

# ISLAMIC ACADEMY OF SCIENCES Newsletter



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## Pakistan hosts 12<sup>th</sup> IAS Scientific Conference on Materials Science and Technology and Culture of Science



- Islamic Organisation for Medical Sciences; Kuwait City, Kuwait;
- Higher Council of Science and Technology, Amman, Jordan;
- Arab Bank, Jordan;
- National Centre for Human Resources Development, Amman, Jordan; and
- Dar Al-Dawa' Company, Amman, Jordan.

The main objectives of the conference were:

- (1) To study some specific topics of importance to the field of new materials and future applications related thereto, and review the materials research activities undertaken in OIC countries;
- (2) To study the importance of materials science and technology to increasing wealth and the quality of life, especially how materials and materials science affect healthcare, the environment, sustainability, communications, innovation, education...;
- (3) To bring together those working at the cutting edge in new materials research in academia, industry and other research organisations, whether they are involved in materials science, chemistry, physics or engineering work;
- (4) To appraise some contemporary concepts in Nanotechnology with the aim of disseminating them in OIC and developing countries; and
- (5) To attempt to define a role for governments in materials research in terms of priorities, regulation, funding, private-public sector collaboration.

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**King lays cornerstone for the SESAME Project**

His Majesty King Abdullah II laid the foundation stone for the establishment of the International Centre for "Synchrotron-light for Experimental Science and Applications for the Middle East." Work to build facilities of the laboratory which will be located at Al Balqa Applied University, Jordan, was attended by Director General of the UNESCO; Koichiro Matsuura, and Deputy Director General of the Department of Nuclear Sciences and Applications at the International Atomic Energy Agency (IAEA); Prof. Werner Burkart. Seven countries namely Bahrain, Egypt, Iran, Israel, Jordan, the Palestinian National Authority, and Turkey have officially joined SESAME. The total cost of the laboratory will reach JD4 million.

Jordan's Minister of Education Dr Khaled Touqan noted that efforts were being exerted to support the project by an additional \$10 million. In remarks he made during the opening ceremony, he said that the establishment of the project was in line with the national efforts led by His Majesty King Abdullah to transfer Jordan to a centre of R&D activities in the Middle East.

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Under the patronage of His Excellency the President of Pakistan General Pervez Musharraf, and in the presence of H E Chief Justice Sheikh Riaz Ahmad, Acting President of Pakistan, the Islamic Academy of Sciences convened its twelfth international conference in Islamabad (Pakistan), during 14-17 October 2002. The conference addressed the themes of *Materials Science and Technology* and *Culture of Science*.

The conference, which was held at the Serena Hotel, was an open scientific activity in which over 100 participants representing over 25 countries participated. It was organised and sponsored by the following organisations:

- Islamic Academy of Sciences (IAS), Amman, Jordan;
- Pakistan Academy of Sciences, Islamabad, Pakistan;
- OIC Ministerial Committee on Scientific and Technological Co-operation (COMSTECH), Islamabad, Pakistan;
- Islamic Development Bank (IDB), Jeddah, Saudi Arabia;
- OPEC Fund for International Development, Vienna, Austria;
- Arab Potash Company, Amman, Jordan;



## IAS General Assembly meets at Islamabad

Under the chairmanship of Dr Abdel Salam Majali, IAS President, and the participation of forty Fellows as well as the IAS Director General, the General Assembly of the Islamic Academy of Sciences held its thirteenth regular meeting on 16 October 2002, at the Islamabad Serena Hotel.

The General Assembly went through an extensive agenda that included a review of financial statements, programme, and organizational matters.

At the start of the meeting, Moneef Zou'bi, IAS Director General, presented a report on the activities of the Academy since the previous meeting, which was held in Rabat (Morocco) in 2001. In his report, the DG divided up the work of the IAS into 8 main activities that included: the annual conference, the science journal, training, publications, awards, contacts, fund-raising, and IT related activities. He then presented a brief run down of actions taken under each heading.

The DG concluded by mentioning that the IAS had moved forward considerably in its efforts to become the *Think Tank* and a *Scientific Programme Implementer* of OIC countries, adding that most of the income of the IAS was expended on scientific activities of capacity building nature.

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 2001 Statement of Accounts.

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. Fellows attending the meeting subsequently took part in a secret ballot to elect new Fellows from among the list presented to the House by the Council.

The Assembly spent some time discussing future programmes of the IAS. Moreover, the General Assembly commended the effort of the editorial committee and the IAS Council for publishing the 2000 Conference proceedings book in a quality comparable to international standards.

## New Academy Fellows elected

At its Islamabad meeting, the General Assembly of the Islamic Academy of Sciences ratified the results of the 2002 Fellowship elections. The elections resulted in 6 candidates obtaining the required number of votes, thus becoming the newly elected Fellows of the Islamic Academy of Sciences.

The newly elected IAS Fellows are:

- |                                     |                             |
|-------------------------------------|-----------------------------|
| 1. Prof. Sajjad Alam                | Bangladesh/Physics.         |
| 2. Prof. Muhammad Iqbal Choudhary   | Pakistan/Organic Chemistry. |
| 3. Prof. Oussaynou Fall Dia         | Senegal/Geology.            |
| 4. Prof. Mehdi Golshani             | Iran/Physics.               |
| 5. Prof. Mohammad Shamim Jairajpuri | India/Zoology.              |
| 6. Prof. Munir Ozturk               | Turkey/Biology.             |

With the 2002 Fellowship election over, the number of IAS Fellows stands at present at 100.

The Editorial Board congratulates the new members of the IAS on their election and wishes them success in the service of the Islamic Academy of Sciences.

## Council holds Twenty-Eighth Meeting

Alongside the 2002 Conference of the Academy held in Islamabad (October 2002), the IAS Council convened its Twenty Eighth Meeting at the Islamabad Serena Hotel, under the chairmanship of Dr Abdel Salam Majali, IAS President.

The meeting was attended by Vice-Presidents Diop and Shami; Treasurer Badran; Secretary General Ergin; and Members Bor and Haider; as well as IAS Director General Moneef Zou'bi.

During the meeting, IAS Director General presented a comprehensive report on the various activities undertaken by the Secretariat of the IAS during the previous twelve months including the arrangements made for the 2002 Conference on Materials.

The DG mentioned that the IAS had moved forward considerably in its efforts to become the *Think Tank* of OIC countries, adding that most of the income of the IAS was expended on scientific activities of capacity building nature.

The Council reviewed the financial statements of 2001 and those of the first few months of 2002, and made a number of observations as to how such accounts needed to be presented in the future.

The Council listened to the report presented by Prof. Naci Bor on the status of the IAS's Medical Journal which for some considerable time was published both in electronic format on the Internet as well as classic format, and commended the chief editor's untiring effort in publishing the Journal.

The Council discussed a number of programme ideas that were presented by the Director General and reviewed a list of themes that could be addressed at a future conference of the Academy ultimately deciding to adopt Energy as theme for 2003.

The President of the IAS briefed the Council on a number of fund-raising activities that were made during the previous twelve months including the visits made to Kazakhstan and Turkey.

Before concluding, the Council discussed and approved the short list of nominees that was going to be proposed to the IAS General Assembly Meeting for a vote.



## IAS Publishes new book

The IAS has recently published the proceedings volume of the Tenth IAS Conference, held in Tunis (Tunisia), during November 2000, under the title "Information Technology for Development in the Islamic World."

