

ISLAMIC ACADEMY OF SCIENCES

Newsletter



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Under Taib's patronage: Sarawak hosts 13th IAS Conference on *Energy for Sustainable Development and Science for the Future of the Islamic World and Humanity*



Under the patronage of the Chief Minister of Sarawak, Dr Abdul Taib Mahmud, Hon. FIAS, the Islamic Academy of Sciences convened its thirteenth international conference in Kuching, the capital of the Malaysian state of Sarawak, during 29 September - 02 October 2003. The conference addressed the themes of *Energy for Sustainable Development and Science for the Future of the Islamic World and Humanity*.

The conference, which was held at the Kuching Hilton Hotel, was an open scientific activity in which over 250 participants representing over 25 countries participated, including students, researchers and faculty members from local universities. It was organised and sponsored by the following organisations:

- Islamic Academy of Sciences, Amman, Jordan;
- Sarawak Islamic Council, Kuching, Sarawak;
- OIC Ministerial Committee on Scientific and Technological Co-operation (COMSTECH), Islamabad, Pakistan;

- Islamic Development Bank, Jeddah, Saudi Arabia;
- Sasakawa Peace Foundation, Tokyo, Japan;
- Arab Potash Company, Amman, Jordan;
- Higher Council of Science and Technology, Amman, Jordan; and
- National Centre for Human Resources Development, Amman, Jordan; and
- Royal Jordanian Airlines, Amman, Jordan.

The conference, as with most IAS activities, was primarily an S&T platform. It appraised a number of facets of the OIC member countries' energy scene, attempted to define energy priorities for OIC member countries, projected energy success stories in the various parts of the world, and studied some energy research activities currently undertaken in the various OIC countries.

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IAS Patrons, send messages to Kuching Conference

The patrons of the Islamic Academy of Sciences, H E the President of Pakistan and HRH Prince El-Hassan of Jordan, both sent messages to the Thirteenth IAS Conference. The message of H E the President of the Islamic Republic of Pakistan was delivered during the inaugural session by Dr M A Mahesar, and the message of HRH Prince El-Hassan Ibn Talal was read out at the opening session of the conference by Moneef Zou'bi, Director General, IAS.

H E the President of the Islamic Republic of Pakistan

In his message to the conference, the President of Pakistan and IAS Patron said that the Islamic Academy of Sciences, since it was founded, had held regular deliberations on scientific issues of critical importance to the Ummah. These deliberations, he added, have played a vital role in identifying issues requiring the Ummah's utmost and urgent attention.

He went on to say that the two themes on the agenda of the Thirteenth Annual Conference, namely "Science and the Future of Mankind" and "Energy for Development" were timely and needed deeper reflection from the eminent scientific scholars present at the conference.

"We are passing through a unique phase in human history – on the one hand, it is characterized by rapidly depleting resources, disappearing living species, shrinking glaciers, drying river systems and increasing pollution. On the other hand, we have unearthed the power to manipulate genomics, create designer plants and microbes and above all clone animals."

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Prof. Abdel Salam Majali
President (Jordan)



Prof. Majali was born in 1925. A Professor of Medicine, since 1972. Prof. Majali is a former Prime Minister of Jordan. He was also president of the University of Jordan for about fourteen years. He is a Founding Fellow of the IAS.

Prof. Adnan Badran
Treasurer (Jordan)



Prof. Badran was born in 1934. He is a professor of Biology. He is a former Deputy Director General of UNESCO, and is currently president of Philadelphia University in Jordan. He served as Minister of Agriculture and Minister of Education in Jordan.

Prof. Mohamed H A Hassan
Council Member (Sudan)



Prof. Hassan was born in 1947. A professor of Mathematics, he is a Fellow and president of the African Academy of Sciences. Prof. Hassan has been the Executive Director of the Third World Academy of Sciences (TWAS) since 1983.

Prof. J (Younis) Ario Katili
Vice-President (Indonesia)



Prof. Katili was born in 1929. A professor of Geology, he is a former Vice-Chairman of the Indonesian National Research Council. He served for a number of years as Indonesia's Ambassador in Russia. He was elected a Fellow of the IAS in 1990.

Prof. Mehmet Ergin
Secretary General (Turkey)



Prof. Ergin was born in 1936. He is a professor of Chemical Engineering. He is a past president of the Turkish Atomic Energy Commission, and of the Turkish Scientific and Technical Research Council. Prof. Ergin is Founding Fellow of the IAS.

Prof. Anwar Nasim
Council Member (Pakistan/Canada)



Prof. Nasim was born in 1935. A professor of Genetics, he is a Fellow of the Third World Academy of Sciences, and a Foreign Fellow of the Pakistan Academy of Sciences. Prof. Nasim is Advisor (Science), COMSTECH.

Prof. Ahmed Marrakchi
Vice-President (Tunisia)



Prof. Marrakchi was born in 1935. He is a professor of Electronic Engineering. He was dean of the Faculty of Technology at the University of Qatar. He is a former director of the Tunis National School of Engineering. He is a Founding Fellow of the IAS.

Prof. M Shamsher Ali
Council Member (Bangladesh)



Prof. Ali was born in 1940. He is a professor of Physics. He is a Fellow of the Bangladesh Academy of Sciences, Third World Academy of Sciences, and is an elected Fellow of the IAS. Prof. Ali is currently Vice-Chancellor, South East University, Bangladesh.

Prof. Muthana Shanshal
Member (Iraq)



Prof. Shanshal was born in 1943. He is a professor of Chemistry. He was educated in Germany and the US. He is a former president of Saddam University, and has received the "Prime Professor" award of the University of Baghdad. He was elected a Fellow of the IAS in 2001.

Prof. Misbahuddin Shami
Vice-President (Pakistan)



Prof. Shami was born in 1930. He is a professor of Chemistry. He is a former chairman of the Pakistan Science Foundation. He is a Fellow of the Pakistan Academy of Sciences, and Founding Fellow of the IAS.

Prof. Naci Bor
Council Member (Turkey)



Prof. Bor was born in 1928. He is a professor of Medicine. He is currently chairman, Anadolu Health and Research Foundation. Prof. Bor is the founder and chief editor of the Medical Journal of Islamic Academy of Sciences.

Since 1986, the General Assembly of the IAS elected five IAS Councils, the first four of which served until 2003. This is the fifth Council of the Islamic Academy of Sciences. Its term of office will run until 2007. The first Council of the IAS headed by the late Dr M A Kazi from Pakistan served from 1986 until 1990, and was re-elected for a second 4 year term. At Khartoum, Sudan, 1994, the third IAS Council was elected with the late Dr M A Kazi, again as president. The fourth Council of the Academy headed by Dr Abdul Salam Majali, Jordan, was elected in Tehran, Iran, in 1999.

IAS General Assembly holds Fourteenth regular meeting New Council headed by Majali elected for a four-year term

Under the chairmanship of Dr Abdul Salam Majali, IAS President, and in the presence of forty seven Academy Fellows as well IAS Director General, Moneef Zou'bi, the General Assembly of the IAS held its fourteenth regular meeting at the Kuching Hilton Hotel in Sarawak on Wednesday 1 October 2003.

The General Assembly reviewed and approved the minutes of its previous meeting. It commended the comprehensive report presented by the DG-IAS on the regular and ad hoc activities implemented by the IAS over the previous twelve months.

The General Assembly moreover went through an extensive agenda that included a review of programme activities.

The President of the IAS presented an account of the fund-raising efforts that were initiated with a number of countries. The Treasurer also presented a thorough review of the financial accounts of the IAS for the previous financial year including the 2002 Statement of Accounts, all of which were ratified by the Assembly.

The Assembly discussed for some time the status of the Medical Journal of the IAS and proposed some points, which were noted by Prof. Naci Bor, the chief editor.

The Assembly discussed the procedure governing the election of new Fellows. A number of Fellows expressed reservations about the procedure previously adopted by the IAS, and requested to be informed of the terms of reference of the committees that are associated with the election procedure.

The Assembly spent some time discussing future programmes of the IAS.

The General Assembly then formed an ad-hoc committee that was assigned the task of overseeing the election of the new Academy Council. That committee was made up of Prof. Subhi Qasem, Prof. Mohammad Shamim, and Prof. Mohammad Iqbal Choudhary.

