

**Under the patronage of the Prime Minister of Qatar:
IAS Convenes 18th Conference in Doha
under the title:
*The Islamic World and the West:
Rebuilding Bridges through Science and Technology***



The 18th IAS Conference, 22-24 October 2012, Doha, Qatar.

Under the patronage of H E Sheikh Hamad Bin Jassim Bin Jaber Al-Thani, the Prime Minister and Foreign Minister of Qatar, the Islamic World Academy of Sciences (IAS) convened its 18th international science conference in Doha, the capital of the State of Qatar, during 22-24 October 2011. 'The theme of the conference was *The Islamic World and the West: Rebuilding Bridges through Science and Technology.*' The conference was followed by the 9th Doha Interfaith Conference, 24- 26 October 2011, under the title: 'Social Media and Inter-Religious Dialogue: A New Relationship,' which was organized by the Doha International Centre for Interfaith Dialogue (DICID).

Held at the Sheraton Hotel, the IAS Conference, which coincided with IAS's 25th Anniversary, was an open activity in which over 200 local and international participants representing over 35 countries participated. Among the participants were 55 Fellows of the IAS, the representatives

of 25 academies of sciences from around the world including the Netherlands, Hungarian, Portuguese, American, French and Russian academies of sciences; as well as the majority of academies of sciences of the OIC. Prior to the conference, the 19th Meeting of the General Assembly of the Islamic World Academy of Sciences –in which HRH Prince El-Hassan bin Talal, Founding Patron of the IAS participated- as well as the 37th Meeting of the IAS Council were arranged.

The 18th IAS Conference was organised by:

- Islamic World Academy of Sciences (IAS), Amman, Jordan;
- Permanent Committee for Organising Conferences, Ministry of Foreign Affairs of Qatar; and
- Doha International Centre for Interfaith Dialogue (DICID), Doha, Qatar.

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Moral legitimacy is shifting from the West

By Prince El Hassan bin Talal

The human dignity deficit is more important than the budget deficit. I first came to this conclusion six years ago while working on the Commission on Legal Empowerment of the Poor with the former US Secretary of State Madeleine Albright.

That was an initiative largely created to assist developing countries, but after recent discussions, it has become clear to me that this phrase today also applies to Europe and America.

Having in part grown up in the West, as a schoolboy in Britain and as a student at Oxford, I can't help wondering if society is changing in ways that are more than economic. It seems that the West is losing its legitimacy.

In the US what economic growth there has been in recent decades has largely gone to the top 1 per cent of the population, who today take nearly a quarter of the nation's income. The cost of funding the Pentagon and operations in Iraq every year is almost double what the US spends on education, health, housing and transport combined.

Since the crash of 2008, the biggest banks — which are now planning huge layoffs — have grown even bigger: Bank of America, JPMorgan Chase and Wells Fargo now hold more deposits than they did before the recession.

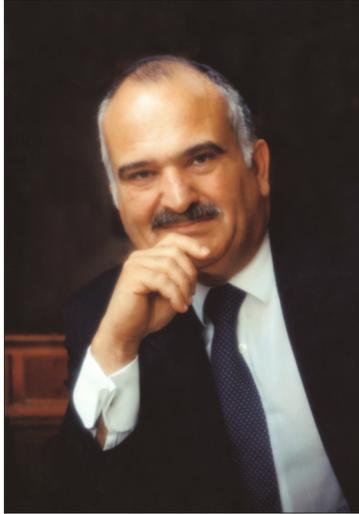
The largest six financial institutions in the United States have assets equivalent to 60 per cent of GDP. With the exception of one or two obscure mortgage company officials, not one banker or chief executive or anyone else responsible for the economic collapse has been brought to justice.

Meanwhile, hundreds have been arrested in the Occupy Wall Street protests in New York and the movement is spreading, with riots in Rome, demonstrations in Madrid and Sydney and protesters camped outside St Paul's Cathedral in London.

The issue is not simply one of raw economics. The protests spreading from New York are explicitly based on the recent uprisings in the Arab world. In the Middle East, patronage and a rentier system have strangled human aspiration and potential. In the West, the myopic search for profit and short-term advantage has created a corporate oligarchy whose interests are largely inimical to democracy.

The question is rapidly becoming not about Keynes or quantitative easing but whether the very machinery of Western democracy can guarantee the rights of individual men and women. For the first time the moral authority of the West, which is based on profound historical achievements, is open to question.

We can see this clearly beyond the world of economics in the continued existence of Guantánamo Bay, in settlements but no settlement in Palestine. The recent story that an Iranian-American used-car salesman was being groomed by Iran to assassinate the Saudi Ambassador to Washington was reported by many in the western media as a claim rather than as fact. Smoke and mirrors have for too long been a prelude to confrontation. Elsewhere, in Greece and Italy, unelected officials from the European Central Bank, the International Monetary Fund and the EU are dictating government policy to an extent that the President of Germany, Christian Wulff, said “struck at the very core of democracy.”



For all the analysis and argument, history will regard what is currently being attempted in Europe as very simple: an attempt to place the burden of huge debts on those who are least able to pay and who are not responsible for creating them. New Europe is fighting for its survival in positively medieval terms.

All the while the mythology of the West, as a place of enterprise, of meritocracy and opportunity, as somewhere “that didn't work like anywhere else” is being compromised. The consequences of this could be far more lasting than any recession could ever be. A dysfunctional West will find itself increasingly isolated and ignored. Countries hostile to the “imperial powers” will point to examples of the inequality, corruption, depression and demagoguery that they are accused of having, and will do so very much in their own interests. The world will search for new models — in India or China — for better or for worse.

To some extent this is already happening, although in countries such as Jordan we are beginning to understand that our economic and political redemption can only come from within, while keeping in mind the advice and experience of others.

Since 9/11, the Middle East has been forced to look inwards. Our young have asked themselves “Who are we?” and “What do we believe in?” They have been working very hard to answer these questions. Meanwhile, the West seems to be forgetting the convictions that made it great and of which its economies have always been a by-product.

HRH Prince El Hassan bin Talal is Chairman and Founder of the Arab Thought Forum and the West Asia North Africa Forum.

New Academy Fellows Elected

Membership of the IAS is made up of Founding and elected Fellows. IAS Fellows are eminent scientists with sizeable contributions to the development of science and technology in their countries and internationally.

The IAS organises an election every year through which existing Fellows nominate and then elect new members to the Academy Fellowship. Since its establishment in 1986, 95 Fellows have been elected through annual postal ballots, the results of which are ratified and then announced at the end of year General Assembly of the IAS.

At its Doha meeting, the General Assembly of the Islamic World Academy of Sciences ratified the results of the 2010/2011 Fellowship elections. The elections resulted in a number of candidates acquiring the required number of votes and as such joining the IAS as newly elected Fellows of the Islamic World Academy of Sciences.

The newly elected IAS Fellows are:

1. Prof. David (Mohamed Daud) A. **Bradley** UK.
2. Prof. Prof. Tasawar **Hayat** Pakistan.
3. Prof. Aini **Ideris** Malaysia.
4. Prof. M. Ajmal **Khan** Pakistan.
5. Prof. Boudjema **Samraoui** Algeria.

With the 2010/2011 Fellowship election over, the number of IAS Fellows stands at 104. This after the passing away of Prof. Mazhar M. Qurashi (Pakistan), Prof. M. B. Fayeze (Egypt) and Prof. Mahmoud Hafez (Egypt).

The Editorial Board congratulates the new members of the IAS on their election and wishes them success in the service of the Islamic World Academy of Sciences (IAS), and the cause of 'science and technology for development' in general.

(Continued from page 1)

It was sponsored by:

- Islamic Development Bank (IDB), Jeddah, Saudi Arabia⁴
- OPEC Fund for International Development (OFID), Vienna, Austria⁴
- OIC Ministerial Committee on Scientific and Technological Co-operation (COMSTECH), Islamabad, Pakistan; and
- Arab Potash Company, Amman, Jordan.

The conference represented an attempt by the IAS to address relations between the Islamic World and the West in a number of domains. Such relations are constantly being put to the test as national political or developmental problems faced by OIC countries often have an international component of interest to the West. The objectives of the conference thus were:

- 1) To attempt to gauge events in the Islamic world and how they interact with the science and technology scene;
- 2) To air the views of scientists and academicians on ways to bridge the divide between the Islamic World and West, particularly through science and scientific and technological collaboration; and
- 3) To address a number of recurring questions on the History of Islamic Science and Science and Spirituality and how they affect international relations.