This publication, which carries the same title as the conference, has been divided up into six parts with respect to the conceptual aim of the presented material.

**Part One** consists of the statements and messages presented at the opening ceremony of the conference. The present state of the Islamic world in terms of information technologies (IT) and future expectations and implications have been grouped in **Part Two**. Detailed information about the national perspectives on IT was presented at the conference by delegates from several states. Some selected IT scenarios of a number of countries are presented in **Part Three** in an alphabetical order. Some Macro aspects of Information Technology policy issues are given in **Part Four**. This part encompasses themes that were addressed in the various roundtable sessions that formed part of the conference.

**Part Five** contains two presentations that cover important 'theoretical' themes related to IT, namely "Agents Technology," and "Group Theory" in relation to applications in IT. Other papers in this part look at IT application in digital imaging, the experience of Maktoob.com, and IT impact on biological sciences as well as IT application in hospital management.

The book will help the reader better understand where this current IT wave will lead to. He/she will be able to get a picture of the potential of IT to jump start a speedy development in under developed economies. Moreover, one will be exposed to a number of varied and interesting facets of IT applications in areas that affect life in a very profound way.

## EDITORIAL LETTER

### *S&T for IT? IT for S&T?*

*In every country, alongside the business community, it is the scientists, the academics and researchers as well as high school and university students who are the first to use E-mail and the Internet.*

*But although, it is the science community in developing countries that are the first to benefit from ICT, the amount of ICT research currently being carried out at scientific institutions in such countries is very small. A good percentage of the research in fact on the 'science' of ICT is done by Third World students studying and working in First World countries.*

*Building a matrix encompassing Science and Technology (S&T) and ICT to cover this particular aspect would be a very useful exercise for the scientific community in developing countries to go through, in order to stimulate research in ICT related topics.*

*In ICT application, the scientists and technologists of OIC countries have certainly benefited from ICT in terms of getting access to research material and also getting their scientific research published, however there is a lot more that needs to be done to arrive at an optimal level of ICT utilisation for S&T advancement in OIC countries.*

*ICT can and has the potential to bridge the gap between scientists and Third World scientists in particular who live in OECD countries and their counterparts in developing countries. For that, the science community in our countries have to be thankful.*

*However, a new wave of brain drain is also witnessed with large numbers of young highly dynamic IT specialists from developing countries being systematically drawn into the large IT corporations in the West.*

*This is a grave problem than could potentially disrupt any IT-dependent development policy that developing countries implement.*

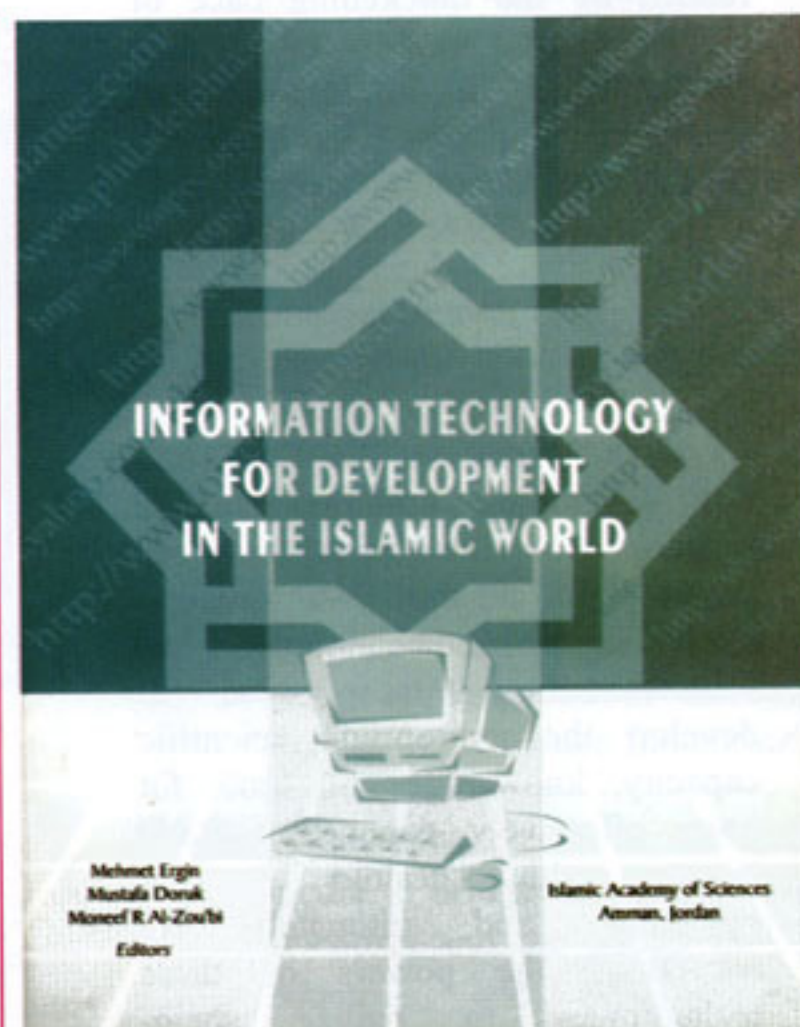
*Another potential problem lies in the rather unpredictable demand for IT specialists, especially university graduates, seen in many developing countries.*

*All our countries are invited to, at some point soon, address these issues so that the potential 'good' of ICT for development, especially S&T development, could be realised fully.*

**Moneef R Zou'bi**  
Director General, IAS

**Information Technology for Development in the Islamic World – Proceedings of the ninth international IAS conference, Tunis (Tunisia) (2000) – Published by the Islamic Academy of Sciences (2002). Hardcover, 485 pages, 266 x 190 mm, illustrated, English, ISBN 9957-412-03-5,**

**Editors: M Ergin (Turkey), M Doruk (Turkey), M R Zou'bi (Jordan). Price US\$ 30-00, including p&p.**





## IAS Islamabad Declaration on Materials Science and Technology and Culture of Science

**Adopted at Islamabad (Pakistan), on the  
9 Sha'aban 1423  
16 October 2002**

### Preamble

1. *Allah* (God) *Subhanahu Wata'ala* has not only created man and endowed him with reason, but He has also made the pursuit of knowledge an obligation. Accordingly the teachings of Islam emphasize the importance of carefully using the resources of the universe for the lasting well-being of man.
2. Concepts such as sustainability, and analytical tools such as human development indicators, provide conceptual frameworks for linking R&D to societal outcomes. This leads towards the implementation of an approach to R&D policy that addresses the complex interconnections between technological advance and societal response.
3. Recent decades have witnessed significant changes in knowledge-production systems, especially in scientific research and related applications. These changes are fuelled by the quickening pace of globalization and by new developments in Information and Communication Technologies (ICTs), Biotechnology and the field of materials-science and engineering, including the new and exciting Nanotechnology.

### Proposals

4. For developing countries to be prepared for the transformational power of the Information Technology, Biotechnology and Nanotechnology, they need to develop the appropriate scientific capacity, knowledge and tools for more effectively connecting R&D inputs with desired societal outcomes, and ultimately for harnessing the powers of these technologies to realize socio-economic development. This would

require the creation of a dedicated intellectual, analytical, and institutional capability, focused on understanding the dynamics of science and the science-society interface. Such a capability can include the following elements:

- a) *Analysis of past and current societal responses to transforming technologies*

A case-history approach could be used to investigate how society has responded to a range of technological advances. Understanding the roles and relations between the media, academia, policy makers, institutions, and cultural factors could be the basis for assessing the likely trajectories of technology-induced social change.