A lively discussion then followed which concluded with a secret ballot for the election of the 3 IAS Vice-presidents and 2 out of the 5 IAS Council Members, as the various other posts were not contested.

IAS Council holds meetings at Kuching

At its regular Twenty-Ninth Meeting in Kuching, the Council reviewed the activities undertaken by the IAS over the

previous twelve months. It discussed the detailed report presented by the IAS Director General on the activities of the IAS since the previous meeting, which included the IAS participation in the IAP seminar and workshop, as well the meetings with some officials from UNESCO.

The DG presented an account of the various meetings that were held in connection with the 13th IAS Science Conference. He acknowledged the tremendous support and help provided by the Chief Minister and the officials of the state of Sarawak, in this regard.

The Council discussed ways of implementing more specialised activities in the various OIC countries. It, moreover, expressed its full support to and appreciation of the Medical Journal of the IAS, which was building a reputation for distinction in both its electronic and printed formats.

As well as a number of administrative and financial decisions, the Council resolved to award the Honorary Fellowship of the IAS to Dr Mahathir Mohamad, then prime minister of Malaysia. It also decided to accept the invitation extended by the Indonesian Academy of Sciences to host the 2004 IAS Conference, and reviewed a short list of themes that could be addressed at the meeting.

EDITORIAL LETTER Academy of Sciences: Defining Principles II

In Arab countries today, academies are weak institutions. That, however, was not always the case. Indeed the Arab word, (majma'), meaning assembly, dates back to the 7th century and the time of the Prophet Muhammad (PBUH). Moreover, Baghdad's Al-Ghazali's Nizamiyah Academy, catering to all fields of knowledge, including science, was one of the world's most renowned seats of learning at the turn of the first millennium. That's some 400 years before the creation of the West's first science academy, Accademia Nazionale dei Lincei, in Italy.

The glorious history of academies in the Arab world has been largely lost to history. For nearly 1000 years now, the concept of an assembly of intellectuals or fellowship of scientists dedicated to the advancement of knowledge within their societies has remained relatively obscure throughout the region, even among the region's political elite.

The word (majma') itself has lost its original meaning and with it the energy and vitality inherent in the historic roots of the word. Today (majma') if it is known at all, refers to national language academies that are primarily concerned with – in Arab countries – Arabicizing international scientific terms. That may be a worthy goal but one that is much more restricted than the goals of academies that are dedicated to the promotion and advancement of science both within their nations and on a global scale.

A common feature of all the world's science academies – whether the 55-year-old Chinese Academy of Sciences with a staff of 50,000 or the five-year old Senegalese National Academy of Science with a staff of twelve – is to seek nationwide economic and social advancements through wise applications of science and technology.

To fully realize this goal, academy representatives must get their message across to both public officials and the public at large. Those living in Muslim countries, moreover, must let their political leaders and people know that such knowledge-based institutions, which date back to the earliest days of the Islamic religion, constituted one of the major defining elements of Muslim society during its 'golden age' – a time when Muslim culture dominated the world and stood at the forefront of progress and development.

One of the oldest definitions of academy may thus be one of the least appreciated today. It's a definition that dates back to Plato's time; it is one that took root in the Arab world during an era of great intellectual ferment and economic progress; it then re-emerged in Western Europe during the Renaissance; and it continues today, in part, as the organizing principle for the world's science academies – in the North and South and the East and West.

Today's science academies have a critical role to play as a strong public voice for the promotion of both scientific excellence and science-based development. Science academies, in fact, shoulder primary responsibility within their nations for showing – and indeed convincing – the public that an intricate relationship exists between home-grown science and sustainable growth at home.

Stated more succinctly, the function of science academies in the Muslim world should be to act as nationally recognized organizations devoted to the promotion of science and its applications to human welfare and material well-being. The developing world – and more specifically, the Islamic world where I live and work – would benefit enormously if science academies were to become more vigorously engaged in their nation's larger efforts to address critical economic and social problems.

Moneef R Zou'bi, Director General, IAS

**IAS Kuching Declaration on
Energy for Sustainable Development
and
Science for the Future of the Islamic World and Humanity**

Adopted at Kuching/Sarawak (Malaysia) on

6 Sha'aban 1424

2 October 2003

PREAMBLE

WHEREAS Allah (God) *Subhanahu Wata'ala* has endowed Man with reason, and made the pursuit of knowledge an (absolute) obligation, and as the teachings of Islam emphasize the importance of prudently using all resources for Man's lasting well-being;

WHEREAS the doctrines of Islam explicitly emphasize that human-beings' relation to nature should be one of stewardship and not of unrestricted mastery, and as Islam promotes a balance between all living creatures and their life-sustaining environment;

WHEREAS concepts such as sustainability, and analytical tools such as human development indicators, provide conceptual frameworks for linking Research and Development (R&D) to societal outcomes, thus invariably leading towards the implementation of an R&D policy that addresses the complex interconnections among technological advance and societal responses and needs including sustainability;

WHEREAS sustainable development provides the only practicable way forward if our world's peoples are to live in harmony with each other, and as access to affordable and reliable energy, drawn from environmentally acceptable sources of supply, is an important feature of sustainable development;

WHEREAS renewable energy sources and technologies provide a virtually infinite supply and environmental compatibility with sustainable development;

WHEREAS Organisation of Islamic Conference (OIC) and developing countries vary in their energy and sustainability outlook, as some have developed a vision that interlinks their energy future to their sustainable development outlook, and others due, among other considerations, to the abundance of their natural energy resources, have not given due priority to this issue;

AND WHEREAS,

- (i) The Islamic Academy of Sciences has long realised that science is a major asset of humanity, an asset that in the 21st century offers new opportunities and faces new challenges as well as old ones; challenges related to the prevalence of sustainable development, justice, tolerance, dialogue between civilisations and peace;
- (ii) The Islamic Academy of Sciences firmly believes that the international science/academic community must lead the way in bridging prevailing civilisational, social, economic, even political divides between the peoples of the world;
- (iii) Science education forms the starting point for genuine capacity building in Science and Technology (S&T) in developing countries;

MOREOVER,

- (a) **BEING CONCERNED** about the prevailing and growing gaps – including knowledge gap – between the North and the South, which are marginalizing many developing countries and isolating the science communities therein;
- (b) **NOTING WITH CONCERN** that millions of people in rural areas of developing countries live without access to modern energy services, and that many in urban areas suffer the same deprivation and a third of our world's population has unreliable access to modern energy services;
- (c) **OBSERVING WITH CONCERN** the lack of a long-term energy policy at the national level in most member countries of the OIC;
- (d) **NOTING WITH CONCERN** the limited number of centres of excellence and the general deficiency

of S&T institutions in many OIC member countries, especially those centres that are involved in renewable energy R&D;

- (e) **NOTING WITH CONCERN** the lack of specialized energy and sustainability-focused educational programmes at all levels of education in most OIC countries and the inadequacy of educational institutions;

AND,

- (i) **RECOGNISING** the pressing need to encourage investment to support education in science and mathematics, fields where Muslim scientists have made highly significant contributions in earlier times, and noting that these efforts should take advantage of the enormous advances in Information and Communications Technologies (ICTs), but emphasising the great value of 'hands-on' approach to introduce young children to science, and further realizing that such initiatives should include school-based education as well as informal science education through science museums and centres, the media, organising and participating in science olympiads, to encourage greater public awareness of science;
- (ii) **OBSERVING WITH CONCERN** the difficulties faced by some OIC member countries in combating alphabetical adult illiteracy and in promoting computer awareness and utilization among the adult population;
- (iii) **NOTING WITH CONCERN** the absence of co-ordination between the various institutions involved in science and mathematics education within the educational process;
- (iv) **NOTING** the apparent slow adoption of advanced educational and ICT tools such as personal computers, access to the Internet, etc. and the general inadequacy of educational infrastructure;

NOW, THEREFORE, the Islamic Academy of Sciences:

- (i) **REALIZING** that some OIC member countries face critical energy shortages and rely heavily on imported non-renewable resources;
- (ii) **ACKNOWLEDGING** that renewable energy resources, appropriate to local conditions, usually offer an attractive energy resource to rural populations and can make an increasing contribution in urban areas, and that – for economic, strategic and environmental reasons – renewable energy resources are expected to become the supply of choice;
- (iii) **ACKNOWLEDGING** that nuclear energy which does not release greenhouse gases at the generation stage as well as the clean renewable wind, hydro, biomass, geothermal, and solar energies, appear to be attractive for the generation of electricity and that their contribution in the global energy mix will significantly increase in future;