The conference was divided in seven main sessions: Keynotes, Islamic Science, Engineering and Technology (ISSTI V), Science in Action, Science and Health, Nuclear Energy, Role of Academies of Sciences in Bridging International Divides and Science and Spirituality.

The inaugural session of the conference included a welcome statement by the Qatari Deputy Prime Minister and Minister of State for Cabinet Affairs H E Ahmed bin Abdullah al Mahmoud; an address by HRH Prince El-Hassan bin Talal of Jordan, Founding Patron of the IAS; a short statement by Dr Mahathir Mohamad Hon. FIAS, and former Prime Minister of Malaysia; the message of the President of Pakistan to the conference read by Dr M A Mahesar, Assistant Co-ordinator General, COMSTECH; and the opening speech of Dr Abdel Salam Majali, former Prime Minister of Jordan and IAS President.

The first formal session of the conference included a keynote speech by Dr Mahathir Mohamad entitled 'The Islamic World and the West: Towards a Common Understanding through Development;' a presentation by Prof. Farouk El-Baz FIAS, Director of the Center for Remote Sensing at Boston University entitled 'Big Ideas Based on Science for Fast-Track Development: Emphasis on the Case of Egypt;' as well as a presentation by Prof. Atta-ur-Rahman FIAS FRS, the Coordinator General of COMSTECH in Pakistan which carried the title 'Building Bridges with the West through Knowledge Economy.'

In his presentation, Dr Mahathir emphasized the need for the Islamic World to adopt the learning attitude of the West, as the latter diligently learnt from the Islamic world during its golden age. He called for adopting science and mathematics as cores of the educational curricula as well as making every

student master at least one European language, especially 'English,' which has become the language of knowledge. Dr Mahathir went on to talk about the international scene and how worldwide crises (of governance, economy, and finance) were occurring everywhere, from Wall Street to Tokyo, including in many Arab countries. He went on to pinpoint an opportunity for the West and the Islamic World to learn from each other: the West can really benefit from the Islamic principles of economy and finance, while the Islamic World can learn from the more rigorous methods of management prevalent in the West.



Prof. El-Baz presented a project he has proposed for Egypt. It consists of building a North-South corridor parallel to the Nile to draw the population away from the Nile basin and thus provide more food and economic opportunities to the ever burgeoning population of Egypt. He highlighted that it was an ambitious project that was similar to projects built by India to facilitate the flow of humans, goods and services from one part of the country to the other.

Prof Atta-ur-Rahman presented an overview of the activities and achievements of the higher education sector in Pakistan over the previous decade showing in the process some impressive data: the salaries of Pakistan university professors being five times higher than those of federal ministers; linkage between Pakistani universities and western institutions increasing by a factor of around 50, some Pakistani universities climbing to the top-500 list of universities (of the Times Higher Educational Supplement); and the multi-million dollar scholarship program that Pakistan had launched for 5,000 students to earn their PhDs in the West.

The IAS has been organizing special sessions within its conferences on the history of Islamic science, engineering and technology. This is an activity that was started with the UNESCO back in 2006. The second session of the conference (ISSTI V) was devoted to addressing a number of issues in this field and included a presentation by Prof. Roshdi Rashed entitled 'Muslim Contribution and the Turning Points in the History of Classical Mathematics;' a presentation entitled 'Discoveries in the Islamic World' by Prof. Ahmed Djebbar, Professor Emeritus, University of Science and Technology, Lille, France; a presentation by Prof. George Saliba of Columbia University in the US entitled 'Unraveling the Mystery of the Decline of Islamic Science: Key Projections on Today's World,' and a fourth presentation by Prof. Charles Falco



about the remarkable achievements of Ibn Al-Haytham which was entitled 'Ibn al-Haytham's Contributions to European Civilization.'

Prof. Djebbar demonstrated how the history of Islamic science could be turned into a pedagogical tool, referring in the process to France where a science-education program entitled 'La main à la pâte' was introduced and championed by the French Physics Nobel Laureate Georges Charpak.



In his presentation, Prof. George Saliba presented his 'theory' for the decline of Islamic science. He conceded that a decline took place however he proposed an alternative date for its start namely around the 16th century. He dismissed 'internal' factors, such as the orthodoxy that prevailed after Ghazzali or the fallout from the Mongol invasion as major factors contributing to this decline and concluded that the question should not be 'what went wrong' in the Islamic civilization but rather 'what went right' in the West!

In his presentation, Prof. Charles Falco, talked about Ibn al-Haytham and the importance of his ideas (scientific, artistic, and even theological) in medieval Europe, and how they have permeated thereto (see profile of Ibn Al-Haitham on page 16).

The first session on the second day included a presentation by Prof. Adnan Badran FIAS, the former Prime Minister of Jordan, entitled 'The Science and Technology and Human Rights Nexus in the Arab/Islamic World,' in which he claimed that countries that violate human rights tend to fall behind in science and technology and become stricken with instability, unemployment and poverty. Prof. Abdallah Schleifer, Professor Emeritus, at the AUC in Cairo, presented a paper entitled 'Revisiting the Issue of Media and Religion in the Arab/Islamic World.' He talked about the rapid spread of Internet in the Arab world, hailed as 'citizen journalism,' and the rise of Salafi Arab satellite television that has frequently encouraged intolerance not only against other religions but also against the Sufi dimension of traditional mainstream Islam.

On the other hand, the former president of the Republic of Kyrgyzstan Prof. Askar Akaev FIAS presented an exciting talk entitled the 'Prediction of the Second Wave of the Global Crisis that has Turned out to be True,' in which he talked about a series of science-based predictions he had made about the world's economic crises. He cited a list of possible sources for the respective risks that governments need to be aware of including

the economic crisis in the US and Europe, adding that the rise in world prices of food commodities, energy resources and other raw materials may lead to further sociopolitical tensions and the slowing down of economic growth at the world level.

The following session included one keynote which was entitled 'Discovery of Nitric Oxide and Cyclic GMP in Cell Signaling and Their Role in Drug Development,' by the Nobel Laureate Prof. Ferid Murad Hon. FIAS, 1998 Nobel Prize Laureate (Medicine), who has recently joined the Department of Biochemistry and Molecular Biology, George Washington University, USA.

That was followed by a session on 'Science and Health,' which included the first Ibrahim Memorial Lecture entitled 'Wartime Surgical Judgment,' presented by the 2009 Awardee: Dr Faris Gavrankapetanovic, General Manager, Clinical Center, University of Sarajevo, Bosnia and Herzegovina; and the second Ibrahim Memorial Lecture entitled 'Molecular and Genetic Basis of Human Deafness in Pakistani Population,' presented by the 2011 Awardee: Dr Saima Riazuddin, Adjunct Associate Professor, National Centre of Excellence in Molecular Biology (CEMB), Lahore, Pakistan. Prof. Abdel Latif Ibrahim FIAS, Director, Institute Bio-IT Selangor, Malaysia, and Co-ordinator of IAS activities in Malaysia, presented the third talk in the session on 'Bridging the Gap between Islamic Countries and the West in Research and Development through Partnership and Networking.'

The session on 'Nuclear Energy' included a circulated presentation by Prof. Abdul Qadeer Khan FIAS, Fellow of Pakistan Academy of Sciences, Pakistan, entitled 'Nuclear Energy for World Peace,' and a presentation entitled 'Energy Security in the Islamic World: Is Nuclear Power the Answer?' by Prof. Mehmet Ergin FIAS, Vice – President, IAS, and Prof. Reşat Uzmen, Turkey. The third presentation entitled 'Nanosciences-Nanotechnology: An Ultimate STI Platform for the Developing World,' was given by Prof. Malik Maaza FIAS, iThemba LABS-National Research Foundation of South Africa, while the fourth was entitled 'Energy Education and Research, a Forum for Cooperation between Lebanon and European Institutions,' and presented by Prof. Nesreen Ghaddar FIAS, Professor of Mechanical Engineering, American University of Beirut (AUB), Lebanon.

The 'Role and Functions of Academies of Sciences in Bridging International Divides' was the theme chosen by the conference organising committee for an exciting session which was organised in the afternoon of the second day in which the representatives of no less than ten academies of sciences from around the world including the French, American, Malaysian, Albanian and the Russian academies of sciences presented short overviews of their academies and their respective outlooks for the future. The session included a keynote address by Prof. Pieter Drenth, Honorary President, European Federation of National Academies of Sciences and Humanities (ALLEA), The Netherlands, entitled 'Bridging Political, Cultural and Religious Divides: The Role of Academies of Sciences and Humanities.'