- b) *Biotechnology and Nanotechnology enterprises need to undergo comprehensive, real-time assessment and monitoring*

A database of important activities in Biotechnology and Nanotechnology should be built, and then track the evolution of these enterprises, in terms of directions of research and innovation, resources used, public and private-sector roles, publications and patents, marketed products, and other useful indicators.

- c) *A constructive technology assessment process, with participants drawn from representatives of the R&D effort, policy-makers, and the public can lead to a better understanding of the potential of Nanotechnology*

Technology assessment is both a process for bringing together a range of actors, and an evolving product that can the innovation and decision-making processes. Understanding the changing capabilities of both the Nanotechnology enterprise and various sectors and institutions likely

to be affected by the enterprise can contribute to a healthy policy-making environment where innovation paths and social goals are compatible and mutually reinforcing.

- d) *Mapping out Nanotechnology's route*

Should Nanotechnology yield a small proportion of its anticipated advances, the impact on society can be far-reaching and profound - "as socially transforming as the development of running water, electricity, antibiotics, and microelectronics." We can allow these transformations to surprise and overwhelm us, or we can be smart about preparing for the coming changes, in order to enhance the benefits, and reduce the disruption, that accompanies any scientific revolution.

- e) *A thorough and objective review of the state-of-the-art Technology Trio: Information Technology, Biotechnology and Nanotechnology*

Economics-related yardsticks to evaluate the E-readiness, B-readiness and N-readiness scenarios in OIC and developing countries need to be undertaken as a prerequisite to drawing the attention of the decision-maker, and investor to these vital sectors.

### In Materials Science and Technology, this meeting calls for;

5. Formation of specialists groups in Advanced Materials Science and Technology in areas such as:
  - (i) Reactor based research in Materials Science and Technology;
  - (ii) Accelerator based research in





- Materials Science and Technology;
  - (i) Nanotechnology of materials;
  - (ii) Materials for alternate or renewable energy technologies;
  - (iii) Bio-materials;
  - (iv) Special materials for the aerospace industry;
  - (v) Materials Science and Technology for Information Technology;
6. Establishment of collaborative centres for the OIC similar to CERN (Geneva), and ILL (Grenoble);

One current opportunity is the SESAME project, the Synchrotron Radiation Facility for the Middle East, "Bessy-1," donated by Germany and being set up in Jordan under the auspices of UNESCO. The facility is expected to go into operation in 2006. This is a very versatile facility for Materials Science research in a number of scientific disciplines including Physics, Biology, Chemistry, Medicine etc.

7. Undertaking training and education programmes in Materials Science and Technology:
- (a) Sharing of expertise in specific strong areas of research between OIC member countries; and
  - (b) Exchange of professors for short term lectureships.
8. Implementing joint projects between existing strong similar areas of expertise in OIC member countries;
9. Maintaining strong technical links and collaboration with Researchers/Centres of developed countries of Europe, United States, Japan as well as Korea and China, etc...
10. Focussing on strong collaboration with scientists and research centres in central Asian states;
11. Cultivating strong linkages with decision makers and the media for expanding activities in Material Science and Technology areas;
12. Publishing of a Journal on Material Science and Technology in collaboration with OIC centres that are doing research in this area.



**In Culture of Science, this meeting accordingly recommends that**

13. A science-communication initiative is launched, within the context of the Culture of Science Initiative of the IAS, to foster dialogue among scientists, technologists, policy makers, the media, and the public.

*Understanding, tracking, and enhancing the processes by which information about science and technology diffuses from the laboratory to the outside world is central to understanding the social-transformation process as it occurs. Of equal importance is the need to understand and monitor how public attitudes and needs evolve, and how they reach back into the innovation system.*

14. Action is taken to set up an international multi-disciplinary group, to initiate and develop a dialogue and positive interaction between scientists, technologists and Islamic scholars, in order to:

- (i) Lay down operating principles to resolve the moral and social issues that arise in the introduction of modern science and technology for the development of Muslim communities the world over;
- (ii) Develop such approaches to continuously determine appropriate responses to the so-called "Modernity," on the basis of Quran and Sunnah, for the best implementation of maximum good for all;
- (iii) Undertake a programme for the integration of perennial knowledge with acquired knowledge, on the lines of the integrated curricula developed and being implemented in countries such as Malaysia and Indonesia;
- (iv) Utilise the electronic and print media to bridge the gap between scientists and the public in OIC countries, and between OIC countries and Western countries.



(Continued from page 1)

## Pakistan hosts IAS Conference

In addition to a keynote that overviewed recent developments in science and technology in Pakistan, which was presented by Prof. Atta-ur-Rahman (FIAS), Minister of Science and Technology in Pakistan; 2 other keynotes were presented. The first carried the title *Engineering Materials: Driving Force of Technology*, and was presented by Prof. A Q Khan (FIAS), President of the Pakistan Academy of Sciences; and the second on the *Culture of Science*, was presented by Dr Hussein Gezairy, WHO Regional Director for the Eastern Mediterranean Region.

A paper on *Nanotechnology Research in China* was presented by the director of the Centre of Nanoscience of the Chinese Academy of Sciences during a special session that was dedicated to Nanotechnology. That was followed by a video-conference presentation by Dr Alan Hewat of the Institute Laue-Langevin on *Neutron Diffraction and the Structure of New Materials*, in a specialised session that was dedicated to *Nuclear Techniques in the Study of New Materials*. A number of short introductory lectures were also arranged throughout the programme of the conference in order to introduce the specific aspects of the theme to the participants who belonged to a number of scientific disciplines.

At the conclusion of the three-day conference in which 25 papers were presented, the Academy adopted the IAS Islamabad Declaration on *Materials Science and Technology* and *Culture of Science*.

The declaration proposed the implementation of an approach to R&D policy that addresses the complex interconnection between technological advance and societal response. It highlighted that changes have been taking place in the knowledge production systems that were fuelled by globalisation and by new developments in Information Technology (IT), Biotechnology (BT) and Nanotechnology (NT).

The declaration proposed that for OIC and developing countries to be prepared for the transformational power of IT, BT and NT, they need to develop the appropriate scientific capacity, knowledge and tools for harnessing the powers of these technologies.



The declaration made a specific mention of some joint collaborative research programmes that could be launched along the same lines as CERN (Geneva), and ILL (Grenoble), specifically highlighting the Unesco-sheparded SESAME project that involves the hosting by Jordan of the Synchrotron Radiation Facility.

On the theme of *Culture of Science*, the declaration emphasized that understanding, tracking, and enhancing the processes by which information about science and technology diffuses from the laboratory to the outside world is central to understanding social-transformation processes as they occur. Of equal importance, it elaborated, is the need to understand and monitor how public attitudes and needs evolve, and how they reach back into the innovation system.

As part of the follow-up action to the conference, the Academy will circulate the IAS Islamabad Declaration to concerned individuals and relevant agencies throughout in 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 *Materials Science and Technology* or undertake research in the field of 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.

### HRH Prince El-Hassan sends message to 12<sup>th</sup> Conference

HRH Prince El-Hassan, Founding Patron of the Islamic Academy of Sciences, sent a message to the Twelfth IAS Conference on Materials Science and Technology and Culture of Science, which was read out at the opening session of the conference by Moneef R Zou'bi, IAS Director General, Jordan.