MOREOVER,

- (a) **APPRECIATING** the activities being carried out by many UN, OIC, governments, academic institutions, and non-governmental organizations in the area of sustainable energy research and related technological applications;
- (b) **REALISING** that no single nation-state can survive in the management of resources in total isolation from a regional and international context and that we all are interdependent;
- (c) **UNDERSTANDING** that at the dawn of the 21st century, the world of science and higher education is marked by a complex struggle, between continuity and change, and the rise of new challenges, opportunities and new modes of 'learning to learn,' and that the idea of reform, innovations, transformation and *evolution* rather than *revolution* tells us that higher education and science are in ferment in creating and constructing knowledge;
- (d) **NOTING** that in responding to the growing demands of the market-forces of the Knowledge-based or K-economy, a fresh-look is needed to re-examine the delivery of higher education in OIC and Developing countries in terms of quality and relevance, and also to re-examine the

scientific development and acquisition capacity as well as technology application into the productive sectors of the economy;

THE ISLAMIC ACADEMY OF SCIENCES AND THE SCIENTISTS, TECHNOLOGISTS AND POLICY-MAKERS MEETING AT KUCHING, SARAWAK, MALAYSIA, DURING 29 SEPTEMBER- 02 OCTOBER 2003 CALL UPON the international community to:

- (i) **EXTEND**, in the spirit of co-operation, all possible help to developing countries in the area of technology transfer, R&D human resource development, as well as debt relief, to enable them to channel more resources to mapping an environmentally sustainable future;
- (ii) **CONTINUE** to support research projects of importance in developing countries, especially in the field of renewable energies, and related emerging technologies in general;
- (iii) **CONTINUE** to support research projects of importance in the developing countries in science and mathematics education;
- (iv) **INCREASE** North-South and South-South academic and scientific collaboration to help developing countries build up their S&T capacity;
- (v) **FACILITATE** the opportunities for scientists of the countries of the South in terms of under-graduate, post-graduate and post-doctorate studies in the North, and other parts of the South as a means of building up the critical mass of scientists and technologists in poorer countries;

AND CALL UPON the leaders and decision-makers of Islamic countries to:

- (a) **ESTABLISH** national academies of sciences in their countries, or where such independent entities exist strengthen them, so that they may act as independent advisory bodies to their respective governments;
- (b) **EVALUATE** their energy policies and where possible incorporate them into national S&T policies;
- (c) **STRENGTHEN** specialized R&D institutions, the output of which can eventually be smoothly transformed into marketable technological products;
- (d) **INTRODUCE** environmental awareness programmes at the various stages of the educational process;
- (e) **STRENGTHEN** sustainable energy research centres, especially solar and

hydrogen energy research centres, and provide them with all possible incentives to bolster their research and market their technological output;

- (f) **INTRODUCE** appropriate legislation and incentives, including tax relief and customs exemptions, to promote the use of sustainable energy resources;
- (g) **ALLOCATE/DIVERT** available resources to science education, with a view to building up a scientific and technological manpower base capable of adapting and developing new technologies;
- (h) **EMPHASIZE** the key role played by contemporary applied and basic sciences education for gaining mastery in the transformational technologies of information technology, biotechnology, and nanotechnology;
- (i) **ADOPT** a holistic approach to scientific research and development and technology utilisation and establish the necessary technology management processes for the purpose;

AND FURTHER CALL UPON the relevant OIC and other organisations to:

- (i) **PROMOTE** a realization among educationists from all disciplines of the need to produce an appropriate base for socio-economic development in OIC countries through the use of a combination of ideological and utilitarian approaches;
- (ii) **ENCOURAGE** inter-agency collaboration in the area of sustainable energy adoption and assimilation;
- (iii) **COLLABORATE** with more advanced countries in building the scientific capacity required for the development of hydro and nuclear power, as well as wind, hydrogen, geothermal and solar energies;
- (iv) **ENCOURAGE** and support OIC-based sustainable-energy industrial ventures;
- (v) **DEVELOP** databases of human resources involved in sustainable energy research and application in OIC countries to facilitate appraising national strengths and weaknesses;
- (vi) **PROMOTE** interest in science education at all levels, in a manner compatible with local culture and needs, but without excluding international experience gained in this domain including that of many

European and American academies of sciences;

- (i) **CONTINUE** to address developments in basic sciences and mathematics, and not to marginalize this backbone of S&T development;
- (ii) **UPGRADE** primary education through the introduction of illustrated and interactive educational resources and textbooks, and encourage scientists and educationists of repute to participate in the production of such materials and textbooks;
- (iii) **ENCOURAGE** and promote the publication of quality research material of OIC scientists on the Internet;
- (iv) **ENCOURAGE** the participation in the annual "Nobel Laureates Meeting in Lindau," which is a unique scientific event, at which Nobel Laureates give lectures to and interact with young researchers from a variety of countries;
- (v) **IDENTIFY AND INTERACT WITH** champions of Science at the institutional, national, regional, OIC and international levels, to promote the cause of science for development;
- (vi) **STRENGTHEN** academic and scientific links with international science academies, and other scientific bodies worldwide;

MOREOVER, THE ISLAMIC ACADEMY OF SCIENCES:

- (1) **SUPPORTS** the setting up of an OIC energy forum to critically examine future energy strategies of OIC member countries;
- (2) **SUPPORTS** the setting up of the proposed International Renewable Energy Agency, as a new international body mandated to promote all aspects of renewable energies, at the international level;
- (3) **URGES** all OIC member countries to contribute generously to the newly established OIC Science and Technology Fund, and commends highly the efforts of Pakistan and the OIC Standing Committee on Scientific and Technological Co-operation (COMSTECH) in launching this timely initiative.

13th IAS Conference in pictures



(Continued from page 1)

Sarawak hosts IAS Conference 2003

The conference attempted to interlink development in the energy sector to developments in the broader S&T sectors in the various countries.

The 13th IAS Conference was designed to be an open forum that brought together those working in energy policy development, academia, environmental policy, or involved in the political decision-making level, as well as academics in the various pure science disciplines. It was a platform designed to facilitate the free exchange of views among experts on energy.

The conference, through encompassing lectures by eminent world scientists including Nobel Laureates, evolved into a lively intellectual exercise and provided a unique opportunity for much needed, genuine debate and lasting interaction among the scientists attending.



Dr Abdul Taib Mahmud

In his inaugural remarks, the Chief Minister of Sarawak, Pehin Sri Dr Abdul Taib Mahmud called on Muslims to build a society that actively participates in science and technology. "The gap between us and the developed nations cannot be brought closer unless we realise that the Islamic struggle must embrace technological and scientific advancement," he explained.

He said that as our countries progressed, science and technology were becoming part and parcel of development of the Muslim community into the future.

As such, he said the Muslim community had to inherit a correct approach in the Islamic civilisation.

Taib also touched on the classical Islamic scientists in the early stage of human civilisation that spawned the renaissance age of sciences.

"It is ironical that now Muslim communities have to improve themselves to catch up with the best development of

the world," he said, while the success of the Western world today was also attributed to Islam's struggle in the past.

He hoped IAS could help to promote scientific education within Islamic countries by assisting "those that are still behind while pushing those who have developed to the forefront of scientific knowledge."

Taib suggested that better results "can be obtained through co-operation among universities in sharing a pool of scientific expertise in the various areas" to be distributed among the underdeveloped countries.

As an example, he said, the State (of Sarawak) had embarked on its vision to attain the 'K-society' and 'K-economy' concept for the future.

"This challenge requires knowledge with the transformation of our own education system," he said.

"We have to find out strategic players who can enable our people to see opportunities for greater rewards if they possess the correct skills and knowledge."

As such, he said the education system had been revamped to put greater emphasis on science and technology.

The Chief Minister also took pride in the fact that Sarawak was also embarking on using a renewable source of energy through a technology resulting from research and development into palm oil as alternative fuel.

"We have succeeded in getting palm oil as fuel. Although it is at the preliminary stage of research and it can be developed further," he told the delegates and participants.

On the economic front, Taib said people who could master science and technology following the evolution of information technology and improvement in communication would be able to rule the market.