The session which was presided over by Prof. A H Zakri FIAS (Malaysia) and Prof. M H A Hassan (TWAS/Sudan) aimed to compare the different models of academies of sciences that exist worldwide; the Soviet style academy of sciences, the



Anglo-Saxon model as well as the international or the global model as classified by the InterAcademy Panel; which includes the Islamic World Academy of Sciences and TWAS and how such entities contribute to bridging political divides between the Islamic World and the West.

Islam's encouragement to seek knowledge has historically led to remarkable results in the fields of Mathematics, Medicine and Optics. A similar effort must be made today, in a context where contemporary science has become a universal heritage around which all cultures can meet and dialogue. This development of science has led to another type of dialogue bringing forward the birth of a discipline called 'Science and Religion' with Chairs in Oxford and Cambridge universities. To shed some light on this issue, the IAS and DICID organized a joint session on the third day of the conference in which five invited scholars spoke: Dr Jean Staune, Secretary General of the Interdisciplinary University of Paris, France, on 'Science and Spirituality;' Prof. Mehdi Golshani FIAS of Sharif University of Technology, Iran, on 'Science and Spirituality;' Prof. Nidhal Guessoum, Professor of Physics and Astronomy, American University of Sharjah, UAE, on 'Islam and Modern Science: Conflicts, Independence or Harmony;' Dr Khalil Chamcham, Institute for Particle Astrophysics and Cosmology, University of Oxford, United Kingdom, on 'Science(s) and Religion(s): Critical Remarks for an Islamic Approach;' and Dr Jonathan Crane, Emory University, Atlanta, USA on 'Creation and Jewish Bioethics.'

At the conclusion of the 18th IAS Conference, which also included a number of side-meetings and site visits, the IAS adopted the IAS 2011 Doha Declaration on 'The Islamic World and the West: Rebuilding Bridges Through Science and Technology.'



The declaration stressed that despite the political upheaval, military conflict, natural disaster as well as economic boom and bust witnessed by many countries in the Islamic world, the same period witnessed renewed interest by some OIC countries in reinvigorating science and technology (S&T) and higher education, with the launch of a number of top-down initiatives to support education and research in countries such as Qatar, the United Arab Emirates, Saudi Arabia and Jordan.

It reiterated that Islam has been and can be the driving force behind an all-encompassing renaissance in STI for a better tomorrow for Muslims and humanity and that the current low level of achievement in the Islamic world is the cumulative

effect of multiple factors and not the result of a single dominant cause. The declaration also highlighted that governance in many OIC countries is in a state of turmoil with politics torn between upholding national security and adopting good governance practices, with 2011 witnessing a tsunami of political events sweeping through the Arab region of the Islamic world.

The declaration emphasized that there were significant obstacles to S&T in OIC countries and that despite political and economic uncertainties, OIC countries have no choice but to stimulate STI, together with the education sector, if only to overcome some lingering problems like food, water and energy insecurity as well as to achieve some level of national self-fulfilment. It urged OIC decision-makers to engender commitment to STI at the highest political level, sizeably increase R&D expenditure and take action to ensure that young scientists cultivate a sense of hope. It also called for more female scientists to be involved in S&T activities at all levels in the OIC.

The declaration also called for an institutional framework to be created –perhaps in the form of an independent merit-based national academy of sciences- to give advice to decision-makers on scientific issues. It highlighted the fact that students –at the university level- must be integrated rather than segregated especially from the science and literary streams so that future political leaders from the various academic backgrounds appreciate the value of science as a means of socioeconomic advancement.

The declaration called for revisiting the narrative for the rise and decline of Islamic science historically and for uncovering the contribution that the Islamic civilization has made to world civilizations in order to learn from the lessons of the past and, in today's tensions ridden world, promote harmony between cultures and peoples by highlighting how historically civilizations have all been interdependent.

The declaration highlighted that –in the Islamic world in particular- a stumbling block/unnecessary divide exists in the public mindset between science and religion and called for deeper forms of reflection on the essentially harmonious relationship between science and religion, through revisiting philosophical traditions, schools of thought prevalent in various traditions, cultures and civilizations.

As part of the follow-up action to the conference, the Academy will circulate the IAS 2011 Doha Declaration to concerned individuals and relevant agencies throughout OIC and developing countries, so that measures are taken to put into action the ideas proposed at the conference.

The IAS will also publish the complete proceedings of the conference in a quality volume that will be distributed internationally.

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.

The above report relied in part on a summary prepared by Prof. Nidhal Guessoum.



Tun Dr Mahathir Bin Mohamad
Hon. Fellow of the Islamic World Academy of Sciences

The Islamic World and the West. Towards a common Understanding through Development.

The relationship between the Islamic World and the West has never been cordial. From the time of the Crusades to the present Palestinian conflict there have been disagreements and even open confrontations between the Islamic world and the West.

But despite all these there is much to be gained from some degree of understanding between the two. There are so many things in the West which can contribute to the development of the Muslim World. On the other hand the Muslims are rich not only in oil and other resources but the true Muslim values and practices can contribute something towards arresting the moral decay in the West.

Historically the West had gained much from studying the sciences and mathematics pioneered by the Muslims who acquired and developed the Greek sciences and philosophy, which the Muslim had assiduously studied and expanded. The Muslim world of the Golden Age of Islamic civilisation contributed much to the European Renaissance.

Unfortunately just as the Europeans were accessing the vast stores of knowledge the Muslims had accumulated, the Muslim themselves decided to reject these allegedly non-religious studies. The result is the retrogression of the Muslim World and the advancement of Western civilisation. The gap widened with the passage of time.

Off and on Muslim intellectuals, realising that the Muslims had fallen back in terms of their worldly progress decided to revive Muslim learning's in these fields. But most of these attempts failed in the face of orthodoxy and the antagonism towards Western materialism.

We are seeing yet again a consciousness among Muslims regarding the causes of their weakness and failures. They now seem to want to regain the pre-eminent position they had in the past in the fields of science, in governance and industrial capacities etc.

It is in the area of knowledge acquisition that Muslims very much need to develop a good relation with the West. Just as before when Muslims were more advanced in knowledge, the West had to seek knowledge from Muslim sources, now the position is reversed and Muslims must seek knowledge from the West.

It is not just a question of sending a few students to study in Western institutions. What is needed is a massive move to acquire the vast stores of knowledge accumulated by the West and

implement some of the Western education systems and methods.

While all Muslims should know their religion well and practice its teachings, but beyond that the students should study the allegedly non-religious subjects, in particular the sciences and mathematics.

When the Europeans found the mastery of scientific and mathematical knowledge was with the Muslims, they studied Arabic so as to facilitate access to these subjects. Now all Muslim students and scholars must have command of at least one European language so as to follow developments in new knowledge particularly of science and mathematics.

Many would say that all these are already being done. Many educated Muslims do speak one other language. But it is in terms of numbers that we are short. What we need is for the great majority of Muslims to be fluent in the mother tongue, and in the language of knowledge.

Obviously to do all these we need the co-operation of the West. There is in the world of today such a thing as intellectual property and IP may be denied to others. But we should not be deterred by failures to access the latest in western knowledge. It is for us to research and develop after we have acquired the essentials

Research and development is now part of the quest for knowledge. We must be aware that countries such as Japan and Korea, having acquired the basic knowledge from the West, have now allocated huge sums of money for research and development. As a result they have been able to discover new knowledge on their own and are able to develop and apply them without any assistance from the West.

There is no Muslim country which can be considered as developed as the great Eastern nations. Yet the Muslims have the same level of intelligence as the people of these countries and the West. For example Ahmad Zuwail, the Nobel Laureate in chemistry, gained his award while doing his studies in the United States. This is because the educational and research facilities in his homeland are not conducive to advance studies. So is the culture of research and the environment unsuitable. Had Zuwail stayed in Egypt and pursued his studies there, it is very unlikely that he would succeed as well as he did in the field he chose. There must be a lot of Ahmad Zuwails in the Muslim world. But without the up-to-date facilities the Muslim world could not have excelled as they should.

I understand that Qatar has embarked on an ambitious program to bring Western institutions to the country. This is the kind of co-operation and understanding with the West that should be emulated by all Muslim countries. If we can afford it we can hire the Western teachers. But more importantly we should maximise the use of the facilities now available in Qatar and other Muslim countries by opening them to all.

In this educational field co-operation and understanding can be developed between the Muslim World and the West. It is important that the general level of education in the Muslim World matches that of the West.

The level of knowledge gained through systematic education is what determines the level of development of a country. The Muslim civilisation of the past was based on the knowledge of the scientists and mathematicians produced by Muslim countries.

For research and development in the field of knowledge and in other fields the need is for support from the Governments. Unfortunately Governments in the Muslim world are seldom supportive of not only research but of national development in general. They are not supportive because of the culture prevalent in the governance of their nations.

