



**Islamic World Academy of Sciences  
(IAS)**

***OVERVIEW 2021***

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## **Preface**

This year marks the 35<sup>th</sup> anniversary of the Islamic World Academy of Sciences. Over the span of the last thirty-five years, the IAS has established itself as active and vibrant player in the domain of science and technology promoting the values of science across the Islamic world. It executes its mission through programmes that emphasize knowledge sharing, networking and capacity building, while also sustaining stakeholder engagement. In this respect the Academy advocates the scientific community points of view in all facets of developmental processes. Its contribution is communicated to decision-making bodies at OIC, national or international levels.

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**Prof. Abdullah Al-Musa**  
**Director General, IAS**  
**Amman, Jordan**  
**August 2021**



## 1 HISTORICAL BACKGROUND

The nascent idea of establishing the Islamic World Academy of Sciences first appeared in the plan of action developed by OIC Standing Committee for Scientific and Technological Cooperation (COMSTECH) chaired by the late General M. Zia-ul-Haque then was President of the Islamic Republic of Pakistan. In 1984 the heads of OIC member states gathered in Casablanca, had decided upon the recommendation submitted by COMSTECH, to establish the Islamic Academy of Sciences. Two years later, thirty eight distinguished scientists from different Islamic countries gathered in a conference held in Amman under the patronage of H.R.H. Prince El-Hassan bin Talal of the Hashemite Kingdom of Jordan. In that conference, Prince El-Hassan bin Talal and President of Pakistan (then was the late Zia-ul-Haque) were unanimously nominated as Patrons of the Islamic Academy of Sciences. In addition, the founding conference approved the Statutes and By-Laws and elected members of the first Council. The first Founding President of the Academy was the late Prof. M. Kazi and the Secretary General was Prof. Ali Kettani whereas Dr. H. El-Mulki was the first Director General.

The Hashemite Kingdom of Jordan offered to host the Academy headquarters in Amman and granted an annual subsidy to cover running expenses of its office. A diplomatic immunity and privilege were also granted to the Academy in recognition of its status as an international organization. H.R.H. El-Hassan bin Talal had generously donated 3000sqm piece of land to the benefit of the Academy located at El-Hassan Science City by the Royal Scientific Society (RSS) and Higher Council for Science and Technology (HCST).

In the year 2005 the General Assembly of the Academy (then convened in Kuala Lumpur) at the conclusion of the 14<sup>th</sup> annual IAS Conference had ratified the decision taken by the Council to change the name of the Academy to “**The Islamic World Academy of Sciences**”. The change was intended to differentiate the Academy from other OIC Academy that focuses on Islamic Faith (*Al-Aqeedah and Al-Fiqh*) in Jeddah.

The change also emphasizes the core interest and scientific objectives of the Academy as means to accelerate socio-economic transformation of OIC countries and facilitate engagement of non-Muslim scholars in the IAS activities from either OIC member states or internationally.

## 2 VISION, MISSION AND GOALS

**Vision:** The IAS seeks to act as functional platform for improving, facilitating and nurturing interaction, collaboration, networking and enhancing knowledge sharing in a bet to address pressing challenges facing socio-economic development in OIC member states.

**Mission:** The IAS aspires to:

1. Avail its capacity and capability to serve as Islamic Brain Think Tank.
2. Respond effectively and timely to current and futuristic needs for advancing and promoting developmental goals and objectives to realize aspirations of the *Ummah*.

**Goals:** The main goals of the IAS are:

1. Enabling inter-Islamic world connections among scientists and academies to advance science, technology and innovation.
2. Acting as legitimate, scientifically-based voice for the cause of STI on behalf of scientists in the Islamic World.
3. Promoting the development of ecosystem that nurtures science and value education and research as a vehicle for socioeconomic transformation in the Islamic World.
4. Providing science-informed advice and recommendations through its various activities to local, regional and international levels.

### **3 STRUCTURE**

#### **3.1 General**

The IAS is governed by a General Assembly in which all founding and elected Fellows are members. The number of Academy Fellows was 102 on July 2021. They come from 30 countries and many scientific disciplines. The Fellows of the Academy are prominent in their fields and/or contributed significantly both to development locally and globally.

The eleven-membered Council of the IAS is elected by the General Assembly for a 4-year term. Their principle mandate is to oversee the management processes of the Academy.

#### **3.2 General Assembly and Council**

The General Assembly and Council of the IAS normally meets separately once every year, concurrently with the IAS annual conference.

The Council has the responsibility of monitoring and evaluation of the IAS activities at the scientific, administrative and financial issues.

#### **3.3 IAS Secretariat**

The IAS Secretariat is based in Amman-Jordan. The Secretariat is responsible for executing the Academy programmes within the boundaries delineated by the IAS active strategy and directives of the Council.

Jordan, as a host country has contributed annual grant of US\$75,000 to help defray the running cost. Jordan has also conferred diplomatic immunities and privileges to the Academy.

In 1987, H.R.H. Prince El-Hassan of Jordan, Founding Patron of the IAS has graciously donated a plot of land to the Academy within the premises of El-Hassan Scientific City.

Construction work on the permanent headquarters of the IAS had been completed in late 2019. The building is erected on a rental plot from the Municipality of Greater Amman for US\$150/annum.

#### 4 FINANCES

The IAS receives an annual grant from the government of Jordan that barely covers its local and administrative expenses.

The IAS received a generous grant from the Arab Fund for Economic and Social Development (AFESD) which had been used along with other donations from different dignitaries including the IAS Fellows, corporations and organizations to build the IAS headquarters in Amman.

The programmes of the Academy are partially supported through grants from COMSTECH, The Kuwait Foundation for the Advancement of Sciences (KFAS) as well as some other donor agencies like the Islamic Development Bank (IDB), local and international companies. The IAS also undertakes joint programmes with many UN and other international agencies foremost among which is the UNESCO.

A small trust fund is administrated by the IAS which supports some activities in the Islamic world – in some cases by prizes recognizing achievement, in others, by providing support to training workshops, and the recent IAS-COMSTECH initiative of fellowship grant targeting LDC scientists. The grant allows scientists from these countries to spend some time in centres of excellence in other OIC countries. Furthermore, the Academy administers the Ibrahim Memorial Award and its related Fund, which was instituted by the Academy after (the late) Professor Muhammad Ibrahim, Founding Fellow of the IAS. This Award is awarded biannually to outstanding scholars working in the medical field from the various OIC-member countries.

The *Waqf* fund that had been raised for the construction of its permanent headquarters, had been used efficiently. Construction

of the permanent headquarters is now completed, well quipped and ready to accommodate IAS activities.

## **5 PROGRAMME**

### **5.1 General**

The IAS programme aims to highlight the significance of science and technology in societal transformation and economic development with backdrop of Islamic values and culture.

The programme contributes to develop networking among scientists and interface their expertise with development stakeholders. It also contains elements in capacity building in science and technology that are aimed specifically at the science community with special emphasis on scientists mobility from LDC countries to centres of excellence in other OIC member states, especially those involved in Basic Sciences' research. Another part of the programme aims at bridging the scientist decision-maker divide and focuses on promoting government action in certain S&T areas. Such action can catalyse the overall process of socio-economic development in Islamic countries. Moreover, the programme of the IAS contains a multi-form information dissemination element that aims to cultivate public interest in science and scientific activities and address the various components of the IAS's target audience.

### **5.2 Programme Outline**

The IAS has executed activities under the following domains:

#### **5.2.1 Islam and Science**

The IAS had addressed this sub-programme through:

*(a) Publication of books on Islamic Scientific Thought  
(Journal published, 1990-1995)*

The aim of this undertaking was to provide an objective assessment of the concordant relationship that exists between the components of each of the following topics:

- (1) *Qur'an, Hadith and Science (Book published in 1999)*;
- (2) The concept of knowledge in Islam;
- (3) Modern science and the Islamic Values System; and
- (4) Islamic Thought and Modern Science (*Book published in 1997*).

(b) *Publication of pamphlets on the links between Islamic practices and science:*

- (1) Science and the concept of *Halal* and *Haram*;
- (2) Islamic Rituals;
- (3) The Lunar Calendar; and
- (4) Animal Sacrifices.

(c) *Publication of books on contemporary scientific issues from an Islamic perspective*

The purpose of this activity was to examine current scientific issues facing the Islamic *Ummah*. These include for example various aspects of research in genetic engineering, organs transplants, sustainable natural resources development, environmental degradation etc...

### **5.2.2 Science, Technology and Innovation Development**

This constitutes the core of the IAS general programme.