"The changes are being fuelled by greater discovery in science and invention of new technology," he said. "A lot has to be done through scientific education, that is what I perceive as the greater consciousness of the relevance of science and technology."

Such knowledge, he said, could put the Muslim community on the track to peaceful development that benefits humanity.

"Islamic knowledge can contribute towards greater achievement of the scientific knowledge in the Islamic world," he said.

Taib said he was happy that IAS decided to convene its meeting in Kuching, which could help to disseminate greater consciousness about the role of science among the local participants.

"IAS will be able to help in the

transformation of outlook about what we can do in the Islamic struggle," he said.

The Chief Minister concluded by thanking the Academy, and its local counterpart for their efforts in organising the conference.

Conference Report

In addition to a memorable invited lecture by Prof. Ferid Murad Hon. FIAS, 1998 Nobel Laureate in Medicine, which was entitled *The Nitric Oxide/Cyclic GMP Pathway: Targets for Drug Development*, two other keynotes were presented: *Wind Energy for the Future*, by Prof. Preben Maegaard, President, World Wind Energy Association, Germany, *Science and the Future of Humanity*, which was presented by Dr Michael Clegg, Foreign Secretary, US National Academy of Sciences.

A conference session was dedicated to *Nuclear Energy for the Future* and included country papers on the subject from Pakistan, Egypt and Turkey. *Energy Policy* was discussed in a special session that included presentations from Turkey, Pakistan and Qatar.

Some *Energy R&D Aspects* were discussed in a lively session that included an outstanding paper on *Contemporary Problems and Achievements in Desulphurisation of Oil, Gas, Petroleum Products and Waste Waters*, which was presented by Prof. Akhmet Mazgarov FIAS, of the Russian Research Institute of Hydrocarbon Raw-Material (VNIIS), Tatarstan, Russia. That was followed by a visio-conference presentation on Hydrogen energy entitled, *Towards New Energy for Sustainability: The Strategy in Iceland*, presented by Prof. Bragi Arnason and Prof. Thorstein I Sigfusson, of the University of Iceland and Icelandic New Energy, Iceland, which evoked a lively discussion.

Other specialised papers, including many that addressed the relationship between *Islam and Science* as well as *Science for the Future*, were presented in two specialised sessions. Two papers from Malaysia were also presented, the first by Omar Abdul Rahman, former science advisor to the Malaysian Prime Minister, which was entitled *Harnessing Technology for Development*; the second by one of Sarawak's eminent scientists/politicians, Dr James D Mamit, on the *Science and Technology Scene in Sarawak, Malaysia*.

At the conclusion of the four-day conference in which 30 papers were presented, the Academy adopted the IAS Kuching Declaration on *Energy for Sustainable Development and Science for the Future of the Islamic World and Humanity*.

The declaration re-iterated the fact that

the teachings of Islam emphasize the importance of prudently using all resources for Man's lasting well-being, and explicitly emphasize that human-beings' relation to nature should be one of stewardship and not of mastery, and that Islam promotes a balance between all living creatures and their life-sustaining environment. It further called for the implementation of an R&D policy that addresses the complex interconnections among technological advance and societal responses and needs including sustainability.

In the declaration, the IAS re-iterated that science is a major asset of humanity, an asset that in the 21st century offers new opportunities and faces new challenges as well as old ones, challenges related to the prevalence of sustainable development, justice, tolerance, dialogue among civilisations, and peace. It promulgated that the international science/academic community must lead the way in bridging prevailing civilisational, social, economic, even political divides between the peoples of the world.

The declaration emphasised the need to promote the various renewable energy resources, in terms of both the related R&D effort as well as the downstream application. It supported the call to launch an OIC energy forum, as well as international renewable energy agency.

The declaration recognised the pressing need to encourage investment to support education in science and mathematics, and that these efforts should take advantage of the enormous advances in Information and Communications Technologies (ICTs). It elaborated that such initiatives should include school-based education as well as informal science education through science museums and centres, the media, organising and participating in science olympiads to encourage greater public awareness of science.

Moreover, the IAS, through the declaration, called on developed countries to extend all possible help to developing countries in the area of technology transfer, R&D human resource development, as well as debt relief, to enable them to channel more resources to mapping an environmentally sustainable future. It called on advanced countries to continue to support research projects of importance in developing countries, especially in the field of renewable energies, and related emerging technologies in general.

The Academy called for an increase in institutional and national North-South and South-South academic and scientific collaboration to help developing countries build up their S&T capacity. It also urged

advanced countries to facilitate the opportunities for scientists of the countries of the South in terms of undergraduate, post-graduate and post-doctorate studies in the North as a means of building up the critical mass of scientists and technologists in poorer countries.

As part of the follow-up action to the conference, the Academy will circulate the IAS Kuching Declaration to concerned individuals and relevant agencies throughout OIC and developing countries, so that measures are taken to implement the ideas proposed at the conference.

The Academy will also publish the complete proceedings of the conference in two quality volumes that will be distributed internationally. Such books, like all other published IAS proceedings, will become valuable references for experts that are involved in *Energy for Sustainable Development* or undertake research in the field of science education and science-society interaction.

Through IAS Fellows, personal contact and correspondence, the IAS will promote the concepts promulgated at the conference among the decision making circles of the Islamic world, and will provide whatever help it can to get the various recommendations implemented.

H E the President of the Islamic Republic of Pakistan

(Continued from page 1)

The Pakistani president went on to say that the paradoxical march of humanity, characterized by an increasingly globalised world and driven by advancement in science and technological breakthroughs, was shaping the 21st century.

He warned that as developed countries become the dominant force in globalization, the Islamic *Ummah* will be marginalized and left behind.

"This abysmal state is a direct outcome of decades of neglect and inattention in the Islamic world to the development of research, scientific infrastructure and indigenous technological capacity."

He referred to the 2002 COMSTECH meeting, which agreed on the need to reverse this sad state. He reiterated that in order to rectify and regain lost glory, Muslim countries need to donate at least 0.1% of their GDP annually to establish a multibillion-dollar Pan Islamic Fund that is dedicated for science and technology in the OIC member states.

"The Fund can be used for research and development of basic sciences as well as for promotion of frontier technologies such as biotechnology, information technology, pharmaceuticals, robotics, material sciences, desertification and promotion of renewable sources of energy. COMSTECH can play a pivotal role in operationalizing this research and in the development and implementation of such programs."

General Musharraf concluded by saying that he considered it important and befitting for this distinguished body of scientists and scholars of the Islamic world assembled for the IAS Conference at Kuching to debate this all-important issue, and to identify practical steps for the creation of this required joint multibillion dollar fund.

HRH Prince Al-Hassan Ibn Talal

In his message to the conference, HRH Prince El-Hassan firstly said that no one could overemphasise the volatility of the Islamic world, or its diversity that was in desperate need of harmonisation.

"This makes the mastery of the dynamics of the science-technology-development trilogy all the more crucial; it is simply a matter of survival."

The Academy Patron went on to emphasise that Muslim countries face tremendous political, demographic, environmental, and regional development challenges, including the *Energy for Development* challenge. He went on to emphasise that benefits from the abundance of oil reserves in many countries was not translated into genuine development. "... despite the large income reaped by the Islamic world from the oil windfall of the seventies and eighties of the past century, lasting benefits are limited. A lot of money has been wasted in local wars, in acquiring armament, and in sheer extravagance."

HRH called on oil-exporting countries to diversify their income generating activities and to become less dependent on oil. "In order to efficiently arrive at satisfactory levels of development compatible with income from oil, several lessons can be learned from the past. Above all, the economy in oil-exporting countries should be diversified, and not be solely based on a single product with volatile prices."

In addressing the related environmental issues, IAS patron drew attention to the debates surrounding fossil energy, the environment and global warming. He cautioned against the waste and extravagance that have accompanied oil income in the past adding that such

practices are against the ethics and teachings of Islam.

He went on to say that the world would continue to depend on oil for decades to come. "The Islamic world accounts for over 70% of global oil reserves. Correspondingly, the dependence of the world on Islamic countries to supply this vital commodity will continue."

He wondered as to how could the oil income be used to foster the fortunes of Islamic countries, particularly in the domain of human development. He proposed that an attempt should be made to envision the kind of future we would like to share. "Surely, no single nation-state can survive in the management of resources in total isolation from a regional and international context. We are all transparently interdependent – at best, inter-independent!"

