social organisation is something necessary". The philosophers expressed this fact by saying man is (political) by nature.

Through co-operation, the needs of a number of persons, many times greater than their own (number), can be satisfied. When mankind has achieved social organisation... and civilisation in the world has thus become a fact, peoples need someone to exercise a restraining influence and keep them apart, for aggressiveness and injustice are in the animal nature of man. The person who exercises a restraining influence... must be one of themselves.

Ibn Khaldoun shares an acute insightfulness with men of diverse professions who not only excelled in particular "science" but actively concerned themselves with the basic features of man and society.

Leadership is both a science and an art. It is a dynamic activity that can transform a static administrative organ into a forceful and mobile one. Leadership consists of a number of integrated skills and aptitudes, which, together with individual attitudes, make up the personality of a leader. People in general do not object to being, and do better when led creatively and properly. The leader's responsibility is to activate the energies of his

institution, unite the minds of those who work in it, co-ordinate their efforts, and encourage them to perform their roles willingly and successfully. Leadership is regarded as a human activity, fostered by a human institution and intended to promote organised goals and objectives.



Prof. Abdel Salam Majali

Leadership implies a deep sense of responsibility and dedication to serve others and to enable them to realise fully their inherent capabilities. It also means the ability to take initiatives and to respond to the initiative of others. A leader is one whose intellectual aptitudes qualify him to "be ahead", to lead others towards clear cut objectives undeterred by contingent obstacles and undistracted by minor details. A leader does not deal with the management of material resources, but with people themselves in a changeable world. To be successful, a leader must take all human and natural variables into consideration.

The need for collective Islamic action in S&T, as in all other fields, is great. As great, in actual fact, as the scientific legacy our Ummah has inherited. OIC-member states have the human, technological and monetary resources, as individual states, for a sound and rapid development. If however, they act collectively, or as groups within the OIC umbrella, they would develop faster and even benefit the very fabric of society.

Countries are grouping together throughout the world, countries that have far little in common than OIC-member states. Co-operation is surely the way to ensure that the Islamic world at least stays level with an ever technologically advancing world.

IAS establishes a "Trust Fund"

In pursuance of the decisions of the General Assembly of the Academy, adopted at Antalya (Turkey), last November, the IAS Secretariat has recently established an independent, "Trust Fund" at one of the local Jordanian banks.

It is hoped that governments, institutions and individuals throughout the Islamic World and beyond would be encouraged to contribute to the Fund, proceeds from which, would go to finance the various activities of the Academy.

The details of the Academy Trust Fund are:

A/C Name : The IAS Trust Fund
A/C Number : 34765/5/710
Bank : Arab Bank
Branch : Fifth Circle
Telephone : 822901-4
Telex : 23095 ARAB FC
Facsimile : 962.6.822905

Pollution threatens water resources

The following article is a précis of some IDRC Reports, the magazine of the International Development Research Centre of Canada.

The relentless demand of an increasing global population is placing an incredible strain on existing water resources. This strain has become critical in the larger urban centres of many developing countries. Here, water supplies are not only subject to overuse but contamination as well. Many cities are having problems with both the availability and the quality of water.

A combination of limited resources and poor water management have resulted in widespread pollution, scarcity, and even land subsidence—the actual sinking of cities caused by excessive groundwater extraction.

One of the main features of global evolution in the past 50 years has been, and will continue to be, the phenomenal growth of huge urban centres. There are currently as many as 45 cities throughout the Third World with populations nearing, or in excess of, 3 million people.

Population is one of the major causes of water contamination. The water on which cities rely on is often polluted by enormous amounts of human waste, sometimes channeled untreated into open bodies of water. Other cities depend on reservoirs that cannot provide enough water for the mushrooming populations forcing people to find alternative, unregulated sources of water.

Urban areas also use large amounts of water for industrial purposes. Once used, these waters suffer significant quality degrada-

tion. The polluted waters are then dumped into rivers, lakes, and coastal waters hitting the environment with the double blow of reduced quantity and quality of water. regrettably, anti-pollution legislation in developing countries is often vague or nonexistent. Where it does exist, it can be easily circumvented.

In most Third World countries, the economy and environment are caught in a negative cycle. To meet their financial obligations, many countries have concentrated on the production of cheap export goods. This prevalence of industry in urban areas much of it in the form of multinational companies is bringing about considerable damage to the environment.

Meanwhile, government funding for programmes, such as environmental protection, is often unavailable or way down on the priority list. Many national and urban governments do not have the money, or the will, to make a longterm commitment to their natural resources.

Some heavily industrialised, large urban centres like Sao Paulo, Calcutta, Mexico City, and Cairo have a particularly poor record of environmental protection of their water resources.

Cities, through their expanding populations and industrial exploitation, are damaging or even destroying their life-giving water resources. These urban areas are only beginning to realise that they cannot keep going to the same well.