(a) *Providing environment to induce OIC member states endeavour to adopt capacity-building schemes and/or policies that assure suitable ecosystem for flourishing science, technology and innovations in different contemporary change drivers as follows:*

- (1) Food and Agriculture (*Conference 1987*);
- (2) Microelectronics (*Conference 1989*);
- (3) New Materials (*Conference 1989/Conference 2002*);
- (4) Environmental Degradation (*Conference 1992 and Conference 2008*);
- (5) Tropical Medicine (*Conference 1993*);

- (6) Computer Technology (*Conference 2000*);
- (7) Genetic Engineering and Biotechnology (*Conference 2001*);
- (8) Biomedical Technology (*Conference 2001*);
- (9) Plant Genetics (*Conference 2001*);
- (10) Materials Science (*Conference 2002*);
- (11) Culture of Science (*Conference 2002*);
- (12) Lasers and Fibre Optics (*Workshop in Tunisia, 2002*);
- (13) Energy (*Conference 2003*);
- (14) Nuclear Technology (*Conference 2003*);
- (15) Remote Sensing (*Conference 2011*);
- (16) STI Landscape (*Conference 2020*);
- (17) Biodiversity (*Conference April 2021, and webinar September 2021*);
- (18) Agriculture Production and Food Security (*Webinar 2020-2021*);
- (19) Nanotechnology (*Webinar 2021*); and
- (20) STI under Ever Changing Events (*Conference 2021*).

(b) *Promotion of science and technology excellence in the Islamic world*

This part of the programme aims to promulgate achievements, inventions and significant contributions in science and technology and disseminating contributions that impact the learning environment:

- (1) Publication of a specialised journal in medicine (*IAS Medical Journal has been published since 1988*);
- (2) Preparation of model school books (*Conference 1999*);
- (3) Prizes and medals (*IAS-COMSTECH Ibrahim Memorial Award*).

The IAS collective activities are instrumental in providing forum for dialogue and knowledge sharing among scientists in OIC and abroad.

Thus, conferences, webinars and training workshops have been organised and/or are planned in the following areas:

- (1) Food Security (*Conference 1987, and webinar 2020*);

- (2) Advanced Technologies (*Conference 1989*);
- (3) Pollution and Environmental Degradation (*Conference 1992*);
- (4) Nutrition (*Conference 1993*);
- (5) Water Resources Management (*Conference 1994*);
- (6) Science Education (*Conference 1999*);
- (7) Natural Resources Development;
- (8) Land Utilisation;
- (9) Desertification (*Conference 1992*);
- (10) The Exploitation of Ocean Resources;
- (11) Energy (*Conference 2003*);
- (12) Information Technology (*Conference 2000*);
- (13) Knowledge Society (*Conference 2009*);
- (14) Biodiversity (*Conference 2021*);
- (15) STI Landscape (*Conference 2020*); and
- (16) STI under Ever Changing Events (*Conference 2021*).

(c) *Co-operation with OIC-Member States in Science and Technology*

- 1) IAS with COMSTECH partnership are designing a mobility grant that enables scientist in the LDC Countries to interact and make research visit for 2-3 months to centers of excellence in some designated OIC member states.
- 2) IAS intends to form task committees to draft concept papers on current pressing issues in science, technology and innovation within the context of social imperatives and consequents.

COMSTECH has published most of the profiles mentioned hereunder. The IAS hopes that the remaining profiles, as well as some others on other topics, can be published with the help and co-operation of COMSTECH.

- (1) S&T Profiles of Islamic Countries (*Conference 1988*);
- (2) Industrial and Commercial Profiles of Islamic Countries;
- (3) Resource Atlas of the Islamic World (*undertaken by COMSTECH*);
- (4) The Status of S&T Education in the Islamic World (*Conference 1999*);



- (5) Energy Profile of Islamic Countries (*Conference 2003*);  
and
- (6) Food Profile of Islamic Countries (*Conference 1987*).

*(d) Co-operation with regional and international organisations*

The IAS has strong ties with a number of regional and international organisations. This has been achieved through the following means (which are covered in some detail in other parts of the report):

- (1) Exchange of literature (*Books, Proceedings, Journals, etc...*);
- (2) Exchange of Internet Hyperlinks;
- (3) Co-operation agreements that set out modalities of collaboration;
- (4) Organising joint activities such as seminars and workshops; and
- (5) Participation in debates regarding issues raised by these organization.

**5.2.3. Dissemination of Information**

- (1) The Academy disseminates its webinars, conferences and training workshops and collects information on different aspects of S&T to scientific communities and the public at large, through the following means:
  - (a) The Internet (*website launched in 1997*)(*new website launched in 2021*);
  - (b) Databases (*mini-database developed in 2004*);
  - (c) Monographs;
  - (d) Technology information bulletins (*through e-mail*);
  - (e) Newsletter (*46 issues have been published*);
  - (f) Video and CD-based programmes (*Online*);
  - (g) IAS YouTube Channel;
  - (h) Pick of the Week; and
  - (i) Digital Library.

- (2) The suggested task committees are expected to bring to focus issues for further discussions in future conferences. Issues of significance had been already subject of deliberation and discussions such as:
- (a) Food Security.
  - (b) Health Security and Pandemics.
  - (c) Nanotechnology and Materials.
  - (d) Climate Change.
  - (e) Joint Vaccine Production Potential in OIC.
  - (f) Cross Border Issues; Water Shed, and Biodiversity.
  - (g) Higher Education.
  - (h) People Displacement and Migration.

### **5.3 IAS Strategy (2021-2026)**

This strategy aims at communicating the IAS action plan in the coming 5 years.

#### ***5.3.1. Strategic Priorities***

##### ***5.3.1.1 Structure and Governance***

The IAS is an independent organization run by its members, governed by elected Council (11 members) every 4 years by the General Assembly. Decisions of the Council are deliberated and ratified by the General Assembly involving all present Fellows. The Secretariat is the executive arm of the Academy responsible for carrying out programs and activities which are set by the governing structure and run day to day business. The IAS will maintain its course abiding by the Statutes and By-Laws and Headquarters Regulations while keeping in mind the importance of being resilient to better function under changing conditions.

##### ***5.3.1.2 Statutes and By-Laws***

The Founding Fellows of the Academy approved and adopted the first Statutes and By-Laws of the Academy in 1986. In 2005, the IAS has changed its name to the Islamic World Academy of Sciences (IAS), and has become an

affiliate institution of the Organisation of Islamic Cooperation (OIC).

Since, the General Assembly of the IAS approved a number of amendments to the Statutes and By-Laws of the IAS.

#### ***5.3.1.3 Headquarters Regulations***

The headquarters regulations of the Academy was first drafted and approved in 1986. Since then some changes or modifications of some articles had been introduced. The changes were intended to confer resilience in face of changing working environment of the Academy. The latest change took place in the 42<sup>nd</sup> meeting of the Council (17 August 2020) and ratified in the 22<sup>nd</sup> General Assembly meeting (1 December 2020).

These amendments were designed to strengthen the Academy's financial position by restructuring and cutting the running cost expenses. Articles related to regular employment had been omitted or amended in favour of contract employments. This will eliminate the unnecessary expenses related to the end of service compensation and provident fund. Within this context and referring to Article 7 in the Statutes and By-Laws the Council had formed a "Local Executive Headquarters Committee" and empowered it with vicarious authority and powers of the Council when need arises in its absence. The decision had been ratified by the General Assembly.

#### ***5.3.1.4 Fellows***

The IAS is proud of the quality of its outstanding Fellows who are elected by their peers in a system that values and recognizes their achievements in science, technology and in their public services.

**Strategic Target 1:** Using the collective mind power of its Fellows the IAS is set to be able to address various developmental problems and provides evidence-based solutions in an interdisciplinary and comprehensive approach. Its contributions can assume as well the role of

catalyst, facilitator or promoter for scientifically-based inclusive, unbiased and independent advice at local, regional and international levels.

**Strategic Target 2:** It is important to weigh the carrying capacity of the Academy and determine the full load of Fellows. Most international Academies have their full load not exceeding 200 members. Taking into consideration elements of financial constraints and inclusiveness, the full load of the Academy should not exceed 200. The current 102 Fellows come from 30 OIC member states; a condition that calls for more efforts to make IAS more inclusive to cover non or low represented countries with special emphasis on gender representation as well. In this effect the Secretariat suggests to set an upper limit for number of Fellows coming from the same country (probably 6).