In his message to the conference, HRH commended the Islamic Academy of Sciences for choosing – materials science and the culture of science – as the themes to be addressed by the IAS at its Islamabad conference.

A précis of the speech of the chief guest and HRH's is given below. The two speeches will appear in the conference proceedings book in their entirety for both, together with the statement of IAS President, represent valuable documents on the topic of Materials Science and Technology and Culture of Science.



## ***H E the Acting President of the Islamic Republic of Pakistan***

The Acting President of Pakistan, after welcoming the participants suggested that their assembly was a testimony to their determination to introspect and find ways and means to strengthen the economic base of the *Ummah* through scientific and technological selfreliance.

The events of the previous year have resulted in a radically changed global scenario and bred negative attitudes towards the Islamic world, he added.

That, he went on to say, makes it all the more essential that we move ahead in our resolve to match adversities by accomplishments in the field of science with a renewed sense of urgency.

Commenting on the "floodgates of reactions (that) have opened, implicitly if not overtly," against Muslim countries, he suggested that such reactions are both unjust and unrealistic, describing how Islam stands for a culture of tolerance and places the highest premium on human rights, men and women included, and mutual respect for fellow beings.

"It is this very image of Islam that must emerge from our actions and must be shared with world communities," he explained.

The Acting President went on to describe how Islam had, in the single concept of "Ilm", taken in its grip both science and the broader pursuits of knowledge. He added that, "attainment of scientific knowledge is an irrefutable prerequisite for its utilization by the self-reliant nations for the benefit of their peoples."

In this age of revolutionary breakthroughs in communication technologies, it has become much easier to share information in the field of science and technology with the privileged nations of the world and across institutional and national boundaries, he went on to say.

He then suggested that just as the nations of Europe benefited from their interaction with contemporary Muslim scientists, Muslims cannot work in isolation and must maintain a healthy liaison with the western world in their scientific endeavours.

Talking about the IAS, he said that the Islamic Academy of Sciences had a very impressive tradition of organizing conferences on subjects of contemporary

importance, and that people in Pakistan feel greatly honoured and privileged to host the current conference. The activity, he added, represented a timely thought on the part of A Q Khan and the Pakistan Academy of Sciences.

The chief guest went on to suggest that the conference should focus not merely on the immediate themes selected, but also on the greater expectations of the *Ummah* in the scientific and technological fields, suggesting that a framework of policies based on pooling of resources of skill and wealth through mutual cooperation and understanding should be generated.

He added that the conference provided a historical opportunity by bringing a large body of scientists from Pakistan and other Muslim countries to a common platform in Islamabad. "It is a momentous opportunity that must not go to waste."

Talking about the Pakistan Academy of Sciences and COMSTECH, the chief guest suggested that both have been playing active roles in their own right in developing programs of scientific cooperation in the OIC region. COMSTECH has initiated exciting programs of cooperative research, exchange of scientists, training of technicians, maintenance of scientific equipment, and in developing a culture of dedicated scientific efforts aimed at raising the infrastructure of science in Muslim countries.

The IAS itself, the chief guest added, is in a very strong position to lead the *Ummah* in sciences and in shaping its economic future, through providing guidance to scientists, governments of the OIC Member States and policy-makers of the Muslim world.

Addressing the concept of "Culture of Science," he suggested that whereas there is urgency to take measures for innovative changes in the scientific approach and to institutionalize a culture of science in Islamic countries, there is a need to spotlight some ethical, moral and legal accompaniments of scientific and technological progress and their impact on societal development and our moral fabric. "Specially relevant in this context are the ongoing debates on cloning, stem cell research, genetically engineered foods, environmental complications, and no less importantly, intellectual property rights," he elaborated.

Referring to the importance of education, the chief guest said that there is

no denying the fact that our survival as a Muslim *Ummah*, both in terms of economy and defense potential, depends entirely on the kind of science education we impart to our children. On the role the IAS can play in this endeavour, he suggested that the IAS can help develop a long range perspective plan for promotion of scientific literacy in the Islamic world with special focus on quality, morals and ethics. "The dignity of nations in a highly competitive world depends on the quality of its educational institutions of learning as well as on productivity of scientific knowledge and its applications in particular," he explained.

Harnessing the Islamic world's God-given natural resources and linking that to education was also highlighted in the chief guest's speech: "It is heartening to note that the natural resources with which the Muslim world is gifted, are immensely vast and precious. Their sustainable exploitation and utilization for the benefit of our peoples demands that we mobilize both the political will and earnest efforts to achieve excellence in all fields, in phases to begin with, by taking revolutionary steps in upgrading our educational system. It is the quality of educational opportunities which the *Ummah* promises to provide to its youth that will lead the Muslim world to compete successfully in areas of high technology in the 21<sup>st</sup> century."

The Acting President of Pakistan also addressed the question as to how long can the OIC peoples remain consumers of technology rather than producers of technology? "The Muslim world can place its faith in IAS for guidance in these matters of utmost urgency and in coping with the compulsions of a global economy warranting new initiatives and strategies for progress."

The chief guest concluded by expressing his confidence that the conference would generate a number of new ideas.

## ***HRH Prince Al-Hassan Ibn Talal***

In his message to the conference, HRH noted that the themes chosen to be addressed by the IAS – materials science and the culture of science – seemed particularly appropriate for discussion in Islamabad, where so much human history lied behind the newly-created city.

He went on to propose that the phrase 'culture of science' derived from Latin words, which might also be



interpreted as 'caring about knowledge.' As such, HRH added, it recalls the Graeco-English word 'philosophy' – the love of wisdom. Yet, he declared, that advances in the culture of science did not correspond with any philosophy, which allows us to understand the human heart and head.

Prince Hassan then suggested that, "there are many clever people in our world but, sadly, few wise ones. Without some overarching principle or guide for our pursuit of knowledge, what separates a 'culture of science' from a mere 'cult of technology'?"

He went on to mention how the Europe of the Enlightenment did not only separate Church from State, but also separated scientific knowledge from religious or philosophical knowledge. He cited European thinkers such as Auguste Comte, who defined new humanitarian and scientific agendas by excluding religious thought from the field, and suggested that approach led to rapid and rewarding advances in scientific disciplines.

However, he added, "We see that these advances have not solved the problems of the world – hunger, violence, abuse of the weak and environmental degradation."

"The secular culture of science," as HRH called it, and especially advances in materials science and technology, "have given us the *means* to feed everybody, protect everybody, and live in harmony with nature; but they have not given us the *will* to achieve these aims."

HRH then drew parallels between Archaeology, which is largely devoted to finding and studying the results of earlier industries and technologies, and Materials Science, and man's constant research into the properties of ceramics, alloys, polymers, crystals and compound materials and his earliest development as a tool-maker.

HRH went on to mention some scholars who had spoken on the topic of science teaching and how it should inspire reflection, adding that the Holy Qur'an admonishes us repeatedly to observe the variety and diversity of the world that God created, and to seek learning, and to educate others thoughtfully.

He then highlighted the fear that some scholars have that, "... as the pace of

scientific discovery accelerates, even college-educated individuals will find it harder to deal with a bewilderingly complex environment. The temptation to opt for the simplistic solutions offered by various faiths will grow."