Prince Hassan repeated that we should all ask the question of what futures do we want and how can we make them coexist? "What is needed is a common approach based on a return to 'anthro-centrism' – putting human welfare first," he added.



The prince again suggested that science and technology – as demonstrated in the recent past could play vital roles in development through raising awareness and providing channels for conversation for the purpose of arriving at the best development solutions. In other words, "...using technological advancement to brainstorm development options within our region as well as with other regions."

He then cited the young think tank (tt30) of the Club of Rome as an excellent example of open discussion and information exchange forum amongst young pioneers all around the world and from different backgrounds.

He proposed an emulation of the Club's European Environmental Education (EEE) in the form of an 'Electronic Environmental Education' programme for youth in our region, adding that he has helped launch two

dialogue initiatives: the first was *Partnersin Humanity*, launched in Amman with the aim of rebuilding partnerships and promoting dialogue between Muslim countries and the US; and the second was the *Parliament of Cultures* launched in Ankara with Professor Ihsan Doğramaci, where men and women from all over the world will participate in interactive dialogue; thus strengthening international and intercultural friendship.

HRH went on to say that he had often called for a vision of a regional *aménagement des territoires* – a regional management of our human values and economic resources, focusing on a cluster of water, energy and the human environment in our region in the same way that coal and steel brought Europeans together. He then explained that, "Al Ummah is itself a supranational concept."

The founder of Jordan's Higher Council of Science and Technology went on to express his concern as to how do we guarantee the satisfactory transfer of knowledge and technology to our part of the world? "We must not only focus on what the North can do for us, but how we in the South can work with them." He also expressed his concern as to how can we protect culture, diversity and traditional knowledge in the process? "Intellectual property rights and the transfer of knowledge from developing countries to the developed world are also issues that merit immediate attention."

Commending the efforts of the IAS, HRH explained that the Academy had addressed many contemporary issues facing the Islamic world, with a view of not only benefiting the *Ummah*, but also all mankind by means of a well-informed, cooperative, pragmatic, innovative and humanitarian approach in scientific and technological development.

He explained that many conferences have been held on the topic of energy and sustainability, and that although these have been very useful in stimulating discussions and in familiarising scientists and academics with each other, the capacity-building outcomes have not been forthcoming. "Issues of how to release the potential of entrepreneurship and promote creativity and innovations are still very much on our agenda."

Prince Hassan went on to call for such issues to be addressed with a strong interdisciplinary approach. "We must address how science conditions the life of contemporary man. Leading scholars must address the ways in which science

can and will shape the future of mankind."

At the dawn of the 21st century, he added, the world of science and higher education is marked by a complex struggle, pull-and-push effect, between continuity and change. "It is all about new

challenges, opportunities and new modes of 'learning to learn'. The idea of reforms, innovations, transformations and evolution (rather than revolution) tells us that higher education and science are in ferment in creating and constructing knowledge."

At the heart of building knowledge societies, he concluded, lies an interaction between continuity, change and quality in reforming education systems.

Prof. Abdel Salam Majali IAS President



The President of the IAS firstly paid tribute to Sarawak and her Chief Minister for hosting the 13th Science Conference of the IAS.

He explained that Kuching might be geographically far from the lands of the cradle of Islam, yet, it is at the heart of this garden of tolerance, namely the Malaysian state of Sarawak. He went on to say that the by their presence, the participants in the conference were following in the footsteps of their trader/merchant forefathers who rode the high seas to come to this land of plenty. He added that, "...although, it is true that they came in search of material profit, I am certain though, that the words of the Prophet (Peace Be Upon Him) to seek knowledge even in China were at the back of their minds, throughout."

He reiterated that the main purpose of the meeting was to promote the cause of science. "We are signalling, through our meeting, our determination to focus, as scientists and scholars, on bettering ourselves and humanity."

Dr Majali mentioned that Malaysia has been leading the way in terms of utilising science and technology for development. "A people and a leadership

united in objective, and focussed in strategies, Malaysia has managed to withstand some serious economic storms that have swept through South East Asia in the late nineties."

He added that Malaysia has been co-operating with her sister OIC-member countries in all fields, "...in a manner that has been comprehensive and most of all effective."

Dr Majali then mentioned the fact that Malaysia was about to assume the chairmanship of the OIC, "demonstrating yet again, her unwavering determination to help out and contribute to building a better future for the Ummah."

IAS President went on to address the scientific theme explaining that the process of energy generation that was prevalent in the world during the late 20th century was triggered by the Industrial Revolution in the late 18th century, and the emergence of the fossil energy economy.

He explained that the development of the steam engine, which became the primary means of energy conversion for a century, not only replaced human and animal labour with mechanical power, but also caused the launch of steam ships and thus the beginning of a global transport system. "Steam trains and modern overland transport soon followed, and finally came the large power plants driven by fossil fuels - and later by nuclear energy - that still function according to the principle of the steam engine."

Dr Majali suggested that fossil fuels had an uncertain future, and that pessimists say that the energy system in operation around the world was coming to an end, even though it accounted for over 80 percent of supply. "It no longer has a viable future because reserves (of fossil fuels) are limited, and cause damage to the earth's fragile environment."

IAS President went to talk about nuclear energy, which he described as "a fossil energy form, since it is based on the fossil mineral uranium, (which) is also exhaustible."

He concluded his overview of the global energy scene by declaring that the world could not afford to wait any longer, and needs to consider renewable energies. "We know today that the potential of renewable energies is great. Even if the world population were to multiply, our world would still have enough available energy to sustain life. Renewable energy

is inexhaustible as long as the solar system exists."

Dr Majali quoted Dr Hermann Sheer, the famous German scientist politician, who said that the greatest energy source is that which comes from the sun, or the sun itself. "Making this potential the basis for human activity would help man to behave as intelligently as Nature. Maybe it is time that we admitted that our collective intelligence lags behind Nature, which is after all relies almost exclusively on solar energy."

He talked about the number of international activities that have been launched in recent years to get the global energy problem under control, adding that not worthy OIC initiatives in this domain were lacking.

"What was made increasingly obvious from such activities was that the world was heading towards a crisis." He pointed out that the document entitled the Brundtland Report, which was published by the United Nations in 1987, could be considered a starting point in this context.

The Academy President highlighted that in the studies of a sustainable tomorrow, we tend to forget that energy and energy needs are at the core of sustainable life.

"The outcome of the 1992 Rio Conference missed that out. Indeed our own conference on the subject, which was held in Kuala Lumpur in August 1992, did not address the core linkage between energy, and environmental sustainability."

He suggested that whenever we analyse the real reasons for most of the problems listed in Agenda 21, we directly come to the energy question virtually every time. He concluded that the core of the solution to the global ecological crisis lied in the adoption of renewable energies, and that must be coupled with promoting greater linkage between science, and energy policy-making.

"This linkage should embrace holistic approaches to energy and sustainable development as well as take account of the specific socio-economic and cultural context of individual countries."

He called on our countries' institutions and universities to work productively together in the area of renewable energies. "This, so that policies and cooperation projects may be based on relevant evidence and research, and also be shaped by ethical considerations."

He also developed a link between that and other aspects of development. "We now appreciate that development is inconceivable in economic and material terms alone... We also realize that the environment cannot be understood or preserved without taking into account the human cultures that shape it. This requires identifying and safeguarding all forms and expressions of human heritage."

He urged the OIC science community to convince the political leaderships in OIC countries to focus on placing tangible and intangible heritage in the forefront of the national, regional and local use of natural resources and cultural heritage. "Sound practices of environmental protection and land management are vital for safeguarding heritage."

Dr Majali went on to mention the 1999 World Conference on Science, which discussed at length the topic of 'science for man.' He quoted the following from the final declaration thereof, on how science could or should be perceived:

"Science for knowledge, knowledge for progress, which included science for peace, science for development; and Science in society and science for society."

Majali added that we must highlight the ways in which science could help in developing and promoting the specifically human dimension of man, society, and the environment, while at the same time, discuss the ways in which use, misuse and abuse of science can be responsible for a decline in the quality of life, as happens in the case of damage done to the environment, etc.