**Strategic Target 3:** To fulfil its vision, the IAS shall capitalize on the expertise and diversity of its Fellows to further engage them in its activities and provoke initiatives. It is vital to form thematic working groups to tackle current and pressing issues of concern for the Islamic world.

Some of the themes that could be considered are; people displacement and migration, pandemic eruption, vaccine production at pan Islamic level, water-shared basins, climate change, material science and nanotechnology. These groups are expected to author working papers and come up with suggestions that could be deliberated in workshops or conferences and once adopted by the Academy, the recommendations are to be communicated to all concerned policy makers and OIC institutions.

Among these issues of particular importance that currently warrant attention is vaccine production; the rise of COVID-19 and likely other zoonotic pathogens that may suddenly erupt, illustrate the urgency for IAS to act as a Think Tank of the *Ummah*. The problem cannot be solved at one country level.

The pandemic has pushed 100 million people into poverty; the way forward is to consolidate the capacity and capabilities of the Islamic countries to combat this and other

communicable diseases. Research and development of vaccine including clinical studies is more prone to high failure rates. Thus the estimated cost of a new vaccine could soar to \$1 billion. A cost that cannot be shouldered by one country. Another factor in consideration is the economics of scale that would be available at the level of OIC member states. The IAS in its capacity as Think Tank should promote and call for formation of consortium at the OIC level to establish centers for production of vaccine for human and animal diseases. This notion will be put on the IAS agenda (workshops, studies or conferences).

OIC member states should contribute financially to this effect on the basis of their GDP. Another source of finance may come from Zakat collected from Muslims all over the world. A notion that had been long advocated by H.R.H. Prince El-Hassan bin Talal who emphasized the importance of enacting a pan-Islamic framework to establish Zakat institution. The money will be efficiently used to address different developmental issues across the Islamic world.

In this context the IAS will also focus on other important issues with multidimensional, interconnected and increasingly threatening specially those which have cross-borders impact like water and biodiversity. The IAS will strive to stay responsive and relevant to ever changing events. This role of IAS comes in harmony with the Sustainable Development Goals of the United Nations.

#### ***5.3.1.5 Strengthening and enhancing science, technology and innovation ecosystem***

The IAS assumes the role of science advocacy in public policies. It acknowledges and rewards scientists and scientific achievements. Its impact will be communicated through the following:

**Strategic Target 1:** Fellowship awards.

The IAS will continue to implement its scheme that recognizes outstanding scientific and technological achievements of scientists in the Islamic world through nominating and electing prominent scientists.

**Strategic Target 2:** The IAS will strive to maintain its award system that highlights the achievements of scientists from the Islamic world in the medical field (Ibrahim Memorial Award).

The Award is honorary in nature with nominal monetary value. The IAS will seek to sustain financial resources that guarantee its sustainability.

**Strategic Target 3:** Holding annual and occasional conferences.

The IAS will abide by its tradition of holding its annual conferences in different Islamic countries (upon invitation). However, under force majeure conditions the IAS will convene its conference online.

The IAS is taking steps to realize its 23<sup>rd</sup> conference in Morocco upon the invitation extended by the Hassan II Academy of Science and Technology under the patronage of His Majesty King Mohammad the Sixth in December 2021. Like other annual conferences, the event will be attended by Fellows and scholars to exchange experience and share knowledge and ideas regarding: (1) vaccine production prospects at the pan Islamic countries, (2) health, environment and crisis management, (3) water, energy and food nexus, (4) water resource management, and (5) biodiversity under changing climate.

The 24<sup>th</sup> annual conference is expected to be held in Karachi in 2022 and the 25<sup>th</sup> will be held in Amman. Occasional conferences will be contemplated to discuss issues pertinent to then emerging needs. In this regards the IAS will be holding a conference on biodiversity in the midst of the year 2021. The conference aims at raising the awareness of Islamic countries of the global international frameworks and protocols governing access to genetic material and to enable active participation of OIC member states in further understanding the articles of the Convention on Biological Diversity (CBD). The activity comes in time to prepare for the UN conference regarding CBD (COP15) in which CBD articles in Nagoya protocol

concerning germ plasm trafficking will be amended and discussed.

**Strategic Target 4: Webinars.**

The IAS adoption of this new initiative will continue to organize webinars discussing scientific and technological issues that promote scientific culture and help build new bridges and networks among participants. The planned webinars will discuss subjects proposed by the Secretariat or IAS Fellows. The coming soon webinar series will discuss nanotechnology and its application in industry, agriculture and medicine. Other series are contemplated to illuminate the best practice in striking partnerships and linkage between industry, research centers and higher education.

**Strategic Target 5: Training programs.**

Training programs will be part of the IAS agenda in the coming years. These will be designed to contribute and enhance capacity building efforts in OIC member states.

Early this year (2021) a training program was launched to provide policy makers with tools to enable scientifically-based assessment of the quality of research being conducted in their respective countries with regard to its impact on development. This will help in prioritizing funding schemes for maximum impact.

The IAS will be considering another training program that supports entrepreneurship spirit by dissecting and analyzing skill tools needed for this undertaking.

**Strategic Target 6: Fellowship grants.**

Feeling the responsibility of extending help to promote development efforts through capacity building of the least developed Sub-Saharan countries, the IAS and COMSTECH will be entering an agreement to establish a mobility grant that is intended to allow scientists from these countries to do research for 2-3 months in preselected centers of excellence across the Islamic world. COMSTECH will contribute double the amount that IAS will contribute to the joint Fund. The scheme is expected to last 3-4 years.

**Strategic Target 7:** Establishing Open Access Digital Library.

The IAS will be establishing digital library that could be freely accessed. The library will contain:

- (A) All publications of the Academy including proceedings of conferences, books, pamphlets and newsletter issues.
- (B) A link to all issues of the IAS Medical Journal.
- (C) Fellows' donated e-books or publications.
- (D) Outsourced free books.
- (E) Links to significant publications of the United Nations and other international institutions.

### **5.3.2 Enhance the IAS Visibility**

**Strategic Target 1:** Creating and maintaining strong partnership or membership with other academies, institutions/organizations at OIC and the international level.

This partnership allows the IAS to exchange publications and information, run joint activities or programs, and setting up joint funding schemes.

**Strategic Target 2:** The Fellows and the Secretariat will proactively or upon request undertake tasks or participate in studies, consultations issuing or endorsing statements at local, regional and international levels or adopted declarations at the conclusion of its conferences in matters of common good to OIC member states or international welfare.

**Strategic Target 3:** Maintain and Develop Partnerships with particularly important institutions/ organizations such as:

Organization of Islamic Cooperation General Secretariat (OIC), Islamic Commission for Economic, Cultural and Social Affairs (ICECS), the Islamic World Educational, Scientific and Cultural Organization (ICESCO), Islamic Development Bank (IDB), International Islamic Charitable Organization (IICO), the Ministerial Standing Committee on Scientific and Technological Cooperation of the OIC (COMSTECH), InterAcademy Panel (IAP), the United Nations Educational, Scientific and Cultural Organization (UNESCO), International Union of Academies (IUA),



Association of Agricultural Research Institutions in the Near East and North Africa (AARINENA), the International Center for Agricultural Research in the Dry Areas (ICARDA), Alliance of Biodiversity International (CIAT), Sustainable Health Equity Movement (SHEM), Mustafa Science and Technology Foundation (MSTF) and Foundation for Ethic Understanding (FFEU).

**Strategic Target 4:** Enhance and maintain information dissemination domain.

1. The website

The current website which is developed and designed in-house seemed user-unfriendly. The IAS Secretariat commissioned a professional designer and programmer to reshape the website to enable users to surf its contents easily. The design is expected to denote newly introduced icons of new additions such as the digital library.

2. The Medical Journal and the Newsletter

The IAS will continue to financially support and seek help from donors' agencies to sustain publication of its Medical Journal. The journal enjoys popularity among medical researchers in OIC region and is being recognized by WHO Index Medicus and the Turkish Citation Index.

The IAS resumes issuing quarterly issues of the Newsletter which came to a complete halt since 2013 up to mid-June 2020.

The publication includes items of news about the Academy and the Fellows. Published articles mostly fit in a predetermined theme. The Secretariat distributes the issue to more than 2000 subscribers all over the world. The Secretariat will work diligently to improve its contents and to actively engage Fellows in this activity.

3. Pick of the week

This is another weekly activity to reach out and engage the Fellows and other subscribers.

The IAS Secretariat will ensure disseminating cutting edge articles or news on science and technology research work by selecting items that enrich dialogue and ideas exchange among its Fellows and subscribers.