"In other words, we face a paradox. In defining a culture of science, we seek some higher moral order that will direct our findings towards worthy ends. It has long been the task of religious faith and institutions to educate and preserve that higher moral order. At the same time, we cannot presume to destroy the complexity of creation and mankind in the name of reductionist religious theories which describe the richness and variety of life as perversions." "No one has a monopoly upon the truth, he concluded."

HRH then re-iterated that science and technology are activities that are full of values and value-judgments, which in turn form new fields such as bio-ethics and info-ethics, and warned that scientists and technologists carry great moral responsibilities not just for their fields of research but for all humanity – just as religious leaders also carry great moral responsibility, not only for their co-religionists but for all people.

HRH went on to mention the conference on 'Health and Social Justice' which was held in Amman, Jordan, in October 2002, which addressed such topics as the provision of medicines to the poor, tracking of disease, interfaith perspectives on social justice, and trauma, adding that there has never been such a great need to find the common ground between science and religion – to discover their common goals of bettering the human condition.

He then mentioned the UNDP Report for the Arab World which reported three critical deficits which needed to be addressed urgently: freedoms, women's empowerment, and knowledge, and how these needs were repeated in the Mediterranean Development Forum.

He re-iterated that he believed that materials science had more to do with human capabilities and knowledge than with materials. "Politics and economics today are not delivering justice and freedom. People are turning to religious extremism in the effort to promote changes in an unbearable status quo. Where is science?"

He went on to cite examples of how countries are co-operating in projects dedicated to profit, but wondered whether, "We should be linked by concepts which develop the complementarities not only between the land and its resources but between the peoples of our lands?"

"The culture of science," HRH reverted, "is threatened by poverty and deprivation... The will to tackle those problems can make a huge difference with little resources, and greatly benefit future science."

He then cited examples from Brazil, which successfully tackled poverty and education problems by enabling children from poor families to go to school; and Pakistan, where Tasneem Siddiqui had described new approaches to the issue of *katchi abadis*, or squatter settlements, in the cities of Karachi, Hyderabad, Sukkur and Larkana, and suggested that success was due to the application of a truly scientific approach, observing and questioning the prescribed traditional method in order to improve conditions on the ground.

HRH then proposed that what we do not want a culture of science driven by a culture of violence in which arms spending overwhelms humanitarian assistance. "Great imagination and innovation are devoted to the development and sales of weapons of mass destruction. Is it not the task of scientists to devote just as much if not more energy and imagination to the promotion of the centrist ground and common human aspirations? Is it not possible to make use of pragmatism and logical positivism as scientific tools for material research, without abandoning the notion of a higher reality to which the human soul belongs?"

Looking into the future, HRH quoted the Chief Scientific Advisor to the UK government, Sir Robert May, who argued in a lecture entitled 'Science and Politics: Melding Facts and Values', that:

"We need to start a new debate at the international level, listening and learning from the values of countries from North and South, East and West, and pooling scientific knowledge, with a view to achieving some consensus on the problems that face us and how best they might be solved. We have a model



in the form of the Intergovernmental Panel on Climate Change, which collates the expertise of over 3000 scientists from around 170 countries, to delineate a landscape of scientific knowledge and uncertainty ...”

He then added that the Holy Qur'an exhorts us: "Let a group emerge from amongst you which calls for that which is good, orders whatever is right, and prohibits whatever is wrong."

HRH then concluded that, "Materials science holds out great hope for the future. It is the task of scientists to make sure some of that hope is delivered. Otherwise, our culture of science will not only decay into servitude under commerce and violence; it will come into terrible conflict with other modes of knowledge and other human truths. Scientists and religious leaders alike as human beings can cultivate a common ethic of centrist human values which will enable us to meet not only the material needs of people but also their non-material needs."

### **Prof. Abdel Salam Majali** **IAS President**

In his opening statement, Prof. Abdel Salam Majali, President of the Islamic Academy of Sciences, firstly thanked Pakistan and the Pakistan Academy of Sciences for inviting the IAS to convene its twelfth conference in Islamabad.

The convening of the conference, Dr Majali added, coming as it does, "when the smoke of war, aggression and terrorism is still smouldering all around us, and the dark clouds of confrontation hanging heavily over this part of the world, and over the Middle East," signals an unwavering determination to focus on bettering ourselves and on building a better future for the generations of tomorrow.

He then reiterated the profound admiration that the Islamic scientific community had for Pakistan and acknowledged the support that H E President Musharraf, COMSTECH, and Pakistani scientists, have given to the IAS.

Dr Majali then mentioned that technological innovation sustains a fundamental tension between humanity's quest for control over nature and the future, and our equally strong desire for

stability and predictability in the present. "Throughout history, sceptics were not against technology per se, but rather against losing their jobs, and so they smashed the power looms that had put them out of work."

He went on to talk about "progress" defining it as the central dynamic of the change wrought by technological advance that continually remakes society, adding that it can be the source of continual destabilization and dislocation as experienced by individuals, nations, and cultures.

Dr Majali made a reference to the Islamic civilisation, which "is amply endowed with examples of prolific scientific achievements that had an impact on life. Al-Khawarizmi's Algebraic theories to Al-Zahrawi's surgical techniques are good examples." He suggested that from the very early days of Islam when simple science was put to serve the cause of *Aqeedah*, concepts rose of how technology and technological advancement affected people's lives, and that it was that ideology that provided a most powerful source of inspiration, especially for Muslims' quest for knowledge.

He went to underline his historical narrative by pointing out to the power of new technologies to transform society, citing the example of that single class of technology ... nuclear weapons which was a central determinant of geopolitical evolution after the end of World War II. "Cars, television, air conditioning, and vaccinations have all stimulated deep changes in society during the past century," he added.

IAS President then suggested that new technologies rarely emerge in isolation claiming that the industrial revolution was a story of technological revolutions in transport, communication, construction, agriculture, resource extraction, and, of course, weapons development.

Referring to the Muslim *Ummah*, he suggested that our famous scientists, scholars and thinkers of the past really blossomed at times when the *Ummah* enjoyed unity, stability and clarity of role and vision, when justice prevailed, and when our profound *Aqeedah* was understood by all for what it really is....

Majali then talked about knowledge production systems, especially in scientific research and related applications, that are fuelled by the quickening pace of globalization and by

new developments in information and communication technologies (ICTs), biotechnology and materials science and engineering including the exciting world of Nanotechnology.

"For developing countries," he added, "the impact of transformational technology cannot be but extreme. Either we move toward a process of technology-supported societal progress where different sectors and activities can continually coevolve or develop in response to the growth of knowledge production at a breath-taking rate or we can simply watch wave after wave of transformational technologies pass us without undue regard! The choice is really ours, as it has always been."

He then emphasised that developing countries must ride the Information Technology, Biotechnology and Nanotechnology waves with confidence and determination, and salvage some controls over the transformational powers of these technologies.

He then suggested that the biotechnology revolution is already prophesied to be supplanted by the nanotechnology revolution in the first half of the new century. He then wondered as to, "What type of transformations might this revolution have in store?"

Quoting some futurists who predict that the promise of nanotechnology to remake our life was virtually infinite, Majali said that Nanotechnology was likely to revolutionize manufacturing, health care, travel, energy supply, food supply, warfare, transform labor and the workplace, the medical system, the transportation and power infrastructure, the agricultural enterprise, and the military.