We know of the great development in Western countries. We know that they are considered to be developed countries.



We know that they are powerful even though at times they mess up things.

There are many reasons for their being better developed than most countries of the world. And certainly they are more developed than Muslim countries. Even if some Muslim countries are fantastically rich, they are not considered as developed.

Yes there are many reasons for the development of the countries in the West. But the main reason is their skill in governance. They have gone through many systems, from absolute monarchies, to autocracies, to republics and now to democracy. But whatever system they may be practising, their governments have been more successful than others in statecraft, in the skills of administration. They have defined and categorised roles that their governments should play in the management of their countries. They have developed systems and methods to render their Governments effective. Despite the high growth of their populations in the past they have not lost touch with their people and they ensure that the needs of their people are met.

Despite their many failures' the countries of the West have remained far ahead of Muslim countries. They have never been secretive about their systems. In fact they are wont to forcing others to adopt their system. If we wish to develop using their governmental system they would only be too happy to help us.

We need not adopt everything that they do. We can be selective, taking only those compatible with our creed and beliefs. The result can be better relations with them without sacrificing our independence.

Obviously the very fact that we are discussing this subject of bringing about a common understanding between the Muslim and the West is an admission that the relationship with them is in need of change.

We are convinced and concerned. But that is not enough. There must be more people both Muslims and Western people who should feel the same way. We cannot change something that affect such a huge number of people without the idea being understood and supported by as many of them as possible. If we don't then this will be an academic exercise. And that is not going to do any good to anyone.

Assuming that we know what we want, we need to know how we can get others to know and to want it. This is an educational process. It is about changing mindsets of people. We know that the present state of affairs is not doing us much good. We are dissipating our energy and wealth on nothing that is beneficial to us, or the West.

On the other hand if we are to gain acceptance by both, we must have a win-win formula. Maybe in the economic and financial fields, the West may gain something from the Islamic world. In these fields the practices advocated by Islam are justice, equity and fairness.

For the West this advocacy by Islam would be hard to believe. But still it is true.

It takes three Hindu scholars; Sheela Devi D Sundarasan, Lakesh Gupta and Balachanran Shanmugam writing in their book entitled Islamic "Finance: A system that survived the Subprime Crisis," to point this out.

In the chapter on the Philosophy of Islamic Banking, it says "The Islamic bank, in essence an Islamic business, is guided and embraced by Islamic principle of social justice, equity and

fairness. The best known feature of Islamic banking is the prohibition of interest, i.e. riba."

But Muslim economists hold the view that riba is not restricted to usury only but encompasses interest and other fixed returns as well. Islam allows only one kind of loan and that is Qard Al-Hassan (literally good loan) where the lender does not charge interest or additional charge over the money lent.

Islamic law is based on the belief that the provider of capital and the user of capital should equally share the risk of all business ventures.

In the interest based system the pressure is on the borrower: he must pay back his loan, with the agreed interest regardless of the success or failure of his venture.

Making money from money is not acceptable in Islam. Money has no value in itself and therefore should not be allowed to give rise to more money. The human effort, initiative and risk involved in productive ventures are more important than the money used to finance it.

Muslim jurists consider money as potential capital rather than capital. It becomes capital only when it is invested in business. Muslims must use the money to purchase things. Hoarding money is abhorrent to Islam. Money represents purchasing power.

Islam forbids Gharar (Uncertainty, Risk or Speculation). The current Western system is almost entirely based on Gharar, on uncertainty, risk and speculation. The trading in currency, the sub-prime loans, investment by hedge funds, investments in shares for capital appreciation are all speculative.

Clearly the present financial crisis is due to uncertainties and taking high risks for high returns. A lot of investors made a lot of money. But when the bubble bursts the effect on society, as a whole is horrendous. Whole countries collapse bringing misery to millions of people. There is no fairness, equity or justice as the sufferers are not responsible for the catastrophes.

Till today there has been no solution to the catastrophic financial crisis. And there will be no solution for all the solutions are based on the same money makes money creed.

During the Asian financial crisis, brought about by the currency traders' activity of making money from virtual money, the solution offered by the IMF and World Bank was to lend money to pay off debts. The only real result was to make the borrower indebted to the World Bank and the IMF. For years countries would remain debt slaves.

We see the same thing happening during the present crisis. The only difference is that the amounts are in billions and trillions. The solution is based on money making money. There is a state of denial prevailing. There is no willingness to admit that the system has collapsed.

But the Islamic world with its huge monetary wealth and its natural resources can perhaps contribute towards the resolution of the crisis by getting the West to understand some Islamic business principles.

Malays are not the wisest people in the world but they have a good saying that can help mitigate the causes at least. They say; "When you lose your way, go back to the beginning." The West needs to go back to the beginning and to give up if not the whole of their "money make money" creed but at least some of it. Then and then only will they bring to an end the crisis and prevent it from periodically recurring.

What applies to Western finance also applies to business and trading. When we talk about good business it should not be good for owners of the business only but good for the customers and purchasers and the society as a whole.

Present day business is not concerned with the miseries caused by business activities, especially financial business. Thus currency trading which is said to be worth 4 trillion dollars a day, equals to the total output of Germany in a year, benefits only the currency traders. There are no spin-offs or even trickledown effect. No jobs are created, no new businesses, no increase in domestic or international trade, nothing to show that such huge transactions have been carried out. Currency trading is not even about money making money. It is about virtual money making virtual money. Yet the misery it caused to countries and the millions of their population is real and universal.

Yet, despite the injustice, absence of equity and fairness the West is not prepared to put an end to their trade.

Perhaps the West will find it difficult to believe that the Muslim world advocates social justice, equity and fairness. They can point out to the lack of such values in Muslim countries, among Muslims. But these are aberrations and aberrations are found in every religion or ideology.

The problem between the Muslim World and the West is due to both taking the aberrations in their practices as the true creed. If there is to be understanding between the Muslim World and the West the first steps must be for each to take a hard look at its own practices and to correct them and in so doing project a true picture of their different creeds and then to educate each other about them.

When they do this not only will they materially develop but there will be real understanding between them.



Prof. Abdel Salam Majali FIAS
President of the Islamic World Academy of Sciences

The title of today's conference clearly states our goal: to explore ways and means of rebuilding bridges between the East and West using the tools of science. We do this against a backdrop of global political and economic turmoil. This conference is an attempt by the IAS to address relations between the Islamic World and the West. These are constantly being put to the test as problems facing OIC countries often have an international component.

The objectives of the conference are:

- (1) To air the views of scientists and academicians from the East and the West on ways to bridge the divide between the Islamic World and West, particularly through scientific and technological collaboration;
- (2) To address a number of recurring questions on the History of Islamic Science, as well as Science and Spirituality to rediscover how much we all have in common;

Although this conference will address the three independent yet interconnected aspects mentioned above, it aims to do so by identifying the strata at which we should be engaged to re-network our world again. Here, let me borrow an expression coined by our Founding Patron Prince El-Hassan and say that we must divorce the failure of 'Politics' from 'Policies,' in the way we look at our current state of affairs. This is vital if we are to make a difference. For the moment however, I hope to add some pointers in the interdisciplinary fashion for which the IAS has become famous.

For the last eleven months, this part of the Islamic world –the Arab world- has been witnessing a tsunami of mass protests. Optimists call it the Arab Spring. It started on 17 December 2010 in Tunisia following an incident in the town of Sidi Bouzid in Tunisia between a street vendor and a policewoman!

Protests *en masse* are not new in this region. However, what are the imbedded reasons for this surge in rebelliousness.

During the days of the First World War, this region (which lies at the centre of the Islamic world) witnessed revolutions in Arabia led by the Hashemites against the Ottomans. The subsequent failure of the British and the French to keep their promises and grant Arabs their state were behind the revolutions that erupted then and in 1920s 1930s in many parts of this region.

After Israel was founded in 1948, Arabs took to the streets *en masse* again to express their outrage at the injustice that had afflicted the Palestinians and the failures of some of their leaders to retain the Arab Islamic identity of the Holy Land. A political earthquake shook the region in the 1950s which caused changes in the majority of the regimes. New regimes came into power, many of which were gradually 'contained' by the West and grew distant from their peoples. In the 1950s and 1960s, the people of the region were expressing their anger, anger that eventually translated itself into extreme political views from the very far right to the very far left. Indeed, the bitterness that had developed between Israel and the Arab countries culminated in a number of subsequent wars.