#### 4. Social media

The IAS in its attempt to gain visibility had established a page on Facebook and YouTube channel. These are to be used to disseminate information and broadcast conference's presentations and talks in webinars. The two venues are recently picking up in popularity.

**Strategic Target 5: Widen OIC member states representation in IAS while maintaining the quality of membership.**

Candidate nominations and elections processes is governed with rigorous application of the By-Laws. However, recently some Fellows raised concern about the process which precipitated in forming an Ad Hoc committee tasked with reviewing and amending these By-Laws. The Secretariat hopes that the committee will finish its tasks in due time before the new election cycle is in full spin. Hopefully the amended By-Laws should take into consideration the variability and inclusiveness of representation across the OIC member states. Nominations are ought to be based on tangible scientific merit with special emphasis on the value added of the candidate to the Academy's role, the society, involvement in civil service as indicative of futuristic involvement in the Academy's activities. In this regard the Secretariat will propose to the Council to introduce regulations to restrict nomination of the same candidate in just two elections cycles. This will give weight and respect to previously taken decisions regarding that candidate.

**Strategic Target 6:** The IAS will strive to ensure its availability and active participation in science diplomacy initiatives.

**Strategic Target 7:** The IAS in keeping its high profile in the international science community, will identify experts in STI of international caliber and seek to engage them in the various IAS activities.

### **5.3.3. Sustainable Funding**

Currently the government of Jordan is the foremost supporter of the IAS as it provides annual seed money intended to cover local expenses (\$75k). A generous grant from the Arab Fund for Economic and Social Development (AFESD) had been used along with other donations from different dignitaries including Fellows, corporations and organizations to build the IAS headquarters in Amman.

The global economic slowdown and advent of COVID-19 had its impact on the financial capacity of the IAS. This had been manifested by the difficulty to secure fund from donor agencies.

To cope with the financial constraints, the IAS went through organizational restructuring to increase its efficiency while cutting on the running costs.

In this regard the IAS is in the process of establishing photovoltaic system to generate electricity enough to meet HQ energy requirements. The appreciated efforts by His Excellency Dr. Adnan Badran resulted in securing extra stable source of annual funds from the Higher Council for Science and Technology/ Jordan. This will strengthen the IAS resiliency in face of changing economic condition.

**Strategic Target 1:** The Secretariat is contemplating on capitalizing on the current facilities the HQ can offer by renting them to scientific gatherings or training. This only can be done when the pandemic recedes.

**Strategic Target 2:** The Secretariat will spare no efforts to raise funds from donor agencies/ organizations/ dignitaries.

## 6 ACTIVITIES

### 6.1 General

From the onset, the Academy has been implementing various activities that are in line with its mandate and fall within its strategy and action plan. The objective of all such activities has been to advance the science and technology in OIC and developing countries. The outcome of these activities is expected to generate interest and to foster support for STI with the hope that it will help in creating functional STI ecosystem in OIC member states.

The IAS has built itself into an action-oriented institution utilising most of its limited resources for activities that help to accelerate development processes of OIC-Member countries.

The Academy is acting as a think tank for OIC through its valuable output including specialised scientific conferences; publishing a series of Conference Proceedings (Policy Documents), journals, books, newsletters, and establishing a quality medical journal; as well as organising a number of quality training programmes. The outcome of these activities is expected to exert desirable push that promote policies in favour of science and technology.

Most of all, the Academy has managed to define a very useful dual role for itself namely as a programme implementation and policy-making body dedicated to contributing to the development of the *Ummah* and humanity.

Further, the Academy has established numerous contacts with a number of international non-governmental organisations and academies, as well as governments throughout the world.

Some activities of the IAS, over the last few years, are summarised below:

### 6.2 Co-operation with other organisations

The IAS maintains mutual interactions and exchange of ideas and participates in forming international lobbying voice for issues in science, health and development aspects with more

than one hundred similar organisations all over the world. These include:

- OIC Standing Committee for Scientific and Technological Co-operation (COMSTECH), Pakistan;
- Islamic Development Bank (IDB), Saudi Arabia;
- United Nations Educational, Scientific and Cultural Organisation (UNESCO), Egypt and France;
- Islamic Educational, Scientific and Cultural Organisation (ICESCO), Morocco;
- The World Academy of Sciences (TWAS), Italy;
- OIC General Secretariat, Jeddah, Saudi Arabia;
- InterAcademy Partnership on International Issues (IAP), Trieste, Italy;
- InterAcademy Medical Panel (IAMP), Trieste, Italy;
- International Union of Academies (IUA), Brussels, Belgium;
- InterAction Council (IAC), Canada;
- Association of Agricultural Research Institutions in the Near East and North Africa (AARINENA);
- Union for the Mediterranean (UfM), Spain;
- The International Science Council (ISC), France;
- Sustainable Health Equity Movement (SHEM);
- International Union for Conservation of Nature (IUCN), Switzerland;
- The International Centre for Agricultural Research in the Dry Areas (ICARDA), Lebanon; and
- Alliance of Biodiversity International (CIAT).

### **6.3 Conferences, Seminars, and Webinars**

The conferences and webinars of the IAS are designed to address relevant issues of common concern for OIC. These activities are instrumental in creating common ground for discussion and knowledge exchange and sharing with the hope they constitute a strong basis formulating networking platforms. Countries that host these conferences have extra benefit of widening the exposure of their scientific

constituents to novel opportunities of education and networking.

The Academy is used to convene in person annual international conferences every year that are usually held in different countries across OIC member states. The host country normally provides local accommodation and hospitality for the participants whereas the Academy and the other co-sponsors bear the burden of other expenses.

The 22<sup>nd</sup> conference was held virtually and broadcasted from the newly constructed HQ due to conditions created by the COVID-19 pandemic. The 23<sup>rd</sup> conference will be convened hopefully in person on 15 Dec. 2021 in Rabat, Morocco.

### ***6.3.1. Science, Technology and Innovation (STI) Under Ever Changing Global Events, Rabat, Morocco, 15 December 2021.***

Under the patronage of His Majesty King Muhammad VI of Morocco, the Islamic World Academy of Sciences (IAS) will be convening its 23<sup>rd</sup> international conference in Rabat (Morocco); starting on 15 December 2021, under the title *Science, Technology and Innovation (STI) Under Ever Changing Global Events*.

The conference is a joint activity between the IAS and Hassan II Academy of Science and Technology.

Like other annual conferences, the event will be attended by Fellows and scholars to exchange experience and share knowledge and ideas regarding: (1) vaccine production prospects at the pan Islamic countries, (2) health, environment and crisis management, (3) water, energy and food nexus, (4) water resource management, and (5) biodiversity under changing climate.

### ***6.3.2. Biodiversity Webinar, 25 September 2021***

This webinar was organized with the Turkish Academy of Sciences (TÜBA), on 25 September 2021. Three distinguished scientists presented lectures during the webinar; Prof. Dr. İsmail Koyuncu – TÜBA Principal Member-

Istanbul Technical University, Prof. Dr. Sezai ERCİŞLİ - Atatürk University, and Dr. Öğr. Üyesi Korhan ÖZKAN – Middle East University

### **6.3.3. Series of Webinars on Nanotechnology, (May-August 2021)**

The webinars were broadcasted via IAS zoom platform in May 2021 and continued through August (one session/month), and discussed the following topics: Application of Nanotechnology in Medical Technology, Application of Nanotechnology in Pharmaceutical Technology, Application of Nanotechnology in Agriculture and Application of Nanotechnology in Industry.

- Session 1: Nanotechnology Innovations in Health Care, from Lab to Consumer, Dr. Munir Nayfeh FIAS, *Department of Physics, University of Illinois at Urbana-Champaign, USA*, Saturday 8 May 2021.
- Session 2: Nanosciences & Nanotechnologies: Platforms toward SDGS' Attainment, Dr. Malik Maaza, *UNESCO UNISA Africa Chair in Nanoscience & Nanotechnology, South Africa*, Saturday 5 June 2021.
- Session 3: Nanotechnology: The world of Wonder and the Emerging Opportunities, Dr. Alaaldin Alkilany, *Associate Professor, Pharmaceutical Nanotechnology, Pharmacy School, University of Jordan (JU), Jordan, Director of Accreditation and Quality Assurance Center at JU*, Saturday 3 July 2021.
- Session 4: Use of Nano-enabled Approach for Efficient drug delivery in Gastrointestinal Cancer, Dr. Haun Meng, *Professor, the National Center for Nano-science and Technology in China*, Saturday 7 August 2021.