He then suggested that the first wave of useful nanotechnologies will lie in the area of detection and sensing. "The capacity to detect, precisely identify, and perhaps isolate single molecules, viruses, or other complex, nanoscale structures has broad application in medical diagnosis, forensics, defense, and environmental monitoring. The potential for direct benefits is obvious; how might this evolving capacity influence society?"

He then added that when detection outpaces response capability, ethical and policy dilemmas inevitably arise. "For example, it is already possible to





identify genetic predisposition to certain diseases for which there are no known cures, or to diagnose congenital defects in fetuses for which the only cure is abortion. In the environmental realm, new technologies that detect pollutants at extremely low concentrations raise complex questions about risk thresholds and appropriate remediation standards." These dilemmas, he explained, may be expected to accelerate and proliferate with the advance of nanodetection technologies, and may be further compounded by the fact that nanotechnology offers a dizzying range of potential benefits for military applications, where some of the earliest applications of nanotechnology will come.

Prof. Majali stated that if countries wanted to prepare for the transformational power of a coming nanotechnology revolution, they would need first to develop the knowledge and tools for more effectively connecting R&D inputs with desired societal outcomes, through the creation of a dedicated intellectual, analytical, and institutional capability focused on understanding the dynamics of the science-society interface and feeding back into the evolving nanotechnology enterprise.

"This is indeed where I see the science academies of the *Ummah* including the Islamic Academy of Sciences playing a role. We need to start talking about humans and humanity again. When we talk about society, then we talk about the human being. His welfare, well-being, needs and aspirations, fears and ambitions, longing for security and stability, and freedom to fully realize his potential and use his God given capabilities to cultivate and harvests the fruits of his efforts."

He then elaborated that the *Ummah* had the capacity to achieve its potential and build a vibrant society quite adaptable to the societal change brought about by scientific advancement.

Addressing the current international scene, IAS President suggested that the new millennium started with the familiar cries of anger and violence, and some circles in the American administration wanting to transform the Islamic world. "To such people, I say that if we continue to depend on the rule of force, on power, as a deterrent, we will eventually be unable to disable violence."

He went on to highlight the need for all to be more sensitive to the concept of consequences: the consequences of poverty, illiteracy, lack of opportunity, despair and injustice, which could all lead to, "the contemplation of violence intolerance, prejudice and bigotry, which can eat away at our humanity and stamp on our sense of ethical obligations and duties."

The events of the last year or so, Dr Majali added, have produced a flood of reactions that are directed against Islam, most of which were unjust, unrealistic and unjustified. He proposed that the science leaders of the *Ummah* should, "address the world and project our pride in our Islamic civilisation and what it has achieved and how it contributed to the Western civilisations, for we belong to a civilisation that believes in dialogue."

He added that, "we must open up to the world and .... activate our goodwill-based bilateral interaction, in our quest to achieve commodity and natural resource security and thus national security."

"We must bridge science divides, digital divides, and maybe more importantly we must aim to bridge the hope divide," the IAS President concluded.

### **Prof. A Q Khan President of the Pakistan Academy of Sciences**

After welcoming the participants, Dr A Q Khan expressed his gratitude to Mr Justice Sheikh Riaz Ahmed, Acting President of the Islamic Republic of Pakistan.

Dr Khan firstly elaborated on academies in general and academies of sciences in particular saying that historically, academies, way back in the Greek period and during the heyday of Islamic domination of philosophy and the sciences, used to be educational centers where pupils gathered from across national boundaries to quench their thirst for knowledge. The Academies of Sciences of today, he added, exclude the functions that universities are better disposed to fulfil and function as supreme scientific organizations devoted to the promotion of science and its applications for the general welfare of humanity. They provide a forum for populization of science, advancement of scientific research and motivate scientists and

technologists to cooperate with fellow scientists the world over. These academies elect scientists of the highest merit as members or Fellows with outstanding contributions to the advancement of scientific knowledge.

Dr Khan added that the Islamic Academy of Sciences too stands to foster and nurture the aspirations of the *Ummah* for scientific progress, noting the IAS's eagerness to collaborate with the Pakistan Academy of Sciences and COMSTECH. "Needless to say that the Pakistan Academy of Sciences, Islamic Academy of Sciences and COMSTECH take boundless pride in jointly hosting this Conference in Islamabad."

The President of the Pakistan Academy of Sciences highlighted the fact that much of the economic progress achieved by the developed world would not have been possible without progress in the field of science, and the innovations and discoveries that have resulted from its application.

Describing the current international scientific scene, Dr Khan mentioned the rapid developments that are taking place in the fields of human and animal genome, biotechnology, bioinformatics, information technology, materials sciences and environmental sciences. He highlighted the specific importance of science and suggested that, "achievements of a country in the vital field of science are not only a measure of its prosperity but also of its respectability in the community of nations," suggesting that possession of scientific knowledge ensures the sovereignty of nations.

Dr Khan then stated that although the Islamic nation possesses vast natural resources, it has low rating in terms of the Technology Achievement Index. He claimed that only by strengthening universities and research and development organizations, would this be improved.

The Islamic Academy of Sciences, he added, can act as a catalyst in guiding the Islamic world towards rapid economic growth. The Pakistan Academy of Sciences can play a similar role in Pakistan, he said.

Dr Khan went on to suggest that globalization and trade liberalization





were some of the driving forces behind a new economic order. Recent advancements in information and communication technology, in his opinion, were compelling nations to be more competitive in the global market. He suggested that knowledge alone promises to raise productivity of capital through education, training of manpower, technological developments and creation of management structure, "... knowledge is the engine that drives nations towards a prosperous future."

Dr A Q Khan went on to propose an S&T model for the OIC countries. "As the *Ummah* nations seek to mobilize their social and economic systems to harness contributions from science and technology, there is a need to ensure a suitable S&T delivery system and an enabling environment. The challenge for our policy makers, thus, is to facilitate an environment that is conducive to creation of scientific knowledge and its application for technological innovations. He suggested that, "...partnerships must be created involving the public and private sectors in tandem with industry and academia. Research and development activities must be performed to meet market demands. Frameworks are needed to promote linkages among universities, engineering and technology institutions."

Dr Khan emphasized the great Islamic heritage in science as manifested by, "Al-Ghazali's Nizamiyah Academy at Baghdad in the 11<sup>th</sup> Century," while Europe was still desperately poor in comparison with the great civilizations of the East, but added that instead of merely revelling in our glorious past, the task on hand was to work for institutionalizing a culture and environment of science in the Islamic world. He re-iterated the fact that the foundations of the present day European wealth were laid down by industrial revolution, the roots of which lay in the single philosophical idea, which today is called Science and Technology.

It is fortunate, he added, that while most nations continue to simply rely on imported S&T with little concern for innovation and self-reliance, there nevertheless are lessons in the experiences of countries such as Indonesia, Korea and Malaysia. "The recent economic crisis faced by Indonesia had its origin in heavy dependence on foreign investment and multinational ventures, apart from other



reasons. Immediate preventive measures, however, involving major focus on provision of training in basic sciences and technology are now beginning to bear fruit through stress on equipping the youth with scientific skills for dealing with complex technological demands of the agriculture and medical sectors, to name a few."