(Continued from page 1)

Kuala Lumpur, partly to complement perhaps the proceedings of the UN conference on the Environment and Development UNCED, scheduled for June 1992, in Rio de Janeiro, Brazil.

The conference will be a joint activity between the Academy, Ministry of Science, Technology and the Environment of Malaysia as well as the Islamic Foundation for Science, Technology and Development.

Other international, regional and local institutions are also expected to take part in this activity which is scheduled for August, 1992.

Jordan pays dues to IAS

The government of the Hashemite Kingdom of Jordan has recently paid up the second instalment of its annual grant for the current year, to the Islamic Academy of Sciences.

The Executive Director General of the Academy, Dr Anwar Bilbeisi expressed his appreciation of the Jordanian initiative, and lauded the stand of the government of Jordan in its continuous support of the Academy.

IAS participates in COMSTECH meeting

The Executive Director General of the Islamic Academy of Sciences, Dr Anwar Bilbeisi, has recently took part in the fifth meeting of the COMSTECH, OIC Ministerial Committee on Scientific and Technological Co-operation among Islamic countries.

The EDG presented the IAS report to the meeting, which highlighted the activities of the Academy over the last two years.

The COMSTECH meetings which take place, on an biannual basis, normally outline the S&T plan and budget of the COMSTECH and its sister organisations for the following two years.



**Prof. M. Shamsher Ali
FIAS**

Prof. Mohammad Shamsher Ali FIAS is an elected Fellow of the Islamic Academy of Sciences since 1988.

A professor of Physics at Dhaka University for many years, Prof. Shamsher Ali was educated at Dhaka University, and at the University of Manchester in the United Kingdom, from where he obtained his PhD in Theoretical Nuclear Physics in 1962.

Prof. Shamsher Ali, who is 51, has authored/co-authored 5 books as well as more than 30 scientific articles including many on science education through the media. He also presented over two hundred television and radio programmes dealing with a wide array of scientific topics. He has presented a number of papers at national and international meetings on the role of "Distance Learning" in science education.

Apart from being a Fellow of the IAS, Prof. Ali is a Fellow of the Bangladesh Academy of Sciences, the Third World Academy of Sciences and the New York Academy of Sciences.

Of the previous posts occupied by Prof. Ali, was that of Senior Scientific Officer and Director of Atomic Energy Commission of Bangladesh.



**Prof. Adnan Badran
FIAS**

Prof. Adnan Badran FIAS is an elected Fellow of the Islamic Academy of Sciences.

At present, Prof. Badran is the Assistant Director General for Science at UNESCO, Paris.

Formerly, Prof. Badran has served as Minister of Agriculture in the Government of Jordan as well as Secretary General of Jordan's Higher Council for Science and Technology HCST.

A professor of Biology for over twenty years, Prof. Badran is a past President of Yarmouk University, Irbid, Jordan.

Prof. Badran, who was educated at Michigan State University, is the author/editor of more than 17 books and 42 research papers in the field of Biology, Economic Development, Education and International Co-operation.

The academic and educational achievements of Prof. Adnan Badran have been internationally recognised culminating in the Jordanian al-Nahda and Al-Yarmouk Medals.



**Prof. Mahmoud Hafez
FIAS**

Prof. Hafez is an elected Fellow of the Islamic Academy of Sciences since 1988.

Prof. Hafez graduated from Cairo University in 1940, with a PhD in Sciences.

He was appointed member of staff at Cairo University in 1935, and promoted to a full Professor in 1953. Since, he has been Head of Department of Entomology at Cairo University, Advisor to the Egyptian Atomic Energy Organisation and Under-Secretary of State, Ministry of Scientific Research, Egypt, 1966-1969.

Prof. Hafez is the author/co-author of many books on Zoology, Entomology and has over one hundred and fifty published research papers on the same topics and others.

Prof. Hafez is the President of the Entomological Society of Egypt, the Egyptian Science Association, the Egyptian Society of Parasitology and the Egyptian Society of the History of Science.

Prof. Hafez is the awardee of Egyptian State Merit Prize for Science, Egyptian Order of Merit as well as the Egyptian Order of Science and Arts, which was awarded to him in 1981.



Prof. Abdul Latif Ibrahim FIAS

An elected Fellow of the Islamic Academy of Sciences since 1988, Prof. Ibrahim is Dean and Professor, Faculty of Veterinary Medicine and Animal Science, University Pertanian, Malaysia.

Prof. Abdul Latif Ibrahim, who is 50, is a member of staff at the University Pertanian since 1973. Prof. Ibrahim was educated at Bangladesh Agricultural University, University of Hawaii and University of California from where he obtained his PhD in Microbiology.