The 1991 Gulf War, which resulted in tremendous frustration among Arabs and Muslims, provided a new impetus for stakeholders to contemplate entering into negotiations aimed at resolving the Middle East conflict. The 1991 Madrid peace conference marked the start of the intricate quest for peace. However, 20 years after Madrid, we only have a small piece of 'peace,' and even more frustration among the masses.

The failure to achieve peace in the Middle East and to resolve the Palestinian issue is unequivocally *the* major reason for Arab and Islamic frustration today.

A failure of *Politics* par excellence, the Palestine question has paralysed the mindset of many Arabs and Muslims including political leaders. The complex politics of the region is a factor in turning many OIC countries into the biggest spenders on weapons in the world—at the expense of money earmarked for development—

and has turned them into autocratic rather democratic societies that followed the motto ... continuity (of government) rather ingenuity (in government). Hard security was and is the key concern of many regimes.

Let me quote from the 2010 UNESCO Science Report, authored by Adnan Badran and Moneef Zou'bi, in one of its descriptive paragraphs:

Governance in the majority of Arab countries is in a state of turmoil. Arab regimes are torn between upholding national security – as they perceive it – and maintaining social order on the one hand, and generally adopting good governance practices on the other; these practices include promoting democracy and the 'rule of law', promulgating accountability and combating corruption.

Ladies and Gentlemen

Let me sum the 'Policies' failure in terms of a number of time bombs that have been on the radar for at least a decade. The first manifests itself in the centralization of power in many OIC countries that led to rural areas losing their ability to manage their own affairs. This is failure in the local government policy.

The second time bomb is the increase in population which is resulting in unemployment and over-stretching the services sectors. Muslim are young with at least 25% of the population of OIC countries below 15 years of age. This is a double-edged sword for decision-makers. Young populations can stimulate growth and create dynamic societies, particularly if they are well-trained and well-educated. Here, we are talking about education and innovation!

The third time bomb manifested itself in the inability of economies to achieve sustainable economic growth, particularly if we take the region's huge expenditure on weapons into account.

These, together with the lack of freedoms and disrespect for human rights, have been the failure of *Policies*.

But where and how does science come into play?

Let me refer the UNESCO Science Report again, where we find that the picture is not rosy at all. The majority of OIC countries spend less than one-half of one percent on research and development. The numbers for human resources active in science are low, and apart from Egypt, Turkey and Iran, the critical mass of researchers is not there in many countries. Moreover, apart from Malaysia, most OIC countries hardly export any high technology products.

The Report shows that less than 25 OIC countries have a national academy of sciences or play host to a supranational academy. This is an astounding fact, as academies of sciences, as strong advocates of science and impartial advisory bodies, have been at the vanguard of the scientific endeavour in countries such as the USA, Russia, the United Kingdom and France. They are also part of the landscape in economically emerging economies such as Brazil, China, India, Malaysia and Mexico.

We also face an uphill challenge in adopting science-based development policies to raise the socioeconomic level of our

countries. At the same time, our S&T community is not making waves in the global knowledge pool notwithstanding Turkey. More importantly perhaps, we are not using science to combat our immediate health, water and energy problems.

Clearly, the failure of science-based development has aggravated societal tensions. For over three decades, we have known what to do but somehow did not get around to doing it. Clearly, we have to have a change of mindset. We have to again believe in our will to change for the better in all domains.

Let me call this a failure of 'policies.'

Fellow Scientists

Dear Friends

Academies of sciences realize that they have a serious role to play in raising the awareness of the decision-maker and the public, and in helping people understand the importance of development and scientific advancement in achieving socio-economic progress. Let me acknowledge here the array of representatives of academies of sciences who are with us today from all corners of the world.

The IAS is celebrating its 25th Anniversary this year. An achievement worthy of note. Slowly but surely we are trying to renew the *Ummah's* confidence. We are telling our political leaders that security is a multifaceted goal that encompasses water, energy, food and health securities and not merely military security. The IAS does this on a shoe-string budget yet with dedication, determination and confidence. We realize that we have long to go. We also realize that the activities of academies of sciences are often appreciated long after they are implemented. Only last year did we realize this with the Royal Society of London, which celebrated its 350th Anniversary in 2010, and only recently have we begun to realize what the Academy of *Bait ul-Hikma* of Baghdad had achieved 1200 years ago.

My late friend Abdus Salam, my Pakistani name-sake, Nobel laureate of 1979, used to insist that *Bait ul-Hikma* was the 'Institute of Advanced Study' of its day championing the cause of science in the court of *Al-Mamun*. As the academy of sciences of the OIC, it is the intention of the IAS to be a champion for stimulating science for development, especially through capacity-building, knowledge-sharing and promotion of international and regional cooperation.

I am confident that our meeting here will give our efforts a considerable boost. I am confident that each of us, in his/her way, can help in promoting understanding and tolerance.

Let me conclude by again thanking you all, by thanking the His Highness the Emir and the Prime Minister of the State of Qatar, our eminent guests, our colleagues at the Doha International Centre for Interfaith Dialogue, our co-organizers at the Ministry of Foreign Affairs of Qatar, IAS Fellows and my colleagues from the IAS for making this event a reality.

Thank you for joining the IAS in its efforts in a spirit of open-mindedness

Look to the West for knowledge*

Islamic nations should go all out to create conditions that foster academic pursuit in science and technology.

There was a time when budding Western scholars travelled long distances to the then epicentre of science and technology — the Islamic world that spanned from southern Spain to China, from the 7th to the 17th century — to seek and learn new knowledge from the masters of that 1,000-year era.

But that was long ago. The countries that constitute the Organisation of Islamic Cooperation (OIC) today lag behind in the scientific world. As innovators, none of them can be considered in the league of developed nations, despite the financial wealth many of them have acquired.

Part of the problem is a lack of mastery of modern knowledge, in particular science and technology.

The knowledge deficit and what to do about it was the subject of a recent conference in Doha, Qatar, convened by the Islamic World Academy of Sciences (IAS) on its 25th anniversary.

The meeting was aptly themed, “The Islamic world and the West: Rebuilding bridges through science and technology.”

The IAS president, former Jordanian Prime Minister Abdel Salam Majali, lamented that the majority of OIC countries spent less than 0.5 per cent of their gross domestic product on research and development (R&D). Support for human resources in science is low and apart from Egypt, Turkey and Iran, a critical mass of researchers is absent in many countries.

Moreover, apart from Malaysia, most OIC countries hardly export any high technology products.

Majali quoted the 2010 United Nations Educational, Scientific and Cultural Organisation (UNESCO) Science Report showing that less than half of the OIC's 57 countries have a national academy of sciences or play host to a supranational academy.

This is astounding, as academies of sciences, as strong advocates of science and impartial advisory bodies, have been at the vanguard of scientific endeavour in countries such as the United States, Russia, the United Kingdom and France. They are also part of the landscape in emerging economies such as Brazil, China, India, Malaysia and Mexico.

He also pointed out the uphill challenge of many OIC countries in adopting science-based development policies to raise the socio-economic level of their people. For instance, we are not using science to combat our immediate health, water and energy problems.

The conference keynote speaker, Honorary IAS Fellow and former Prime Minister Tun Dr Mahathir Mohamad, set the tone of the meeting when he reminded delegates that, “the relationship between the Islamic world and the West has never been cordial. From the time of the Crusades to the present Palestinian conflict there have been disagreements and even open confrontations between the Islamic world and the West.”

“But despite all these, there is much to be gained from some



Zakri Abdul Hamid

degree of understanding between the two. There are so many things in the West which can contribute to the development of the Muslim world.

“On the other hand, the Muslims are rich not only in oil and other resources but the true Muslim values and practices can contribute something towards arresting the moral decay in the West.”

According to Dr Mahathir, the acquisition of knowledge currently residing in the West should be an all-out effort. It is not enough just sending students to study in Western universities: we must also adopt best practices in Western education systems and methods. Islamic countries must also devote more resources to R&D, an essential feature of knowledge creation and innovation.

To excel in R&D we may have to acquire sophisticated skills from the West but, once mastered, we could embark on our own. Dr Mahathir cited the case of South Korea and Japan, both of which acquired the basic knowledge from the West, allocated huge sums of money for their own R&D, and were eventually able to develop new knowledge on their own and apply it without further Western assistance.

The ideal situation for Islamic countries is to create conditions that foster academic pursuit: the kind of environment that existed in the West that turned Muslim scientists like Abdus Salam of Pakistan and Ahmed Zewail of Egypt into Nobel Prize winners in science in 1979 and 1999 respectively.

Major limiting factors today in many countries include financial constraints; lack of solid grounding in science and mathematics; inadequate governance structure for science, technology and innovation; and the lack of a critical mass of researchers, scientists and engineers.