He went on to point out that scientists from Muslim countries were aware of what progress means, as the Islamic civilisation is amply endowed with examples of prolific scientific achievements; citing Al-Khawarizmi's Algebraic theories through to Al-Zahrawi's surgical techniques. He added that from the very early days of Islam science was put to serve the cause of *Aqeedah*, and an ideology and worldview developed that, during the first few Hijri centuries, provided a most powerful source of inspiration, especially for Muslims' quest for knowledge.

IAS President added that recent decades witnessed changes in knowledge production systems, especially in

scientific research, and more changes were in motion. "These changes are fuelled by the quickening pace of globalization," he added.

"Indeed, globalization itself was fueled by new developments in information and communication technologies (ICTs), in biotechnology, and in the field of materials science and engineering including Nanotechnology.

These are primary manifestations of transformational technologies."

Majali suggested that developing countries cannot simply watch wave after wave of transformational technologies pass without due regard!

"We must ride these Information Technology, Biotechnology and Nanotechnology waves with confidence and determination. We must 'plug into' the transformational powers of these technologies, and not stand idly by, and see us left behind."

The Academy President went on to talk about the recent events that have swept through the world. "The new millennium is new only in name. There is nothing new in the anger and violence springing up everywhere. There is nothing new in unjustified or even justified actions that involve the use of force. Indeed, if we continue to depend on the rule of force, on power, as a deterrent, we will eventually be unable to disable violence."

"As a citizen of the world, and as a medical doctor, I learnt to look for causes, to diagnose, to ask why certain things happen," he declared. "I realize that intolerance, prejudice and bigotry can also be seen as forms of illiteracy and ignorance, eroding social values, eating away at our humanity and stamping on our sense of ethical obligations and duties - to one another and to the world as a whole."

He stated that the mission from then onwards, as science leaders, was to address the world, and point out to despair generating conflicts, activate goodwill-based bilateral interaction. "If we are to contribute to global security, we must think of achieving local commodity and natural resource security. We must bridge science divides, digital divides, and maybe more importantly we must aim to bridge the hope divide," Majali concluded.



IAS receives donation from Government of Sarawak

At the conclusion of a dinner banquet held by the Chief Minister of Sarawak in honour of the participants of the 13th IAS Conference in Kuching, the Chief Minister presented IAS President with two cheques representing donations from the government of Sarawak and the Baitulmal Sarawak to the IAS.

As the Islamic Academy of Sciences (IAS) is in the process of implementing a number of S&T capacity building activities, any form of assistance, particularly finance from any country or individual who shared similar objectives was most welcome, said IAS president Prof. Abdel Salam Majali, in a short speech after the ceremony.

"I can assure that every single cent that IAS receives will be put into good use," he said at a garden dinner reception hosted by Chief Minister Pehin Sri Abdul Taib Mahmud at Demak Jaya on Monday 29 September 2003.

Majali, who is in the State for the ongoing 13th IAS conference along with other scientists from both the Islamic and non-Islamic nations, also revealed IAS plan to have its own building.

"We plan to build or buy a building of our own in the near future as our office in Amman, Jordan, is currently a rented premises," he said.

Prof. Majali said that the assistance rendered to IAS was a form of 'amal jariah' (religious social services).

Dr Majali and Moneef Zou'bi IAS Director General, also commended the State and the leadership of Taib for being able to handle the IAS Conference in a superb manner. IAS Director General pointed out that he was very much encouraged by the number of students and university lecturers who were attending the various sessions of the conference.

"The way he handled the current conference speaks for itself and I dare say here that after so many conferences before this, none had been so successful as this one," Dr Majali added.

IAS Director General, Moneef Zou'bi, pointed out that the IAS is one of 80 or so academies of sciences worldwide. It is an NGO that is hosted by Jordan. It has members (Fellows) from over 30 countries.

He added that the government of Jordan provides the Academy an annual grant to help it cover its local expenses, while companies, charities, as well as international development agencies including the Jeddah based Islamic Development Bank provide the finances for the IAS programme budget.

More Funds needed for R&D activities in the State

Research and Development (R&D) in the fields of Science and Technology in the state of Sarawak is predominantly the pursuits of the government and universities said Dr James Dawos Mamit.



Dr James Dawos Mamit

In his paper entitled "Science and Technology scene in the State of Sarawak," delivered at the 13th Islamic Academy of Sciences Conference, he revealed there were five government institutions in Sarawak that conducted R&D mainly in the fields of agriculture and crop protection, fisheries, food production, forestry and biodiversity conservation and rubber products.

However, he said, the R&D institutions were the tentacles of the government department, which often received relatively smaller budget than other non-R&D divisions of the departments.

"The state government could benefit from R&D if more funding is made available so as to enable R&D activities to be well planned and structured," he said. He added that by such a way, R&D activities would yield discoveries and tenable results.

On high-tech industries, Dawos said the industries were taking roots in the state. "Sarawak has embarked on an ambitious plan to attract high tech industries to its shores," he said. He said the government had established a free trade industrial zone for this purpose, where foreign companies could operate without the hassle of much bureaucracy. The necessary clearances for export and import of goods were processed in a one-step centre, he added.

He revealed that 14 companies of electronic and information capabilities, foreign and locally owned, were operating in Sama Jaya Free Industrial Zone in Kuching.

Dawos attributed the success of the government's efforts to attract high-tech foreign companies was partly due to the availability of an educated and well-trained workforce in the state.

Establishing national academies of sciences

The Islamic Academy of Sciences IAS has called upon the international community to assist developing countries in the development of science and technology and to build up their pool of scientists.

In the five-page declaration, dubbed as IAS Kuching Declaration, the Academy called on leaders and decision makers of Islamic countries to establish national academies of sciences in their countries, or where such independent entities exist strengthen them, so that they may act as independent advisory bodies to their respective governments.

The declaration also appealed to OIC and relevant organisations to promote a realisation among educationists from all disciplines of the need to produce an appropriate base for socio-economic development in OIC countries through the use of a combination of ideological and utilitarian approaches.



Prof. Preben Maegaard

Wind Energy for the future!

Will wind energy become one cornerstone of the future energy supply? Will it form part of the energy mix that will include solar energy, hydropower, biomass and geothermal energy?

According to the President of the World Wind Energy Association Prof. Preben Maegaard from Denmark, renewable energies such as wind energy could be introduced more readily and swiftly than nuclear or fossil energies as they do not need elaborate infrastructure for the primary energy supply. He said this when he presented a keynote presentation on "Wind Energy for the Future" at the 13th Science Conference of the Islamic Academy of Sciences (IAS) held in Kuching.

"No energy source is free from environmental impact. As the renewable energy sources are diffused, they require larger areas which can be cultivated before the windmills are erected," he said.

Maegaard, who is also the Vice President of Eurosolar and the Director of Folkecentre for Renewable Energy, Denmark, said possible disturbance to wildlife focused especially at birds revealed that the loss was below 0.1 per cent compared to animals losing their lives in road traffic collisions.

"Power lines transporting the electricity from wind farms kill more birds than windmills," he said, reiterating the safety of the windmills as far as environmental aspect is concerned. He further added that the main perspective for developing the renewable sources was environmental, i.e. to reduce emissions of greenhouse gases and the substitution of atomic energy and fossil fuels.

The most common windmills in operation today generated power from three blade horizontal axis windmills with the nacelle mounted on steel towers that could be cylindrical steel plates or lattice towers, he said.

In Europe, he said, some local communities that were connected to the national grid, received over 100 per cent of their power needs from local windmills.

"During periods of strong winds and low power consumption, the windmills may deliver up to 400 per cent of the actual consumption of electricity with the prescribed power quality still being maintained," he said.

Maegaard said policies and strategies supporting the transition from the dominance of fossil fuels and atomic energy had in all countries a decisive influence on the implementation of renewable and decentralised forms of energy.

"The successful elements of the 1991 German legislation, 'Act on Feeding in Electricity' resulted in a breakthrough for wind power with 50 per cent of the total European capacity as well as progress for other types of renewables," he said.



Call for Nominations

The Islamic Academy of Sciences, Amman, Jordan, has instituted an Award in the name of one of its Founding Fellows, the late Prof. Muhammad Ibrahim (1911-1988), who was an eminent medical doctor from Bangladesh. Prof. Ibrahim dedicated a great deal of time and effort to medical research that proved to be of benefit and value in his country and internationally.