### **6.3.4. Biodiversity Conference, 1 April 2021**

Under the patronage of H.R.H. Prince El-Hassan bin Talal, IAS Founding Patron, and in cooperation with COMSTECH the IAS convened a conference on Biodiversity on 1<sup>st</sup> of April 2021. The conference aimed to raise awareness of Islamic countries of the global international frameworks and

protocols governing access to genetic material and enabled active participation of OIC member states in further understanding the article of the Convention on Biological Diversity (CBD). The activity was held in preparation for the UN conference regarding CBD (COP15) in which CBD articles in Nagoya protocol concerning germ plasm trafficking will be amended and discussed. Over 90 participants joined the conference including H.R.H. Prince El-Hassan bin Talal, H.R.H. Princess Sumaya Bint El-Hassan and a number of eminent scholars.

***6.3.5. Training programme on: Characterizing and Assessing Research Quality for Scaling the Impact for Innovation and Development, January 2021***

In January 2021 the IAS and AARINENA organized a virtual training programme via IAS platform, under the title: *Characterizing and Assessing Research Quality for Scaling the Impact for Innovation and Development*. The audience of the training were researchers, professors, graduate students, project and programme officers and policy makers in OIC countries.

***6.3.6. Series of webinars on Agriculture Production and Food Security under COVID-19 Pandemic, 2020-2021***

- Session 1 was held on 15 October 2020, under the title Challenges and Opportunities for Meeting Food Security in the Islamic World, presented by Dr. Mahmud Duwayri, Professor, Freelance Consultant.
- Session 2 was held on 5 November 2020, under the title The Debate on Future Strategies to cope with Agricultural Water Scarcity and Climate Change, presented by Dr. Theib Oweis, Senior consultant, Water, Land and Ecosystems, ICARDA, International Center for Agricultural Research in the Dry Areas.
- Session 3 was held on Thursday 17 December 2020. Under the title Agriculture Production and Food Security of Turkey and Middle East under COVID-19 Pandemic Conditions by Dr. İbrahim Ortaş, Çukurova Üniversitesi,



Faculty of Agriculture, Department of Soil Science and Plant Nutrition, Adana, Turkey.

- Session 4 was held on Thursday 7 January 2021, under the title Organic Agriculture: The Challenge of Sustaining Food Production in the Era of COVID-19, by Dr. Dilfuza Egamberdieva, National University of Uzbekistan.

**6.3.7. *Landscape of Science, Technology and Innovation in the Islamic Countries, December 2020, via zoom platform***

Under the patronage of H.R.H. Prince El-Hassan bin Talal, Founding Patron IAS, the IAS convened its 22<sup>nd</sup> Scientific Conference under the title: *Landscape of Science, Technology and Innovation in the Islamic Countries*. Under the COVID-19 pandemic situation the conference was held virtually on December 1, 2020, via zoom platform.

The deliberations and discussion in the conference had been a platform for exchanging experiences among participating countries in aspects related to STI agenda in their respective countries with regard to proper governance, partnership framework that ensure participation of all STI stakeholders including the private sector, governmental institutions (funding research and services), universities and research centers to ensure delivering science through technology development into commercialized products.

At the conclusion of the 22<sup>nd</sup> IAS Conference, the IAS adopted the IAS 2020 Declaration on *Landscape of Science, Technology and Innovation in the Islamic Countries*. (Appendix A)

**6.3.8. *Science, Technology and Innovation for Global Peace and Prosperity, Konya, Turkey, October, 2017***

Under the Patronage of the President of the Republic of Turkey, the IAS convened its 21<sup>st</sup> international science conference in Konya, Turkey, during 8-11 October 2017. The theme of the conference was *Science, Technology and Innovation for Global Peace and Prosperity*.

The proceedings volume (ISBN 978-9957-412-27-2) of this conference has subsequently been published online.

***6.3.9. International Conference on Islamic Sciences in the Western World (Middle Ages-Renaissance) Exchanges, Transmission, Influence, Amman, Jordan, April 2017***

Under the patronage of H.R.H. Prince El-Hassan bin Talal, the IAS, in collaboration with the International Union of Academies (IUA) organised a two day conference, hosted by Prof. Adnan Badran at the University of Petra in Amman during 25 -27 April 2017, in collaboration with the Royal Institute for Inter-Faith Studies (RIIFS), based in Amman (Jordan).

Inaugurating the event, H.R.H. Prince Hassan, who chairs the RIIFS, called for an approach to science which puts humankind at the centre of the equation of sustainability and development. He said that the physical world yearns for order in chaos, highlighting the necessity to establish peace. “The peace I am talking about is the one that starts from within, that reflects on addressing the shared responsibility in cooperation with science and politics; the medium and long term programmes specially in discussing energy, food and water.”

***6.3.10. International Seminar on ‘Islamic Perspectives on Science’s Big Questions,’ Amman, Jordan, May 2016***

Under the patronage of H.R.H. the President of the Royal Scientific Society (RSS), Amman, Jordan, the IAS convened an international seminar on Islamic Perspectives on Science’s Big Questions, on 5 May 2016 in Amman (Jordan).

This initiative sought to jumpstart a dialogue, disclosure, and debate on critical issues at the intersection of science and religion within Islamic countries and contribute to a process of scientific revival within the Islamic world.

The seminar was jointly organized by the Islamic World Academy of Sciences (IAS), the UN-ESCWA Technology Center (ETC), the Royal Scientific Society (RSS), the John

Templeton Foundation, the Muslim World Science Initiative and the Turkish Society for the History of Science (TBTK).

**6.3.11. *Science, Technology and Innovation: Building Humanity's Common Future, Tehran, Iran, December 2015***

Under the patronage of His Excellency the President of the Islamic Republic of Iran, the IAS convened its 20<sup>th</sup> international science conference in Tehran (Iran), 26-27 December 2015. The conference addressed the theme of *Science, Technology and Innovation: Building Humanity's Common Future*.

The proceedings volume (ISBN 978-9957-412-26-5) of this conference has subsequently been published online.

**6.3.12. *Achieving Socioeconomic Development in the Islamic World through Science, Technology and Innovation, Dhaka, Bangladesh, May, 2013***

Under the patronage of Her Excellency the Prime Minister of Bangladesh, the Islamic World Academy of Sciences (IAS) convened its 19<sup>th</sup> international science conference in Dhaka, the capital of the People's Republic of Bangladesh, during 6-9 May 2013. The theme of the conference was 'Achieving Socioeconomic Development in the Islamic World through Science, Technology and Innovation (STI).'

The conference which was inaugurated by the Prime Minister of Bangladesh on Monday 6 May 2013 was preceded on Sunday 5 May 2013, by a ceremony which was organised on the premises of the Bangladesh University of Health Sciences (BUHS), to honour one of the Founding Fellows of the IAS from Bangladesh: Prof. Mohammad Ibrahim (1911-1989). During the ceremony, Prof. Liaquat Ali, an outstanding Bangladeshi medical researcher, was honoured as the recipient of the 2013 IAS Ibrahim Memorial Award.

At the conclusion of the 19<sup>th</sup> IAS Conference, the IAS adopted the IAS 2013 Dhaka Declaration on Achieving

Socioeconomic Development in the Islamic World through Science, Technology and Innovation.

The declaration called for the promotion of scientific and technological cooperation among developing and OIC countries and for the creation of links between knowledge generation and enterprise development. To further promote the development of local technology, OIC countries need to improve their incentive regimes including taxation and must try to promote technological innovation and generate markets for new products and services within their societies, the declaration suggested.

The proceedings volume (ISBN 978-9957-412-25-8) of this conference has subsequently been published online.

***6.3.13. Science and Technology in Muslim World: Achievements and Prospects, Astana, Kazakhstan, May 2012***

Under the patronage of His Excellency Nursultan Nazarbayev Hon. FIAS, the President of Kazakhstan, the IAS convened a special symposium in ‘Palace of Peace and Accord’ Astana (Kazakhstan) during May 2012, and under the title: *Science and Technology in the Muslim World: Achievements and Prospects*.

This activity was organized by the IAS and the R.B. Suleimenov Institute of Oriental Studies of the Ministry of Education and Science of the Republic of Kazakhstan. The Islamic Development Bank (IDB) and the COMSTECH were the sponsors of the event.

***6.3.14. The Islamic World and the West: Rebuilding Bridges through Science and Technology, Doha, Qatar, October, 2011***

Under the patronage of H E the Prime Minister and Foreign Minister of the State of Qatar, the Islamic World Academy of Sciences (IAS) convened its 18<sup>th</sup> 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 9<sup>th</sup> 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).