In this paradigm, he added, basic sciences hold center stage as the fountain head for goal-oriented training and R&D and the university system is also rising to the occasion by offering guidance in scientific entrepreneurship for shouldering responsibility in times of crisis. "The Indonesian crisis reminds us of the value of sound economic system, social justice, national security and national pride. Self-reliance, the very ingredient of inner strength, is by no means a narrow national goal that aims at protecting and developing the poorly exploited but abundant natural resources at the disposal of the *Ummah*."

He then touched on the Korean experience, "...the Korean nation lost little time in launching a Programme for Promotion of Science and Technology Development. Beginning in 1972, this programme encouraged the private sector to adapt and improve imported technology and to develop domestic technology through R&D effort."

The Government in Korea, he emphasised, freely provided appropriate incentives to R&D enterprises and industries, and in 1977, introduced follow-up steps by granting further financial incentives, made R&D activities mandatory for strategic industries, ensured protective measures to create

demand for domestic technologies, and launched a movement for popularisation of science and technology as an integral part of its economic development policies.

The basic goal of this movement, he went on to say, was reorientation of the public's attitude and creation of a scientific environment in the country.

Dr Khan then talked about the Malaysian model, which he described as a success story in its own right and a befitting indicator of how crises can be overcome, with resolve.

Dr Khan then concluded by expressing his hope that the eminent scientists participating in the conference would ponder and strive to develop strategies of scientific cooperation among the Islamic nations that would lead towards self-reliance and sustainable economies in the Islamic community of nations.

He then thanked the Government of Pakistan, its various Ministries, the Ministry of Science and Technology, International bodies, national scientific organizations and private agencies for their sponsorship, moral and financial support for the conference. He went on to note the support provided by the Islamic Development Bank, COMSTECH, Dr A Q Khan Research Laboratories, Pakistan Atomic Energy Commission COMSATS, Hamdard Foundation, Pakistan Agricultural Research Council, National Bank of Pakistan, Askari Bank Ltd, and Habib Bank Ltd.

Moreover, he noted the effort of the Local Organizing Committee, headed by Prof. M D Shami, and the efforts of Eng. Moncef R Zoubi, Director General, IAS, and his staff, in organising the conference.





## IAS Ibrahim Memorial Award 2003

### Call for Nominations

The Islamic Academy of Sciences, Amman, Jordan, has instituted an Award in the name of one its Founding Fellows, the late Prof. Muhammad Ibrahim (1911-1988), who was an eminent medical doctor of medicine 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 Organistaion of the Islamic Conference countries that belong to the Organisation of the Islamic Conference.

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 1 July 2003.

## IAS Ibrahim Memorial Award 2003

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 US\$500 Awardee would be covered from the Award Fund and by the Academy.

A token honorarium of would be presented to the Awardee.

Contact IAS Secretariat

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### الأكاديمية الإسلامية للعلوم

الأكاديمية الإسلامية للعلوم مؤسسة مستقلة، غير سياسية، غير حكومية، وغير ربحية، تضم زملاء (أعضاء) مؤسسون ومنتخبون 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 النصح 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 الملائمة لغايات تبنيها 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: لينا جلال عارف، مسؤول برامج.

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

#### العنوان

١٧ شارع حيوي - الدوار السادس

أم أذينة - عمان

تلفون: ٥٥٢٢١٠٤ (٩٦٢٦)

٥٥٢٣٣٨٥ (٩٦٢٦)

فاكس: ٥٥١١٨٠٣ (٩٦٢٦)

#### العنوان البريدي

الأكاديمية الإسلامية للعلوم

ص. ب. ٨٣٠٠٣٦

عمان ١١١٨٣

المملكة الأردنية الهاشمية.

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

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### Useful Web Sites

Islamic Academy of Sciences

COMSTECH

Islamic Development Bank (IDB)

Medical Journal of the IAS

OICexchange

SESRTCIC

ISESCO

[www.ias-worldwide.org](http://www.ias-worldwide.org)

[www.comstech.org.pk](http://www.comstech.org.pk)

[www.isdb.org](http://www.isdb.org)

[www.medicaljournal-ias.org](http://www.medicaljournal-ias.org)

[www.oicexchange.com](http://www.oicexchange.com)

[www.sesrtcic.org](http://www.sesrtcic.org)

[www.isesco.org.ma](http://www.isesco.org.ma)



The synchrotron-light source will form the core of SESAME, an international centre of excellence providing training and research for Middle Eastern scientists in structural biology, environmental and materials science, including medical and other applications. The operating costs of SESAME have been estimated at US\$5 million yearly and Jordan has pledged to provide US\$ 1 million per annum over five years.

There are about 45 synchrotron-light sources in use around the world today. They operate by whirling particles, generally electrons, around a ring at a tremendous speed. Synchrotron-light covers a broad range of the electromagnetic spectrum (infrared to hard x-rays). It is the best available source of x-rays, providing a valuable source of information for scientists working in many fields, making it a uniquely multidisciplinary facility.

The project aims to advance research in the Middle East while fostering peaceful co-operation among the region's scientific communities. Mr Matsuura described research co-operation as "important for the social and economic development of the region" and as "an excellent tool for peace-building."

Pledging his support and calling on "all Middle East countries not yet members to join the SESAME project," Mr Matsuura declared: "By encouraging close working relationships between individuals and institutions, scientific co-operation offers concrete experience of the benefits of tolerance, solidarity and understanding. For the young scientists and PhD students who will use SESAME, the Middle East has always been synonymous with conflict and war. Through their scientific rapprochement they will be in the vanguard of the political rapprochement that this region so badly needs."



## **The Islamic Organization for Medical Sciences**

Invites nominations for prizes to be awarded by

### **The Kuwait Foundation for the Advancement of Sciences**

The **Kuwait Foundation for the Advancement of Sciences (KFAS)** has instituted two prizes to be awarded every alternate year to support and promote scientific research in the field of **Islamic Medical Science** in the following areas:

- 1- **Medical Practice, addressing professional and well-documented clinical and laboratory experiments;**
- 2- **Appropriate documentation of Islamic Medical Heritage including Medical Islamic Jurisprudence.**

#### **Nomination for the prizes are subject to the following:**

- 1- Documents submitted to KFAS should be original, published and academically significant in the field of Islamic Medical Sciences.
- 2- Nominations proposed by universities, scientific institutes, international organizations, individuals, past recipients of the prize and academic bodies are invited.
- 3- Closing date for acceptance of Nominations and/or Application including Nominee's Curriculum Vitae and all supportive documentation is Dec. 31, 2003.

Each prize consists of a cash sum of K.D. 6,000/- (U.S.\$ 20,000/- approx.), a KFAS shield and a certificate of Recognition.

Winners will be invited to receive their prizes at the Prize Awarding Ceremony during the commencement of the Organization's Conference.

#### **Mailing Address:**

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**Prof. Qurashi M. Ali FIAS**  
(Sudan)

Prof. Ali was born on 1951, in Munagaza/Sudan. He is married with 6 children.

Prof. Ali graduated from the University of Khartoum with an BSc in Basic Medical Sciences (Human Anatomy) in 1974. Obtained his PhD in Human Anatomy and Experimental Morphology, at the University of London (UK) in 1978, and afterwards a Bachelor of Medicine and Surgery (MBBS), from the University of Khartoum in 1981, and a Masters Degree (MMRD) in Diagnostic Radiology from Alexandria University (Egypt) in 1985.

He worked as a Lecturer of Human Anatomy at the Universities of Khartoum and Gezira (Sudan). He was promoted to Profesor by the University of Gezira in 1991.