The purpose of this Award is to promote scientific research in the field of medicine and medical sciences in the various countries that belong to the Organisation of the Islamic Conference (OIC).

Faculties and Schools of Medicine at universities, Academies of Sciences and other learned societies as well as private sector institutions are invited to nominate young scientists and technologists working in the medical field, for this Award.

Deadline for receiving nominations is 15 June 2004.

IAS Ibrahim Memorial Award 2004

The Awardee would be invited to the end of year conference of the IAS, where he/she would be presented with a commemorative medal and/or shield, and a compilation of IAS literature.

Travel expenses of Awardee would be covered from the Award Fund and by the Academy.

A token honorarium would be presented to the Awardee.

Contact: IAS Secretariat

PO Box 830036, Amman 11183, Jordan

Telephone: (9626) 5522104 – Fax: (9626) 5511803

E-mail: ias@go.com.jo

الأكاديمية الإسلامية للعلوم

الأكاديمية الإسلامية للعلوم مؤسسة مستقلة، غير سياسية، غير حكومية، وغير ربحية، تضم زملاء (أعضاء) مؤسسون ومتقنون يمثلون المجتمع العلمي الإسلامي المبدع في شتى مناطق ودول العالم. تهدف الأكاديمية إلى الارتقاء بمناخ العلوم والتكنولوجيا المختلفة في العالم الإسلامي.

جاء تأسيس الأكاديمية بناء على توصية تقدمت بها اللجنة الدائمة للتعاون العلمي والتكنولوجي (COMSTech) إلى مؤتمر القمة الإسلامي الرابع، الذي عقد في الدار البيضاء عام ١٩٨٤، حيث تم إقرار هذه التوصية. إثر دعوة من حكومة المملكة الأردنية الهاشمية وبرعاية كريمة من صاحب السمو الملكي الأمير الحسن بن طلال، عقد المؤتمر التأسيسي للأكاديمية في شهر تشرين أول (أكتوبر) ١٩٨٦، بمشاركة شخصيات بارزة من دول إسلامية مختلفة تمت دعوتهم من قبل المؤسسات المنظمة للمؤتمر ليكونوا زملاء مؤسسين للأكاديمية.

أما الأهداف الرئيسية للأكاديمية فهي:

- تقديم النصيحة والمشورة إلى الأمة الإسلامية ومؤسسات الدول الأعضاء في منظمة المؤتمر الإسلامي، حول أمور تتعلق بالعلوم والتكنولوجيا وتطبيقاتها.
- تنفيذ برامج ونشاطات علمية وتكنولوجية، وتشجيع التعاون بين الباحثين في البلدان الإسلامية المختلفة حول مشاريع ذات أهمية مشتركة.
- تشجيع ودعم البحث العلمي حول أهم المشاكل التي تواجه البلدان الإسلامية، وتحديد التكنولوجيات المستقبلية الملزمة لعلاجات تنبئها واستخدامها.
- صياغة مقاييس للإنجاز والتحصيل العلمي، ومنح الجوائز والأوسمة للإنجازات العلمية المتميزة، بغية تطوير مراكز الإبداع في فروع العلوم المختلفة وتحفيز المبدعين.

نشرة الأكاديمية الإسلامية للعلوم

نشرة دورية تصدرها الأمانة العامة للأكاديمية الإسلامية للعلوم، عمان، الأردن.

رئيس التحرير: المهندس منيف رافع الزعبي، مدير عام الأكاديمية الإسلامية للعلوم.

مساعد التحرير: ليثا جلال عارف، مسؤول برامج.

ترحب لجنة التحرير بكل المقالات، وخصوصاً القصيرة منها، ولجنة الحق في تقرير مدى ملائمة المقالات المقدمة للنشر وفقاً لتعليمات الأكاديمية.

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البريد الإلكتروني:

secretariat@ias-worldwide.org

ias@go.com.jo

الموقع على الإنترنت: <http://www.ias-worldwide.org>

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Useful Web Sites

Islamic Academy of Sciences	www.ias-worldwide.org
COMSTech	www.comstech.org.pk
Islamic Development Bank (IDB)	www.isdb.org
Medical Journal of the IAS	www.medicaljournal-ias.org
OICexchange	www.oicexchange.com
SESRTCIC	www.sesrtcic.org
ISESCO	www.isesco.org.ma



Prof. Omar Abdul Rahman
(Malaysia)

Prof. Omar was born in 1932 in Kota Bharu, Kelantan, Malaysia. He is married with 3 children.

He graduated in 1958 with a BVSc from Sydney University, performed postgraduate work in Veterinary Pathology (1959) at Queensland University and earned a PhD in 1966 from Cambridge University. He has received honorary degrees from the universities of Guelph, Bristol, and Queensland.

After working as a demonstrator in Veterinary Pathology at Queensland University (1959), he successively held the positions of Senior Research Officer (1970) and Deputy Director (1971) at that Institute. He then became Founding Professor and Dean, Faculty of Veterinary Medicine and Animal Sciences, University Pertanian Malaysia in 1978, then Professor of Veterinary Pathology and Deputy Vice-Chancellor for Academic Affairs at the same university (1982-1984).

Prof. Omar is a member of the Royal College of Veterinary Surgeons (UK); honorary doctor of the University of Sterling; former president, Association of Veterinary Surgeons Malaysia-Singapore; member, National Council for Scientific Research and Development, Malaysia; president, Malaysian Scientific Association since 1984; member of the National Development Planning Committee of Malaysia since 1984; as well as being a member of the National Commission for UNESCO.

Dr Omar is past member of the executive committee of COMSTech, past vice-president of TWNSO, and Founding Fellow of the Islamic Academy of Sciences (1986). He became a Founding President and Fellow of the Malaysian Academy of Sciences in 1996.

Prof. Omar Abdul Rahman has over 100 publications to his credit in many scientific fields including many books.

He has served as Advisor to the Malaysian Prime Minister on Science and Technology for over 17 years.



Prof. Ibrahim Saleh Al Naimi
(Qatar)

Prof. Naimi was born in 1956 in Qatar. He obtained his Bachelor's degree from the University of Qatar in 1977 and his Masters in 1981. He was awarded his PhD in Chemistry from the University of Southern California in the US in 1983.

Prof. Naimi started his academic career as a lecturer (1983) at the department of Chemistry, Faculty of Science, University of Qatar. He was appointed associate professor in 1988, and became a full professor at the same university in 1995.

Besides his academic career, Prof. Naimi was appointed as Vice Dean of the Faculty of Science (1988), Dean (1992) of the same faculty, and president of the University of Qatar (1994), a position that he held for a number of years.

As Qatar occupies a leading world position in natural gas production, Prof. Naimi became involved in basic as well as applied research program dealing with the conversation of natural gas into liquid hydrocarbon products.

The real interest of Prof. Naimi lies in his commitment to promote science and technology in the Islamic countries by participating in meeting and encouraging initiatives to develop cooperation between Muslim scientists.

Prof. Naimi is a member of Supreme Council of Education, Qatar 1993-todate. He is a Board Member of the Centre for Research on Muslim Contributions to Civilization (1987), and he is Chairman of the Society of Petroleum Engineers, Qatar, 1994. He is also a member of the International Movement for Leisure Activities in Science and Technology, 1987. Prof. Naimi is a member of the International Association of University Presidents, 1994-todate.

He was elected a Fellow of the Islamic Academy of Sciences in 2000.



Prof. Mohammad Shamim Jairajpuri
(India)

Prof. Mohd. Shamim Jairajpuri was born in 1942. He obtained his BSc (1959), MSc (1961) and PhD (1964) from Aligarh Muslim University. The degree of Doctor of Science (DSc) was awarded to him in Zoology by Aligarh Muslim University in 1970 at the age of 28.

He was first appointed a Lecturer (1964) then a Reader (1972), Professor (1983), Chairman (1988-89 & 1997-98) of the Zoology Department and Dean (1993-95 & 1997-98) of the Faculty of Life Sciences, AMU.

Prof. Jairajpuri has done pioneering research on plant and soil nematodes for which the Zoological Survey of India awarded him with gold medal in 1997 and 1998. He is considered a renowned world authority in this subject. He has published over 20 Books and Monographs, over 350 research papers. He has the distinction of publishing over 80 research papers in *Nematologica* (Netherlands) and over 40 papers in *Revue de Nematologie* (France), the two top most international journals in the subject of Nematology.