At the conclusion of the 18<sup>th</sup> 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 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 polities 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 proceedings volume (ISBN 978-9957-412-24-1) of this conference has subsequently been published online.

#### ***6.3.15. Knowledge Society for the Innovation Economy, Shah Alam, Malaysia, December 2010***

Under the patronage of H.R.H. the Sultan of Selangor, the IAS convened a special symposium in Shah Alam (near Kuala Lumpur), Malaysia; on 8-9 December 2010 on the topic of “Knowledge Society for the Innovation Economy.” This activity was organized by the IAS and the International Islamic Academy of Life Sciences and Biotechnology (IIALSB) together with the University of Industry of Selangor (UNISEL). The Islamic Development Bank (IDB) and the OPEC Fund for International Development (OFID) were the sponsors of the event.

The symposium examined the interaction between Education, Research and Innovation. This so-called Knowledge Triangle is the key driver of growth as well as a knowledge-based society, today.

**6.3.16. *Towards the Knowledge Society in the Islamic World: Knowledge Production, Application and Dissemination, Shah Alam, Malaysia, December 2009***

Under the patronage of His Royal Highness the Sultan of the State of Selangor, Malaysia; the IAS convened its seventeenth science conference in Shah Alam, the capital of Selangor, 14 to 17 December 2009.

The conference was under the title; *Towards the Knowledge Society in the Islamic World: Knowledge Production, Application and Dissemination*.

Over 150 participants representing over 25 countries participated in the conference including the representatives of no less than 15 academies of sciences.

Alongside the conference, meetings of the IAS Council, IAS General Assembly, and the General Assembly of the Network of Academies of Sciences in Islamic Countries (NASIC) were also convened.

The aim of the conference was to promote the watchword that knowledge was becoming a major component in production processes, and that a new economic paradigm was emerging in which the most important factor was not the availability of capital, labour, raw materials or energy, but the intensive use of knowledge and information.

The conference also aimed to highlight that knowledge has become a pillar of the wealth and power of nations.

At the OIC level, the conference re-examined the actions that were required to invigorate; (a) Knowledge production, (b) Knowledge application and (c) Knowledge dissemination; in order to help OIC countries build knowledge societies and achieve rapid socioeconomic development.

The proceedings volume (ISBN 978-9957-412-22-7) of this conference has subsequently been published online.

**6.3.17. Science and Technology and Innovation for Sustainable Development in the Islamic World: Policies and Politics Rapprochement, Kazan, Tatarstan (Russia), August 2008**

Under the patronage of the President of the Republic of Tatarstan, the IAS convened its 16<sup>th</sup> Conference in Kazan, the capital of the autonomous Republic of Tatarstan in the Russian Federation, 25 to 28 August 2008. The conference addressed the theme of *Science, Technology and Innovation for Sustainable Development in the Islamic World: Politics and Policies Rapprochement*.

Alongside the conference, the IAS and the UNESCO organised a special symposium at Kazan State University on the 'History of Islamic Science, Technology and Innovation.'

The IAS 2008 Kazan Declaration pronounced that it was imperative that interest of the OIC science community, and ultimately the public, is rejuvenated in what has become known as the accepted narrative of the 'Rise and Decline of Islamic Science,' and perhaps to question what has been described as the classical narrative including some theories related to the subject.

The proceedings volume (ISBN 978-9957-412-19-7) of this conference has subsequently been published online.

**6.3.18. Higher Education Excellence for Development in the Islamic World, Ankara, Turkey, November 2006**

Under the patronage of the Prime Minister of Turkey, the IAS convened its fifteenth international science conference in Ankara, Turkey, during November 2006. The conference addressed the theme of *Higher Education Excellence for Development in the Islamic World*, and was organised and sponsored by the IAS; Bilkent University; the IDB; COMSTECH; OPEC Fund for International Development; ICESCO; and the International Conference on Higher Education (ICHE).

The conference, which coincided with the 20<sup>th</sup> Anniversary of the IAS, sought to engage the widest range of institutions and individuals involved in higher education in

Turkey, the region, the OIC; as well as some international agencies.

The IAS Ankara Declaration, adopted at the conclusion of the conference, highlighted that very few OIC universities were ranked among the world's top 500 universities. It emphasised that to attain and sustain quality in higher education, certain components are particularly relevant; notably careful selection of staff, continuous staff development and mobility, as well as student mobility within and between countries. A special mention was made in the declaration of the Bologna Process adopted by many European countries which represents a good model for harmonizing academic degree standards and quality assurance standards.

The proceedings volume (ISBN 978-9957-412-18-0) of this conference has subsequently been published online.

***6.3.19. Science, Technology and Innovation for Socioeconomic Development of OIC-Member Countries: Towards Vision 1441, Kuala Lumpur, Malaysia, 2005***

Under the patronage of the Prime Minister of Malaysia, the IAS convened its fourteenth science conference in Kuala Lumpur, Malaysia, during March 2005. The conference addressed the theme of *Science, Technology and Innovation for Socio-economic Development of OIC-Member Countries: Towards Vision 1441*.

At the conclusion of the conference, the IAS adopted the Malaysia-IAS 2005 Kuala Lumpur Declaration on *Science, Technology and Innovation for Socio-economic Development of OIC-Member Countries: Towards Vision 1441*. The declaration reiterated its support for *Vision 1441*, and its constituent elements, and proposed a number of strategies to help OIC countries to achieve the various targets outlined therein.

The proceedings volume (ISBN 9957-412-11-6) of this conference has subsequently been published online.



**6.3.20. *Energy for Sustainable Development and Science for the Future of the Islamic World and Humanity, Kuching, Sarawak, Malaysia, 2003***

Under the patronage of the Chief Minister of Sarawak, the IAS convened its thirteenth international conference in Kuching, over the period 29 September – 2 October 2003. The conference addressed the themes of *Energy for Sustainable Development* and *Science for the Future of the Islamic World and Humanity*. It was an open scientific activity in which over 250 participants representing over 25 countries participated.

The proceedings volume (ISBN 9957-412-08-6) of this conference has subsequently been published online.

**6.3.21. *Materials Science and Technology and Culture of Science, Islamabad, Pakistan, 2002***

Under the patronage of the President of Pakistan, the IAS convened its twelfth international conference in Islamabad (Pakistan), during October 2002. The conference addressed the themes of *Materials Science and Technology* and *Culture of Science*.

At the conclusion of the conference, delegates adopted the IAS Islamabad Declaration on Materials Science and Technology and Culture of Science. The declaration proposed the implementation of an R&D policy that addresses the link between technological advancement and societal response. It highlighted the impacts of globalisation and developments in Information Technology (IT), Biotechnology (BT), and Nanotechnology (NT) on the knowledge production systems.

On the theme of *Culture of Science*, the declaration emphasized that understanding the processes by which information concerning science and technology diffuses from the laboratory to the outside world is central to understanding social-transformation.

The proceedings book of this conference was published in 2004 (ISBN 9957-412-06-x) and has been published online.

**6.3.22. *Biotechnology and Genetic Engineering for Development in the Islamic World, Rabat, Morocco, 2001***

Under the patronage of Morocco's King Muhammad VI, the IAS convened its eleventh conference in Rabat (Morocco), in October 2001. The conference addressed the theme of *Biotechnology and Genetic Engineering*, and was hosted by the Academy of Morocco. A number of Moroccan and international organisations, including the COMSTECH and the OPEC Fund for International Development as well as the IDB and the ICESCO supported this international activity in which many local specialists participated.

The proceedings book of this conference was published in 2004 (ISBN 9957-412-07-8) and has been published online.

**6.3.23. *Information Technology for Development in the Islamic World, Tunis, Tunisia, 2000***

During November 2000, and under the patronage of H.E. the President of Tunisia, the Academy convened its Tenth Conference in Tunis, Tunisia; under the title of *Information Technology for Development in the Islamic World*.

The conference concluded with the publication of the IAS Tunis Declaration on Information Technology for Development in the Islamic World.

The declaration was subsequently presented to over 1,500 specialists and over 100 agencies throughout the Islamic world. The proceedings volume has also been published (ISBN 9957-412-03-5) and is available online.

**6.3.24. *Science and Technology Education for Development in the Islamic World, Tehran, Iran, 1999***

In July 1999, and under the patronage of the President of Iran, and then chairman of the OIC Summit, the Academy convened its Ninth Conference in Tehran, under the title of *Science and Technology Education for Development in the Islamic World*.