Of an extensive list of research work, Prof. Ibrahim has concentrated on the study of the Newcastle Disease, and other related phenomena of veterinary medicine.

Prof. Ibrahim also has an extensive teaching programme, teaching Virology and Immunology to students reading Veterinary Medicine at the University Pertanian (Malaysia).

Prof. Ibrahim has almost one hundred publications dealing with many facets of Animal Science, and is the first recipient of the Svon Brohult award as well as being a co-recipient of the First International Science Award of Malaysia, for outstanding contribution in the field of science.

The Islamic Academy of Sciences IAS

The IAS is an independent, non-political, non-governmental and non-profit making organisation of distinguished scientists and technologists dedicated to the promotion of all aspects of science and technology in the Islamic World.

The establishment of the Islamic Academy of Sciences IAS was recommended, by the Organisation of Islamic Conference; OIC Standing Committee on Scientific and Technological Co-operation COMSTECH, and subsequently approved by the Fourth Islamic Summit held at Cassablanca, in 1984. The Founding Conference of the Academy was held in Jordan in October 1986.

The Government of Jordan graciously hosts the IAS at Amman, where the headquarters of the Academy started functioning in April 1987.

The main objectives of the Academy are:

- * To serve as a consultative Organisation of the Islamic Ummah and institutions in the field of science and technology.*
- * To initiate science and technology programmes and formulate standards of scientific performance.*
- * To promote research on major problems facing the Islamic countries and to identify future technologies of relevance for possible adoption and utilisation.*

IAS Newsletter

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Dr Anwar M Bilbeisi

Eng. Mounneef R Zou'bi

The Editorial Board welcomes all articles, particularly short ones, and would consider the appropriateness of any material submitted for publication in accordance with IAS's own regulations.

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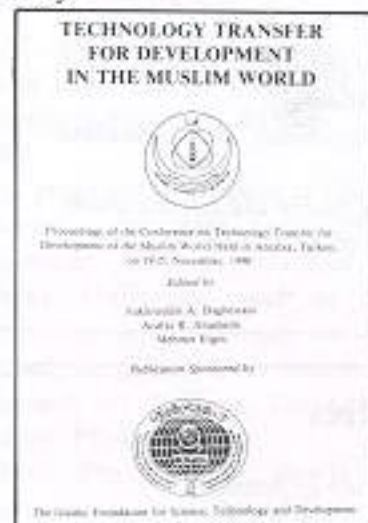
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IAS issues new book

The Islamic Academy of Sciences has recently issued the latest of its publications' series, Technology Transfer for Development in the Muslim World.

The book comprises the proceedings of the conference held in Antalya (Turkey), during 19-21 November 1990, by the Islamic Academy of Sciences in co-operation with the Turkish Scientific and Technical Research Council (TUBITAK), and inaugurated by HE Turgut Ozal, President of the Republic of Turkey.



The book which was edited by Dr Fakhraddin Daghestani FIAS-Academy Treasurer, Dr Arafat Al-Tamemi and Dr Mehmet Ergin FIAS, contains 20 major papers covering Technology Transfer issues and the experience of organisations and industries in transferring technology.

The varied experiences presented in the book can be considered as an excellent basis for development sectors and policy makers to build upon regarding the promotion and upgrading of science and technology to serve as powerful instruments for the socio-economic development of developing countries in general, Islamic countries in particular.

New issue of Journal published

Volume 4, Number 1 of the Journal of the Islamic Academy of Sciences has recently been published by the IAS.

The Journal is the leading IAS publication and one which is edited and published in Turkey under the chief editorship of Prof. Naci M. Bor FIAS.

This issue contains more than 20 research papers covering such topics as Biology, Natural Resources, Physics, Electronics, Chemistry, Biochemistry, Pharmaceutical Chemistry, Microbiology, Herpetology, Hematology, Nephrology, Surgery, Dermatology, Traumatology and Dentistry. The issue also contains some editorial letters and articles.



The Journal of the Academy is widely distributed, with an ever increasing number of subscribers.

Full details about the Journal and the articles it contains as well as subscription details can be obtained from the Editor; Prof. Naci M. Bor FIAS, Mithatpasa Cad., No. 66/5, Ankara, Turkey.

Muslim Scholars



MOHAMMAD IBN MUSA AL-KHAWARIZMI (Died 840 A.D)

Abu Abdullah Mohammad Ibn Musa Al-Khawarizmi was born at Khawarizm (Kheva), south of the Aral Sea.

Al-Khawarizmi was an astronomer, geographer and above all a great mathematician. In fact, he was the founder of several branches of mathematics. His astronomical tables and his famous *Kitab Surat-Al-Ard*, were translated into European languages and taught for many years.

(Taken from: *Personalities Noble*, National Science Council of Pakistan, edited by Hakim Mohammed Said).