However, some Islamic countries, particularly the wealthy “oil” states, have made a start. As described by Ellis Rubinstein, president of the New York Academy of Sciences (NYAS) at the IAS conference, one strategy being employed in the Gulf states and in some non-Gulf Islamic nations is “twinning” to import capacity-developing assistance. Such endeavours involve sums of money beyond the reach of many Islamic countries. More modest modalities have to make do for the time being.

Rubinstein proposed the establishment of a pan-Islamic alliance of complementary institutions that would use all the tools of physical (face-to-face) and virtual (online) social networking to achieve synergies across the Islamic world.

Rubinstein believes that, properly funded (with about US\$10 million [RM31.6 million]), such an alliance of neutral institutions could “run under the radar” of national jealousies and create an “Islamic science, technology, and innovation ecology” where the whole would be far greater than the sum of its parts.

This compelling idea deserves the consideration of the IAS, the Academy of Sciences of the Developing World (TWAS) and the respective national academies of sciences in Islamic countries.

Institutional partners within the Islamic world such as the OIC and the Islamic Scientific, Educational and Cultural Organisation (ISESCO) have indicated interest, and international partners, such as the NYAS, with the backing of UNESCO, are ready and willing to operationalise the concept.

The US\$10 million question remains whether we have the political wherewithal to take the next critical step to realise this wonderful dream.

* Prof. Zakri Abdul Hamid is Science Advisor to the Prime Minister of Malaysia.

IAS General Assembly convenes at Doha, Qatar

Alongside the 18th IAS Science Conference, and under the chairmanship of Prof. Abdel Salam Majali FIAS, IAS President, the General Assembly of the Islamic World Academy of Sciences held its 19th regular meeting at the Sheraton Hotel, Doha, Qatar, on 21 October 2011. The meeting was attended by a number of IAS Fellows as well as the Director General, IAS.



The General Assembly after approving the minutes of the previous meeting took note of the very detailed report presented by the IAS Director General of the various activities implemented by the IAS Headquarters in Amman.

It went on to discuss an extensive agenda that included a review of financial statements, the status of the Medical Journal of the Academy, IAS programme, as well as a number of organizational matters related to the IAS.

The DG talked in brief about the finances of the IAS in 2011. This was followed by a detailed presentation by Prof. Adnan Badran, IAS Treasurer, that included a detailed review of the Statement of Accounts of 2009 and 2010 and a detailed run-down of the financial statements of the IAS as they stood at 31 August 2011.

The General Assembly of the IAS concluded by ratifying the results of the 2010/2011 Fellowship Elections as presented by the IAS Council.

IAS Council holds 37th Meeting

The 37th Meeting of the IAS Council was held in Doha (Qatar) on 21 October 2011 with the participation of IAS Council Members including IAS-DG who - during the meeting - outlined the activities undertaken by the Secretariat during 2011.

In his report to the Council, the DG talked about the various activities that the IAS has been involved in including organising the 18th Conference and maintaining the IAS's Medical Journal.

The IAS Council undertook a thorough review of the activities of the IAS during 2011 and discussed a number of possible activities that could be implemented.

It acknowledged the excellent work done by Prof. Mehmet Ergin and Prof. Ugur Dilmen, the Chief Editor of the IAS Medical Journal, and expressed its hope that Prof. Bor would enjoy a speedy recovery.

The IAS Council instructed the Director General to establish contacts with a number of countries to secure an invitation for the IAS to convene its 2013 IAS Conference.



Malaysian King confers honorary degree on Atta-ur-Rahman FIAS

ISLAMABAD, Oct 20 (APP): The King of Malaysia Sultan Mizan Zainal Abidin conferred an honorary doctorate degree on Professor Atta-ur-Rahman FIAS, Co-ordinator General, COMSTECH, during convocation ceremony held at the University of Technology Malaysia in October 2011. The King praised Pakistan's famous scientist Professor Atta-ur-Rahman for his remarkable services in science and higher education. Addressing the ceremony, he said, "Atta's services for uplift of science and higher education in Pakistan and in the Islamic world are praiseworthy and developing nations should learn from the experience Pakistan has made in these sectors with his vision and leadership."

Honorary science doctorate degree was awarded to Prof Atta in appreciation of his extraordinary and outstanding scientific achievements in the field of organic chemistry and natural products chemistry and for his immense contribution to the development of science and technology education in Pakistan and the Muslim world. During the occasion, Prof. Atta-ur-Rahman also addressed the Malaysian higher education leaders and explained how Pakistan made rapid progress in the fields of science and higher education from the year 2000 to 2008, when Atta was science minister and then head of the higher education commission.

Vice-Chancellor of the University of Technology Mara, Professor Dr. Sahol Hamid Abu Bakar announced the establishment of a large research centre in the field of Natural Product Chemistry named after Professor Atta-ur-Rahman. Vice-Chancellor Datuk Sahol Hamid said with the expertise possessed by Dr Atta-ur-Rahman and with his guidance, the university would be able to achieve the highest targets through improving scientific research and development.

The University of Technology Mara is the largest and best funded university in Malaysia with 200,000 students with an annual budget of over 1 billion US dollars. It is also one of the largest universities in the Islamic world.

Prof. Atta-ur-Rahman has been conferred honorary doctorate degrees by many universities including Cambridge University in 1987, Coventry University in 2007, Bradford University in 2010 and Asian Institute of Technology the same year. He has, on his credit, 843 publications in organic chemistry including 663 research publications, 18 patents, 103 books and 59 chapters in books.

He is the first scientist from the Muslim world to have won the prestigious UNESCO Science Prize in 1999 in the 35 year old history of the prize.

He was elected as Fellow of Royal Society (London) in July 2006 thereby becoming the one of the four scientists from the Muslim world to have ever won this honour conferred by the prestigious 350 year old scientific academy.

**THE ISLAMIC WORLD AND THE WEST:
REBUILDING BRIDGES
THROUGH SCIENCE & TECHNOLOGY**

Adopted at Doha, Qatar
on
25 Dhul- Al-Qe'da 1432
23 October 2011

PREAMBLE

1. The Islamic world extends from Indonesia in the East to the Atlantic Ocean in the West, and from Kazan/Tatarstan in Russia in the North to the source of the Nile in Uganda in the South. It is an area of historical importance, as it is the birthplace of the world's three Abrahamic religions. For centuries, the region was a hub of groundbreaking science. Today, it is of contemporary strategic importance owing to its location and wealth of natural resources;
2. Over the last decade, the region has witnessed political upheaval, military conflict, natural disaster as well as an economic boom and bust. Notwithstanding these difficulties, the same period also witnessed renewed interest by some OIC countries in reinvigorating science and technology (S&T) and higher education, with the launch of a number of top-down initiatives to support education and research in countries such as Qatar, the United Arab Emirates, Saudi Arabia and Jordan. Other countries have also approved plans to allocate more resources to research and development (R&D), among them Egypt, Tunisia, Turkey, Iran and Pakistan;
3. Islam has been and can be the driving force behind an all-encompassing renaissance in STI for a better tomorrow for Muslims and humanity. The current low level of achievement in the Islamic world is the cumulative effect of multiple factors and not from a single dominant cause. Governance in many OIC countries is in a state of turmoil with polities torn between upholding national security – as they perceive it – and maintaining social order on the one hand, and generally adopting good governance practices on the other. These practices include promoting democracy and the 'rule of law', promulgating accountability and combating corruption;
4. During 2011, a tsunami of political events swept through the Arab region of the Islamic world with aftershocks being felt all over the world. People no longer tolerate the inability of regimes to deliver at the 'political' level and at the 'policies' level;
5. Institutions, gender imbalance in S&T, shortage of trained personnel are also obstacles of significant impact;
6. Despite political and economic uncertainties, OIC countries have no choice but to continue to stimulate STI, together with the education sector, if only to overcome some lingering problems like food, water and energy insecurity and to realize some level of national prosperity and national self-fulfilment. OIC countries can learn from the remarkable socioeconomic progress of countries such as Brazil, China, India, Malaysia and Mexico, due in part to the utilization of S&T,

ON THE QUESTION OF SCIENCE AND TECHNOLOGY (S&T) FOR DEVELOPMENT, THE ISLAMIC WORLD ACADEMY OF SCIENCES (IAS) RE-ITERATES THAT:

MOREOVER, THE PARTICIPANTS IN THE 18TH IAS CONFERENCE NOTE WITH CONCERN THAT:

1. The quest for knowledge is a pillar of the Islamic Code of Belief and the pursuit of knowledge has assumed augmented importance in an increasingly knowledge driven world economy. OIC countries therefore must commit themselves to becoming a community that values knowledge, competent in utilizing Science, Technology and Innovation (STI) to enhance their socioeconomic well-being;
2. There exist significant obstacles to S&T in OIC countries, including, *inter alia*, lack of comprehensive STI policies, and strategies emanating therefrom. The dearth or inadequacy of resources, infrastructure and

- (a) There are persisting political problems that exist in the Islamic world today. Problems that hinder socioeconomic advancement and cripple humanity's quest to try to attain a better *common future*. Further, and despite a mushrooming in information and media channels, a wide information divide still exists between the Islamic world and the West that hinders co-operation at the political level and the more down-to-earth 'policies' level including the domains of S&T and higher education; and
- (b) Inter-OIC as well as North-South collaboration in S&T over the last three decades has at best been a modest success. Decision-makers have to come up with more



innovative ways to make co-operation less bureaucratic and more effective. This is particularly true in problems that are transboundary in nature such as Water, Energy, Health, Food Security and Climate Change,

THE ISLAMIC WORLD ACADEMY OF SCIENCES FURTHER APPEALS TO OIC DECISION-MAKERS TO:

1. Implement specific actions at the national and international levels including *inter alia*, engender commitment to STI at the highest political level; sizeably increase R&D expenditure and promote the central role of the university as the originator of scientific output;
2. Recognize that prompt action is required to ensure that young scientists cultivate a sense of hope and purpose so that they may contribute to shaping a sustainable future. Future generations in OIC countries must be educated and not indoctrinated, they must learn – and not be taught – to work hard, to identify role models in science and life that they can emulate, and learn to work together as teams rather than as individuals. A thorough review of the higher education system in the OIC is required to ensure that the generations of tomorrow are equipped with the tools that enable them to face the challenges of tomorrow. Moreover, our science community leaders are invited to support and mentor the youth and early career scientists;
3. Engage more female scientists in raising the right questions and searching for sound answers if the sizeable women science community of the OIC is to contribute to the development of the *Ummah*. Because women are under-represented in the upper levels of the occupational ladder in S&T, an integrated remedial approach is required that includes mentoring, recognition and the promulgation of best practices;
4. Promote and enhance scientific and

technological cooperation among developing and OIC countries, especially involving countries that have developed significant expertise in S&T policy development, S&T infrastructure, biotechnology, nanotechnology, innovative nuclear technology and information technology;

5. Appreciate that advice on science, technology, and innovation needs to reach policymakers. For this to happen, an institutional framework needs to be created and commitment needs to be garnered to support it. At the university level, students must be integrated rather than segregated especially from the science and literary streams so that future political leaders from the various academic backgrounds appreciate the value of science as a means of socioeconomic advancement;
6. As historians of science have propagated a number of theories related to the rise and decline of Islamic science, a need to revisit this issue has ascended not only to highlight the contribution that the Islamic civilization has made to world civilization, but also to learn about the deep-rooted underlying reasons for this decline in order to learn from the lessons of the past and, in today's tensions ridden world, promote harmony between cultures and peoples by highlighting how historically civilisations have all been interdependent. It is imperative that interest of the OIC science community, and ultimately the public, is rejuvenated in what has become known as the alternative narrative of the 'Rise and Decline of Islamic Science,' and why has the ascent of science led to industrialisation in the West and not so in the Islamic civilisation;
7. Acknowledge that Academies of Sciences' roles are multifaceted and multilayered; at the heart of which are

the promotion of S&T and the application thereof to increase knowledge, improve socioeconomic conditions in society. Academies of sciences ought to be further involved in promoting science and the scientific endeavour, especially science education, and act as active advocates of science and technology as a means to overcome the array of problems that humanity faces. They must act as 'sovereigns' of science in their catchment area, unequivocally taking the moral high ground on all issues that face humanity. It is imperative that OIC countries establish national academies of sciences, or where such entities exist strengthen them;

8. Acknowledge that –in the Islamic world in particular- a stumbling block/unnecessary divide exists in the public mindset between science and religion and to embark on deeper forms of reflection on the essentially harmonious relationship between science and religion, through revisiting philosophical traditions, schools of thought prevalent in various traditions, cultures and civilisations,

FURTHERMORE, THE ISLAMIC WORLD ACADEMY OF SCIENCES (IAS), WHICH CELEBRATED ITS 25TH ANNIVERSARY IN OCTOBER 2011:

Extends its appreciation to His Highness the Emir of the State of Qatar and His Excellency the Prime Minister for hosting the conference; to the Permanent Committee for Organising Conferences of the Qatari Ministry of Foreign Affairs and the Doha International Centre on Interfaith Dialogue (DICID), the Islamic Development Bank; COMSTECH; OPEC Fund for International Development (OFID); Perdana Leadership Foundation and the Jordan Phosphate Mines Company for generously sponsoring this international scientific congregation. Appreciation is also extended to the Academies of Sciences that have participated in the conference.



**Prof. Aini Ideris
(Malaysia)**

Prof. Aini Ideris graduated with a Doctor of Veterinary Medicine (DVM) degree in 1979 from Universiti Pertanian Malaysia - UPM (currently, Universiti Putra Malaysia). She pursued her postgraduate study, at the University of Liverpool, England, receiving a Masters degree in Veterinary Science (MVSc) in Avian Medicine, in 1981, and a PhD degree in Avian Medicine, in 1989 from UPM. She continued with her postdoctoral training at the University of California, Davis, USA (1990-1992), and at Cornell University, USA, in 1993, where she was involved in molecular pathogenesis research.

Her research interest is in avian respiratory and immunosuppressive diseases. She has been actively involved in research related to the control of poultry diseases and development of poultry vaccines. Her research has led to the commercialization of Newcastle disease and fowl pox vaccines, in 1995 and 1996 respectively. In 2005, her research team successfully commercialised another important poultry vaccine, i.e. infectious bursal disease vaccine. They also developed rapid diagnostic methods for avian influenza (bird flu), which is a zoonotic disease, Newcastle disease and Mycoplasmosis. Currently her team also looks into the development of halal vaccines, utilizing several different carriers, in the bioreactor.

Prof. Aini was appointed as Fellow Academy of Sciences of Malaysia. She is also a Founding Fellow of Malaysian College of Veterinary Specialists (FMCVS) and Fellow of Malaysian Scientific Association (FMSA). In October 2011, she was elected as Fellow of the Islamic World Academy of Sciences (IAS). She is actively involved as Council Member of Malaysian College of Veterinary Specialists (MCVS), Board Member of Malaysian Cancer Research Institute (MCRI), and Executive Member of National Cancer Council (MAKNA).

Prof. Aini was awarded the prestigious National Academia Award (AAN) 2010, under the category Award for Innovation and Commercialisation, for her successful innovation and commercialisation of Newcastle disease vaccine (NDV4-UPM). AAN is the highest achievement award conferred to Malaysian academics.

She was Chair of the Veterinary Teaching Hospital from 1992 to 1998, Deputy Dean of Faculty of Veterinary Medicine 1992 to 2001, Dean, School of Graduate Studies (May 2001 to November 2008), and Chair of the Malaysian Postgraduate Deans Council from 2005 to 2008. Since December 2011, she is the Deputy Vice Chancellor (Academic and International) Universiti Putra Malaysia.



**Prof. M. Ajmal Khan
(Pakistan)**

Professor Muhammad Ajmal Khan, Professor & Director, Institute of Sustainable Halophyte Utilization, University of Karachi, has spent over 30 years in teaching and research. He was awarded the degree of MSc (1974) by the University of Karachi, PhD (1985) by Ohio University, USA; and DSc (2010) by the University of Karachi. He is the recipient of Ohio University Teaching Assistantship (1980-1984); National Science Foundation, USA, postdoctoral fellowship at Brigham Young University, USA (1984-1985); Fulbright visiting scholar, Ohio University, USA (1995-1996) and Adjunct Professorship at Brigham Young University, USA (1996-1997).

During 2000, Dr Khan was awarded Pakistan Academy of Sciences and INFAQ Foundation joint gold medal (1999) in the field of Botany. The President of Pakistan has awarded Dr Khan with the "Pride of Performance" on 14th August 2001 and Sitara-i-Imtiaz in 2007 in recognition of his scientific contribution. He was elected a Fellow of the Pakistan Academy of Sciences in 2001 and TWAS in 2004.

In 2004, he was ranked as the best biologist and second in 2005 and 2007 and 13th among the scientists of all disciplines. The Higher Education Commission of Pakistan awarded him the title of "Distinguished National Professor" during 2005, and the Pakistan Academy of Sciences awarded him the title of "Distinguished Professor of the year 2008."