The policy document resulting from the conference in the form of the conference proceedings book was later published (ISBN 9957-412-00-7).

**6.3.25. *Water in the Islamic World: An Imminent Crisis, Khartoum, Sudan, 1994***

The IAS convened its eighth international conference in Khartoum (Sudan) in December 1994. The conference, entitled, *Water in the Islamic World: An Imminent Crisis*, was held under the patronage of the President of Sudan.

The conference aimed to assess the water security situation in the Islamic world and to develop innovative proposals for future activities in water resources management.

The proceedings of this conference have subsequently been published and marketed internationally, gradually becoming an extensively-cited reference on water resources issues in the Middle East.

**6.3.26. *Health, Nutrition, and Development in the Islamic World, Dakar, Senegal, 1993***

The President of Senegal hosted the seventh IAS annual conference in Dakar, (Senegal), 22-26 November 1993.

The conference, which was entitled, *Health, Nutrition, and Development in the Islamic World*, reviewed the state of population health in the various OIC regions, highlighted the major epidemics and diseases confronting the Islamic and developing worlds, and appraised national strategies adopted by countries in combating these diseases.

The proceedings of this conference have subsequently been published.

**6.3.27. *Environment and Development in the Islamic World, Kuala Lumpur, Malaysia, 1992***

The IAS convened its sixth annual conference in Kuala Lumpur, (Malaysia), from 10-14 August 1992.

The conference which was entitled *Environment and Development in the Islamic World*, was held under the patronage of the Prime Minister of Malaysia; Dr. Mahathir

Mohamad, and was designed to identify the global environmental issues of relevance to the Islamic world. It also addressed a number of concepts related to environment and development thereby identifying possible roles for NGOs that are active in this domain.

The proceedings of this conference have subsequently been published.

**6.3.28. *Science and Technology Manpower Development in the Islamic World, Amman, Jordan, 1991***

Under the patronage of Jordan's Prince El-Hassan Ibn Talal, the IAS convened its fifth international conference on *Science and Technology Manpower Development in the Islamic World*, in Amman (Jordan), during December 1991.

The proceedings of this conference have subsequently been published.

**6.3.29. *Technology Transfer for Development in the Muslim World, Antalya, Turkey, 1990***

Under the patronage of the President of Turkey, the conference on *Technology Transfer for Development in the Muslim World*, was held in Antalya, (Turkey), during November 1990.

The conference was organised by the IAS, by the Turkish Scientific and Technical Research Council (TUBITAK), the Islamic Foundation for Science, Technology and Development (IFSTAD), the Islamic Development Bank (IDB) as well as the UNESCO.

The proceedings of this conference have subsequently been published.

**6.3.30. *New Technologies and the Development of the Muslim World, Kuwait City, Kuwait, 1989***

Under the patronage of H.H. the Emir of Kuwait and the (then) Chairman of the Organisation of the Islamic Conference, the conference on *New Technologies and Development of the Muslim World*, was held in Kuwait during December 1989. The conference was jointly organised and

sponsored by the IAS and the Kuwait Foundation for the Advancement of Sciences (KFAS).

The declaration called for the acceleration of efforts to rejuvenate regional co-operation with the ultimate goal of establishing a Muslim Common Market, and for the removal of barriers constraining the movement of capital, scientific manpower and technology-based products among Islamic countries.

The proceedings of this conference have subsequently been published.

**6.3.31. *Co-operation and Co-ordination among Islamic Institutes, Amman, Jordan, 1989***

Under the patronage of Jordan's Prince El-Hassan Ibn Talal, the Academy and *Al Albait* Foundation, Jordan; jointly organised a seminar during June 1989, the theme of which was *Co-operation and Co-ordination among Institutes of Research and Studies and their Applications within the Framework of Islamic Thought*.

**6.3.32. *Science and Technology Policies for Self-Reliance in the Muslim World, Islamabad, Pakistan, 1988***

This was the major activity of the Academy for 1988. It was convened in Islamabad during December of that year and was sponsored by the IAS, COMSTECH, IFSTAD, as well as the government of Pakistan. It came in conformity with the Academy's programme to promote S&T concepts in the Muslim world.

The Academy issued a declaration at the end of the conference urging the *Ummah* to give the task of formulating S&T policies a high priority. The proceedings of this conference were published in a quality volume by the Academy and distributed internationally.

**6.3.33. Food Security in the Muslim World, Amman, Jordan, 1987**

Under the patronage of Jordan's Prince El-Hassan bin Talal, IAS Founding Patron, the Academy convened its first seminar in Amman during 1987 on *Food Security in the Muslim World*.

The proceedings of the seminar and a three-language summary were later published and distributed by the IAS, and copies were presented to prominent world figures, as well as Ministers of Agriculture throughout the Islamic world.

**6.3.34. Future Conferences**

The IAS maintains contact with a number of countries regarding the hosting of future IAS conferences.

The 24<sup>th</sup> annual conference is expected to be held in Karachi in Pakistan 2022 and the 25<sup>th</sup> will be held in Amman.

**6.4 The Medical Journal of the IAS**

The *Medical Journal of the Islamic World Academy of Sciences*, which first appeared in August 1988, is a quality publication that has established itself as a major scientific publication in the Islamic world and has been granted an ISSN number (ISSN 1016-3360). It is a forum for scientists and technologists in developing countries through which they can get their research work published.

The Journal in the medical field, which is published in Turkey and distributed internationally, was launched with the help of the Kuwait Foundation for the Advancement of Sciences (KFAS), and has since, received some grants from the Academy Secretariat and COMSTECH. In the last year the IAS was the sole source of funding.

An electronic version of the Medical Journal was subsequently launched on the Internet where it has the URL address of [www.medicaljournal-ias.org](http://www.medicaljournal-ias.org).

## **6.5 Website ([www.iasworld.org](http://www.iasworld.org))**

The IAS undertook the task of constructing its own website, which came into being in August 1997. The planning and part of the design of the site was done in-house.

The aim of this activity is to provide information about the Academy, its Fellows, activities and publications to the scientific communities, scholars and the public at large. Such a site would enable the Academy to increase its visibility, establish contact with a number of donor agencies and to interact more efficiently with scientists throughout the world.

In 2009 after developing and designing it in-house, the IAS launched its new website ([www.iasworld.org](http://www.iasworld.org)). The new website contains basic information about the IAS, its Fellows, activities and publications. It also contains a special section of online digital resources as well as a dedicated IAS YouTube channel that archives many of the lectures given at IAS conferences in the past.

In 2021 the IAS Secretariat commissioned a professional designer and programmer to reshape the website to enable users to surf its contents easily. The design is expected to denote newly introduced icons of new additions such as the digital library and directory of IAS Fellows addresses.

## **6.6 Establishing Open Access Digital Library**

The IAS will be establishing digital library that could be freely accessed. The library will contain:

- a) All publications of the Academy including proceedings of conferences, books, pamphlets and newsletter issues.
- b) A link to all issues of the IAS Medical Journal.
- c) Fellows' donated e-books or publications.
- d) Outsourced free books.
- e) Links to significant publications of the United Nations and other international institutions.

## 6.7 Social Media

The IAS in its attempt to gain visibility had established a page on Facebook and YouTube channel. These are to be used to disseminate information and broadcast conference's presentations and talks in webinars.

## 6.8 Publications

### 6.8.1 Proceedings

In its efforts to disseminate scientific information, the IAS publishes the proceedings of the annual conference online and in hardcover. Recently, however to cut the expenses only digital format will be published online. Such a process ensures that the papers that are presented at the conferences are made available to wider stakeholder including scientists and decision-makers that are concerned with Third world issues.

The proceedings of the first founding conference of the academy and the 2<sup>nd</sup> conference were published in hard cover.

In 2014, the Academy published the proceedings volume of the 2008 Conference on *Science and Technology and Innovation for Sustainable Development in the Islamic World: Policies and Politics Rapprochement*.

Since 2016, the IAS started to publish the proceedings of the IAS Conference and seminars online via the IAS website.

The Proceeding of the 22<sup>nd</sup> IAS Conference on *Landscape of Science, Technology and Innovation in the Islamic Countries*, will be published online soon.

### 6.8.2 Books

#### (a) General

In its efforts to address important topics relevant to scholars and thinkers in OIC countries, the Academy often undertakes the task of publishing books by eminent Muslim scientists and intellectuals.



One such undertaking has been the publication of a book entitled, *Islamic Thought and Muslim Modern Science*, by the late Dr. M A Kazi, IAS Founding President and Fellow. The book represents the author's view of the relationship between Islam and science in today's world. Dr. Kazi authored another book entitled *Qur'anic Concepts and Scientific Theories* which is also published by the Academy.