Prof. Jairajpuri is Fellow of several learned societies of the world. He was the President of the Nematological Society of India (1979 -81), and Chief Editor of the *Indian Journal of Nematology* (1977-79), and Vice President of the Zoological Society (1989-91).

He has held the coveted position of the Director of Zoological Survey of India from 1989-1991.

In 1991, he was appointed Coordinator of the Agriculture Center at AMU and became the Founder Director of the Institute of Agriculture in 1993 and worked in that capacity until July 1996. Since 1998 he has been working as the Founder Vice Chancellor of the Maulana Azad National Urdu University and simultaneously as the Honorary Professor in School of Life Sciences of the University of Hyderabad.

He was elected a TWAS Fellow in 2000, and an IAS Fellow in 2002.



**Prof. Hussein Samir Salama
(Egypt)**

Prof. Salama was born in Gharbia, Egypt, in 1936.

He earned his degrees at Ain Shams University, Faculty of Science (BSc in 1955, MSc in 1959) and Cairo University, PhD and DSc in Entomology in 1962 and 1987, respectively.

A post-doctoral fellow (1963-1965) at the Department of Entomology, University of Alberta, Edmonton, Canada (1963-1965); Prof. Salama was also a fellow of Alexander Von Humboldt Foundation where he joined the Institute of Applied Zoology, University of Munich (1974-1976).

He started his career as a Research Assistant, National Research Center (NRC) in Cairo in 1956. He then became Researcher; Associate Research Professor; and Research Professor of Entomology at NRC in 1973. He went on to become President the NRC between 1988-1992, and then Emeritus Research Professor since 1996.

Prof. Salama was awarded the State Prize for Biological Sciences (1973); the Golden Medal of NRC (1981); the Golden Medal of the Entomological Society of Egypt (1982); the State Prize for Sciences Prize for Agricultural Sciences (1983); the African Academy of Sciences Prize for Agriculture (1991); and the Recognition State Prize for Basic Sciences (1994).

Prof. Salama is/was member of several learned bodies including: the board of the National Research Centre, Egypt; Vice-President of the Research Council for Basic Sciences, Egyptian Academy of Scientific Research and Technology; the Egyptian Institute for Scientific Culture (1991); the International Union of Biological Sciences (IUBS). He was Vice President of the Entomological Society of Egypt; an elected member of the board of the Egyptian Academy of Sciences; TWAS Fellow, Fellow of the African Academy of Sciences and Founding Fellow of the Islamic Academy of Sciences (1986).

Islamic Academy of Sciences (IAS)

The IAS is an independent, non-political, non-government 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 was recommended by the Organisation of the Islamic Conference Standing Committee on Scientific and Technological Co-operation (COMSTECH), and subsequently approved by the Fourth Islamic Summit held at Casablanca in 1984. The Founding Conference of the Academy was held in Jordan in October 1986.

The government of Jordan hosts the IAS at Amman where the headquarters of the Academy started functioning in 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 Islamic countries and to identify future technologies of relevance for possible adoption and utilisation; and*
- *To formulate standards of scientific performance and attainment, and to award prizes and honours for outstanding scientific achievements to centres of excellence in all science and technology disciplines.*

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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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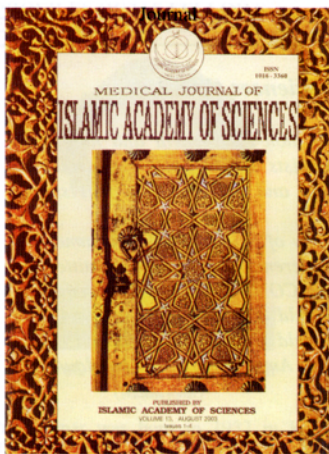
Islamic Academy of Sciences
PO Box 830036 Zahran
Amman 11183 – Jordan.

Address

17 Djibouti Street-Sixth Circle
Telephone: 5522104, 5523385
Fax: 962-6-5511803

**E-mail: ias@go.com.jo secretariat@ias-worldwide.org
<http://www.ias-worldwide.org>**

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New issue of IAS Journal on the web

The Medical Journal of the Islamic Academy of Sciences is one of the IAS's main publications. Originally launched as a general science journal, it was recently re-launched as a specialised refereed medical publication.

The journal, which is edited and published by Prof. Naci Bor - IAS Fellow from Turkey - receives medical articles from many OIC countries as well as from scientists who are based in Europe and America.

The journal is published in both paper and electronic formats and has built up a wide readership since it was established in 1987.

The current issue of the Journal that appears on the web is Volume 13, Number 4. It carries Five major articles; a Biochemistry article by F. S. Al-Ani, I. F. Al-Samaraff and A. R. Abdul-Razzak; a Pediatrics paper by Z. Ghorashi, H. S. Ahari, V. Montazeri, S. Rad; a Proctology paper by P. J. Gupta; a Endocrinology paper by M. T. Javed, K. Almas, S. T. Cheema and T. Zahoor, Alia; a Pharmacology paper by S. Y. Al-okbi, N. M. Ammar, Kh.A. Soroor and D. A. Mohammed.

The Journal's new web address is www.medicaljournal-ias.org

The Journal's web page can also be viewed through a hyper-link through the Academy's web page.

The Journal's chief editor can be reached at the following address:

Prof. Naci Bor, Mithatpasa Caddesi
66/5, 06420 Yenisehir, Ankara, Turkey.



Abul Hassan Ali Ibn Hussain Ibn Ali Al-Masu'di was a descendant of Abdallah Ibn Masu'd, a companion of the Holy Prophet (peace be upon him). An expert geographer, a physicist and historian, Masu'di was born in the last decade of the ninth century AD. He was a Mu'tazilite Arab. He died at Cairo, in 957 AD.

He travelled to Fars in 915 AD and proceeded via Baghdad to India, where he visited Multan and Mansoorah before returning to Fars. From there he travelled to Kirman and then again to India. Mansoorah in those days was a city of great renown and was the capital of the Muslim State of Sind.

Around it, there were many settlements/townships of new converts to Islam. In 918 AD, Masu'di travelled to Gujrat, where more than 10,000 Arab Muslims had settled in the seaport of Chamoor. He also travelled to Deccan, Ceylon, Indo-China and China, and proceeded via Madagascar, Zanzibar and Oman to Basra.

At Basra, he completed his book *Muruj al-Thahab*, in which he described his experience of various countries, people and climates. From Basra he moved to Cairo where he wrote his second extensive book *Muruj al-Zaman*. His first book was completed in 947 AD. He also prepared a supplement, called *Kitab al-Awsat*, in which he compiled historical events chronologically. In 957 AD, the year of his death, he completed his last book *Kitab al-Tanbih wa al-Ishraf*.

Masu'di is referred to as the Herodotus and Pliny of the Arabs. He initiated a change in the art of historical writing, introducing the elements of analysis, reflection and criticism, which was later on further improved by Ibn Khaldun. In particular, in *Al-Tanbih* he makes a systematic study of history against a perspective of geography, sociology, anthropology and ecology.

With his scientific and analytical approach he has given an account of the causes of the earthquake of 955 AD. He is the first author to make mention of windmills, which were invented by the Muslims of Sijistan.

Masu'di also made important contributions to music and other fields of science. In his book *Muruj al-Thahab*, he provides important information on early Arab music as well as music of other countries.

His book *Muruj al-Thahab wa al-Ma'adin al-Jawahir* (Meadows of Gold and Mines of Precious Stones) has been held as 'remarkable' because of the 'catholicity of its author, who neglected no source of information and of his truly scientific curiosity.' As mentioned above, it was followed by his treatise *Muruj al-Zaman*. In addition to writing a supplement *Kitab al-Awsat*, he completed *Kitab al-Tanbih wa al-Ishraf* towards the end of his career. It is, however, unfortunate that, out of his 34 books as mentioned by himself in *Al-Tanbih*, only three have survived, in addition to *Al-Tanbih* itself.

Whatever he has recorded was with a scientific approach and constituted an important contribution to geography, history and earth sciences. He was one of the early scientists who propounded several aspects of evolution viz., from minerals to plant, plant to animal and animal to man. His researches and views extensively influenced the sciences of historiography, geography and earth sciences.

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

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