Professor Khan joined the University of Karachi as a Lecturer in 1977. He was appointed as Assistant Professor of Botany in 1985, Associate Professor of Botany in 1989, Professor of Botany in 1996 and Director, Institute of Sustainable Halophyte Utilization, in 2007.

Prof. Khan has published more than 180 research papers in well-known international journals, edited 8 books, arranged numerous symposia, participated in scientific moots and delivered invited lectures in several institutions of China, Hong Kong, Egypt, India, Bahrain, U.A.E., Morocco, Tunisia, Nepal, Turkey, Germany, and the USA.

Dr. Khan's research primarily focuses on the utilization of areas destroyed by water logging and salinity by using non-conventional agricultural crops. During the last twelve years he has been working with scientists from France, Germany, Italy, Portugal, Morocco, Mauritania, Egypt, Saudi Arabia, UAE, USA and Pakistan to develop new technologies to grow nonconventional agricultural crops using seawater irrigation. He has also collaborated with a group of Chinese scientists under Pakistan-China collaboration protocol to further develop saline agriculture. He has demonstrated the feasibility of using a diet for cattle composed entirely of halophytes besides finding a number of halophyte seeds with high quality edible oil.

What is the IAS?

The IAS is an independent, non-political, non-government and non-profit making learned society of distinguished scientists and technologists dedicated to the promotion of all aspects of science and technology in the Islamic world.

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

The government of Jordan hosts the IAS at Amman, from where the IAS Headquarters started functioning in 1987.

The IAS General Assembly decided to rename the IAS as the "Islamic World Academy of Sciences" in March 2005.

The main objectives of the IAS are:

- To serve as a consultative organisation for the Ummah and for institutions in the field of science and technology;
- To initiate science and technology programmes of benefit to the development of Islamic countries;
- 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 achievement to centres of excellence in all science and technology disciplines.

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The IAS welcomes the submission of short articles for publication in the Newsletter (publication however is at the IAS' discretion).

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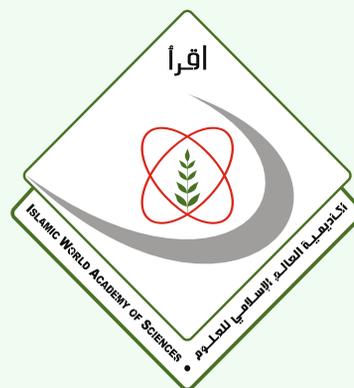
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IAS Ibrahim Memorial Award 2012/ 2013

Call for Nominations

The Islamic World Academy of Sciences (IAS), 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 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 Co-operation (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 has been exceptionally extended to 1 September 2012. Nominations received after this date will be considered in the subsequent round.

IAS Ibrahim Memorial Award 2012/2013

The Awardee would be invited to the subsequent 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 IAS.

A token honorarium would be presented to the Awardee.

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New issue of IAS Journal in print and on the web

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

The journal, which is edited and published by Prof. Naci Bor, Prof. Sinasi Ozsoyulu and Prof. Ugur Dilmen - IAS Fellows 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.

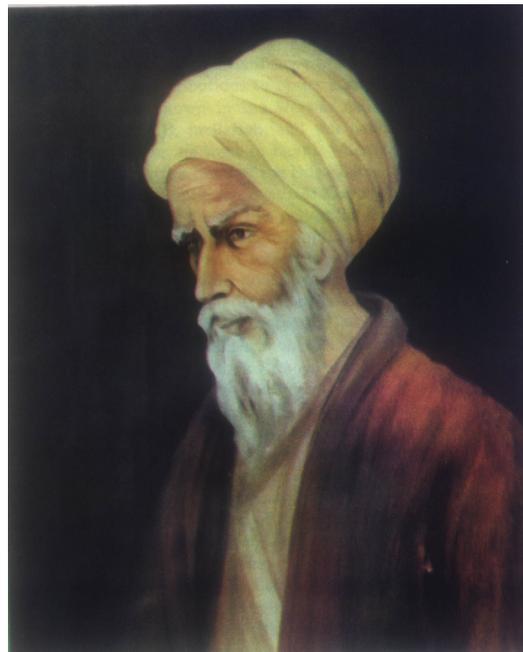
The current issue of the Journal that appears on the web is Volume 20, Number 1. It carries six major articles: a Health Promotion in Unani Medicine article by A. H. Lone, T. Ahmad, M. Anwar, Gh Sofi and H. Imam; a Public Health Neonatal Resuscitation Training Programme, Its Efficiency at Rural Hospital article by A. M. Taksande and K. Y. Vilhekar; a Pharmacognosia Antibacterial Activity of *Lepidium sativum* and *Allium Prorrum* Extracts and Juices against Some Gram Positive and Gram Negative Bacteria article by H. F. S. Akrayi and J. D. Tawfeeq; a Microbiology Prevalence of beta-Lactamase Producing and Non-Producing *Staphylococcus Aureus* Associated with Patients in Intensive Care Unit article by I. E. A. Alsaimary; a Neonatology A Neonate with Spontaneous Pneumomediastinum article by E. Çalisici, M. Y. Öncel, S. Yurtutan, F.E. Canpolat and Ş. S. Oguz; a Orthopedics Limping Child; Septic Arthritis or Familial Mediterranean Fever? by M. N. Aytekin, Z. Akelma and E. Mete.

The Journal's 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. Journal's current e-mail is ias@go.com.jo.

ABU ALI HASSAN IBN AL-HAITHAM* (965-1040 AD)

Abu Ali Hassan Ibn al-Haitham was one of the most eminent physicists, whose contributions to optics and the scientific methods are outstanding. Known in the West as Alhazen, Ibn al-Haitham was born in 965 AD in Basra, and was educated in Basra and Baghdad. Thereafter, he went to Egypt, where he was asked to find ways of controlling the flood of the Nile. He also travelled to Spain and, during this period, he had ample time for his scientific pursuits, which included optics, mathematics, physics, medicine and development of scientific methods on each of which he has left several outstanding books.



He made a thorough examination of the passage of light through various media and discovered the laws of refraction. He also carried out the first experiments on the dispersion of light into its constituent colours. His book *Kitab-al-Manathir* was translated into Latin in the Middle Ages, as also his book dealing with the colours of sunset. He dealt at length with the theory of various physical phenomena like shadows, eclipses, the rainbow, and speculated on the physical nature of light. He is the first to describe accurately the various parts of the eye and give a scientific explanation of the process of vision. He also attempted to explain binocular vision, and gave a correct explanation of the apparent increase in size of the sun and the moon when near the horizon. He is known for the earliest use of the camera obscura. He contradicted Ptolemy's and Euclid's theory of vision that objects are seen by rays of light emanating from the eyes. According to him the rays originate in the object of vision and not in the eye. Through these extensive researches on optics, he has been considered as the father of modern optics.

The Latin translation of his main work, *Kitab-al-Manathir*, exerted a great influence upon Western science e.g. on the work of Roger Bacon and Kepler. It brought about great progress in experimental methods. His research in catoptrics centred on spherical and parabolic mirrors and spherical aberration. In his book *Mizan al-Hikmah*, Ibn al-Haitham discussed the density of the atmosphere and developed a relation between it and the height. He also studied atmospheric refraction. He discovered that the twilight only ceases or begins when the sun is 19° below the horizon and attempted to measure the height of the atmosphere on that basis. He also discussed the theories of attraction between masses, and it seems that he was aware of the magnitude of acceleration due to gravity.

His contribution to mathematics and physics was extensive. In mathematics, he developed analytical geometry by establishing linkage between algebra and geometry. He studied the mechanics of motion of a body and was the first to maintain that a body moves perpetually unless an external force stops it or changes its direction of motion. This would seem equivalent to the first law of motion.

The list of his books runs to 200 or so, very few of which have survived. Even his monumental treatise on optics survived through its Latin translation. During the Middle Ages, his books on cosmology were translated into Latin, Hebrew and other languages. He has also written on the subject of evolution a book that deserves serious attention even today.

In his writing, one can see a clear development of the scientific methods as developed and applied by the Muslims and comprising the systematic observation of physical phenomena and their linking together into a scientific theory. This was a major breakthrough in scientific methodology, as distinct from guess and gesture, and placed scientific pursuits on a sound foundation comprising systematic relationship between observation, hypothesis and verification.

Ibn al-Haitham's influence on physical sciences in general, and optics in particular, has been held in high esteem and, in fact, it ushered in a new era in optical research, both in theory and practice.

* *Hakim Mohammad Said (Editor), 2000. Personalities Noble, National Science Council of Pakistan. Second Revised Edition (English and Arabic). Published by the Islamic World Academy of Sciences.*