Prof. Ali was appointed as Professor of Anatomy and Radiology and Dean, Faculty of Medicine Omduman Islamic University (Sudan), during Jan 1995-Aug 1996.

He was appointed as Undersecretary, Ministry of Health during 1996-1998. He was appointed as Vice Chancellor of Al Zaim Al Azhari University in June 1998-present.

He has contributed to the introcution of the integrated and problem-based learning of human anatomy at the University of Gezira and continued his practice as consultant radiologist, in Omdurman, Modern, Neilain and Al Alim (Private) Medical Centres.

Prof. Ali published about 40 papers, 4 books and numerous conference presentations on human anatomy, radiological anatomy, diagnostic radiology. Many other research activities and publications are in progress.



**Prof. Azret Yusupovich Bekkiev FIAS**  
(Balkar/Russia)

Prof. Azret Yusupovich Bekkiev was born in 1952, in Alma-Ata, Kazakhstan.

In 1969, he finished high school. In the same year he entered the Moscow Lomonosov State University (MSU), from where he graduated in 1975. After a two-year tenure at the High-Mountain Geophysical Institute as an engineer, he entered the postgraduate school of MSU. In 1982 he defended his thesis and got a scientific degree of Candidate of Physical and Mathematical Sciences.

Since 1981, he has been working at the High-Mountain Geophysical Institute as a research assistant and head of laboratory of optical research methods. In 1985 he got the scientific rank of the Senior Scientist in the field of "Physics," including quantum physics.

In 1990 Dr Bekkiev was assigned the director of High-Mountain Ecological Observatory, where he was in charge for 10 years.

In 1996 he defended his PhD thesis and got the scientific degree of Doctor of Engineering Sciences.

Dr Bekkiev was engaged in research investigations authoring more that 85 scientific works and inventions. Several times he was awarded with government awards: in 1982; the Lenin's Komsomol Premium of USSR, in 1996; the State premium of the Kabardino-Balkarian Republic in the field of Science and Engineering, in 1997; State premium of the Russian Federation in the field of Science and Engineering.

In May 2000, Bekkiev was appointed director of High-Mountain Geophysical Institute of the State Committee for Hydrometeorology and Environmental Monitoring.

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



**Prof. Ugur Dilmen FIAS**  
(Turkey)

Dr Dilmen was born on 1955 in Nevsehir, Turkey. He is married with two children.

He obtained his MD from Hacettepe University Ankara/Turkey in 1979, his MSc from the same University in 1982. He obtained his PhD from Ataturk University in 1994.

Prof. Dilmen was Chief Resident, Hacettepe Childrens Hospital, Ankara from 1982-1983. He was Physician in Chief, Turkish Health and Therapy Foundation from 1987-1994.

He was Professor of Pediatrics, Ataturk University, Medical Faculty, 1994-1996. He is Dean, Fatih University, Medical Faculty and he is Professor of Pediatrics and Neonatology, Fatih University, Medical Faculty, 1996-the present.

Prof. Dilmen was awarded a Cihad Tahsin Gürson Research Award in 1982; awarded a TÜBİTAK (Turkish Scientific and Technical Research Council) Award in 1988; and the Dr Ibrahim Memorial Award, Islamic Academy of Sciences in 1996.

Prof. Dilmen is a member of the Turkish Medical Society; and the World Medical Association.

Prof. Dilmen lists among his specific field of scientific interest; "Hypertension in Children," and "Neonatal Sepsis." His most cited paper is entitled; "Nifedipine in Hypertensive Emergencies of Children," which received around 50 citations.

Prof. Dilmen was elected as a Fellow of the IAS in 2001.





**Prof. Ibrahima Wone FIAS  
(Senegal)**

Dr Wone was born on 1926 in Matam/Senegal. Dr Ibrahima Wone is a preeminent professor of Public Health. He is a graduate of both the African School of Medicine and Pharmacy of Dakar and the University of Paris. He has attained the rank of Professor degree in Public Health and Preventive Medicine.

During the ten year period, 1964 to 1974, Dr Wone held the position of Director of Public Health for the Government of Senegal. In this official capacity he has travelled widely throughout the world, and became well versed in all aspects of his specialty, as is shown in his list published works.

He is widely recognized as the "Dean" of Public Health professors in Sub-Saharan Africa with a large cadre of physicians having trained under him. Not surprisingly he was recently elected President and Founder of the African Network of Public Health Schools, and continues to be member and President of the Technical Board of the Center for Higher Education in Nursing Care. Currently Director of the Institute of Health and Development, University of Cheikh Anta Diop of Dakar, Professor Wone continues to do research and teach physicians and other health workers in the field of Public Health.

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

## **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 organisations 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; 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.*

## **IAS Newsletter**

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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 12, Number 4. It carries four major articles: on Pharmacology by M Norazina, S Imanirwana and B Khalid; on Oncology paper by H Öztas; on Biochemistry by A Moshtaghi, S Rahimi and M Messripour, a Biochemistry paper by M Rahbani-Nobar, A Rahimi-Pour, F Adi-Beig and S Mirhashemi.

The Journal's web address is [www.medicaljournal-ias.org](http://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.



**IBN AL-NAFIS**  
(1213-1288 AD)

Ala-al-Din Abu al-Hassan Ali Ibn Abi al-Hazm al-Qurashi al-Damashqi al-Misri was born in 607 AH at Damascus. He was educated at the Medical College-cum-Hospital founded by Nur al-Din Zinki. In medicine, his teacher was Muhathab al-Din Abd al-Rahim. Apart from medicine, Ibn al-Nafis learnt jurisprudence, literature and theology. He thus became a renowned expert on Shafi'i School of Jurisprudence as well as a reputed physician.

After acquiring his expertise in medicine and jurisprudence, he moved to Cairo where he was appointed as the principal at the famous Nasri Hospital. Here he imparted training to a large number of medical specialists, including Ibn al-Quff al-Masihi, the famous surgeon. He also served at the Mansuriya School at Cairo. When he died in 678 AH. He donated his house, library and clinic to the Mansuriya Hospital.

His major contribution lies in medicine. His approach comprised writing detailed commentaries on early works, critically evaluating them and adding his own original contribution. His major original contribution was his discovery of the blood's circulatory system, which was re-discovered by modern science after a lapse of three centuries. He was the first to correctly describe the constitution of the lungs and gave a description of the bronchi and the interaction between the human body's vessels for air and blood. Also, he elaborated the function of the coronary arteries as feeding the cardiac muscle.

The most voluminous of his books is *Al-Shamil fi al-Tibb*, which was designed to be an encyclopaedia comprising 300 volumes, but it could not be completed due to his death. The manuscript is available at Damascus. His book on ophthalmology is largely an original contribution and is also extant. However, his book that became most famous was *Mujaz al-Qanun* and a number of commentaries were written on this. He wrote several volumes on Ibn Sina's *Qanun*, that are still extant. Likewise, he wrote a commentary on Hunayn Ibn Ishaq's book. Another famous book embodying his original contribution was on the effects of diet of health, entitled *Kitab al-Mukhtar fi al-Aghdhiya*.

Ibn Al-Nafis' works integrated the then existing medical knowledge and enriched it, thus exerting great influence on the development of medical science, both in the East and the West. However, only one of his books was translated into Latin, therefore, a part of his work remained unknown to Europe for a long time

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

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