Back in 1983, the National Science Council of Pakistan and Hamdard Foundation published what was to become a very famous book. The name chosen by the then editor Hakim Said for the book was "Personalities Noble." The book contained brief profiles of 26 towering scholars of the golden age of Islam. Demand on the book was such that within a few years only a few rare copies were still in existence.

Realising the importance of the book, and appreciating its value as a reference, the IAS published a second revised edition of "*Personalities Noble*," in both English and Arabic, during 2000.

To disseminate knowledge on the scientific achievements of Islamic countries especially during the Golden Age of Islam, the IAS published in 2013 a book that illustrate the contribution of Islamic civilization in scientific discoveries. The book is written in Arabic language.

The Academy has exhibited its various publications at the various book fairs that were organised in Jordan and in the Middle East, including the Cairo, Abu Dhabi, Sharjah, and the Beirut International Book Fair as well as the book fairs organized alongside the IAS conferences.

*(b) Islamic World Academy of Sciences Declarations Booklet*

The conferences organised by the IAS generally aim to engender acknowledgement by the political leadership of the OIC of the inextricable link between advancement in S&T and socioeconomic development and to provide OIC Heads of State with a scientific roadmap for their national development in the context of the discussed topics.

This publication is a compilation of the various statements (declarations) that were issued by the IAS at the end of each conference starting with the 1987 IAS Conference up to 2005.

*(c) Islamic World Academy of Sciences Outreach Seminar Booklet*

Some academies of sciences, such as the IAS, often organise outreach activities to which politicians, diplomats, academics and civil servants working at scientific institutions are invited. Such activities aim to expose the attendees to the latest scientific and development concepts as well as contemporary ideas on the attainment of socio-economic development. Such S&T fora often reiterate and show the value of science as a means of knowledge generation.

This publication contains the presentations that were made at an outreach seminar organised by the Islamic World Academy of Sciences at the Royal Scientific Society in Amman, Jordan, during December 2004.

*(d) Intellectual Property Rights: An Introduction for Scientists and Technologists*

An eminent Fellow of the Islamic World Academy of Sciences, and immediate past-President of the Egyptian Academy of Sciences the late Prof. M. B. E. Fayez FIAS, volunteered to prepare this specialised yet lucid document on the rather complex and topical issue; namely Intellectual Property Rights.

*(e) Reverse Engineering: The Permissible but not Well-Recognized*

Another booklet has been prepared by Prof. M. B. E. Fayez FIAS, relates to scientific research and to development of the relevant results to the level that enables their useful applications. Reverse engineering is seen as an effort by scientific researchers to learn the facts that lie behind the

commercial success of a certain product. The booklet was published in 2010.

(f) *'The Discoveries in the Islamic Countries'* *الاكتشافات العلمية في الحضارة الاسلامية*

In 2013, the IAS published the Arabic-language version of the book 'Les decouvertes en pays d'Islam.' The English-language version of the book was earlier published by the International Science, Technology and Innovation Centre for South-South Cooperation under the Auspices of UNESCO (ISTIC) to disseminate knowledge on some of the scientific achievements in the Islamic civilisation, especially during the Golden Age of Islam.

(g) *The Essentials of Science, Technology and Innovation Policy*

In 2013, the IAS published the third print of a book by Tan Sri Dr. Omar Abdel Rahman FIAS under the title *The Essentials of Science, Technology and Innovation Policy*. The book is a major reference on the topic and a qualitative addition to the available references in the OIC on the subject. The book delineates aspects needed to establish roadmap and agenda for functional STI ecosystem.

### **6.8.3 Newsletter**

The Academy, through its Secretariat, regularly publishes the *Newsletter* of the Islamic World Academy of Sciences.

This widely distributed publication which goes to more than 2500 addresses worldwide aims to publicise the various activities the Academy undertakes, and to put across the Academy's short and long-term programmes. It also contains general news about the Academy, its Fellows, and staff. The Newsletter temporarily ceased to exist for six years.

In 2020 the IAS secretariat reactivated the IAS Newsletter with emphasis on current issues related to Science, Technology and Innovations (online).

#### **6.8.4 Overview of the Islamic World Academy of Sciences**

The Secretariat of the Academy publishes, every two years, an *Overview* of the Academy summarising the programme of the Academy, its activities and detailing the various Academy procedures.

This publication also provides information about the background to the founding of the Academy and lists its achievements, particularly in the area of international co-operation.

#### **6.8.5 Other Publications**

Upon the request of COMSTECH, and under its sponsorship, the Academy published, for more than six years, the Arabic version of COMSTECH's *Islamic Thought and Scientific Creativity*, the high quality quarterly publication.

The IAS published a total of 20 issues over a five-year period.

The publication of this journal was undertaken with the support of the Amman-based Royal Academy for Islamic Civilisation Research, *Al Albait Foundation*.

### **6.9 Capacity Building**

#### **6.9.1 General**

In its endeavours to contribute to building the S&T capacity of OIC-member countries, the IAS regularly organises or co-sponsors qualitative training programmes in the various countries.

The Academy adopts a dynamic policy to activities of this nature and tries to assist other organisations that undertake such programmes through the provision of experts or financial assistance whenever possible.

#### **6.9.2 Laser Physics and Applications**

The IAS and COMSTECH, in association with the University of Tunis El Manar, and the African Laser Atomic and Molecular Physics Network (LAM), organized the Sixth

International Workshop on Laser Physics and its Applications, in Tunis, Tunisia, during December 2002. The purpose of the activity was to introduce the new applications of lasers and discuss the progress of laser physics, lasers in medicine, environment and telecommunications.

Scientists, physicists, researchers, engineers, and optical industrialists from more than 40 countries participated in this activity

The workshop was co-sponsored by: the Abdus Salam International Centre for Theoretical Physics (ICTP), Italy; the Swedish International Development Cooperation Agency (Sida), Sweden; and the Ministry of High Education of Tunisia.

The IAS, along with COMSTECH, also helped in the convening of the *School of Molecular Physics*, which was held in Tunis (Tunisia) during December 2005, with Prof. Zohra Benlakhdar FIAS, UNESCO L'Oreal Laureate, as chief organiser.

### ***6.9.3 Training programme entitled Characterizing and Assessing Research Quality for Scaling the Impact for Innovation and Development***

IAS and AARINENA organized a virtual training programme on *Characterizing and Assessing Research Quality for Scaling the Impact for Innovation and Development*. The audience of the training were researchers, professors, graduate students, project and programme officers, and policy makers in OIC countries.

### ***6.9.4 COMSTECH-IAS mobility grant***

The COMSTECH and IAS are embarking on establishing a fellowship grant to enable young scientists from LDC OIC countries to do research in Centers of Excellence in Islamic countries.

## **6.10 Culture of Science Initiative (CSI)**

Science cannot flourish without being adequately funded by civil society institutions including the public, private and the non-governmental and inter-governmental sectors. Science in turn should better respond to the needs of society and people. Governments and NGOs such as the IAS should create innovative national and international funding mechanisms in support of science.

It is against such a backdrop that the Islamic World Academy of Sciences launched its Culture of Science Initiative or CSI. That is to achieve a gradual revival and rejuvenation of interest in science and technology in the Islamic world.

The IAS however realises that this is long-term activity, and that the Islamic world is a long way off from prioritizing STI in their fiscal arrangements.

## **7 INTERNATIONAL RELATIONS**

### **7.1 General**

A primary function of the Academy is to act as a Pan-Islamic affiliating body to the relevant international organisations. Through this, Muslim scholars can have a channel of communication, through the Academy, with different international academies and organizations.

At the level of the OIC, examples of the co-operation that exists between the Academy and other institutions are outlined below:

### **7.2 Co-operation with COMSTECH**

The Islamic World Academy of Sciences and COMSTECH have had solid relations, since COMSTECH helped to create the Academy in 1986, in compliance with the OIC Summit recommendations.

Over the years, COMSTECH has, along with the host country (Jordan), supported the Academy financially, and sponsored a number of S&T capacity building activities that were organised by the IAS.

The IAS and COMSTECH regularly exchange information on programmes and act, each within its catchment area, to promote S&T activities and encourage OIC countries to increase their S&T expenditure.

COMSTECH also provided a small annual grant to the IAS Medical Journal, for few years. It also sponsored the publication of a number of books by the IAS, and had contributed to the budget allocated by the IAS for the Ibrahim Memorial Award, which is awarded biannually to outstanding medical researchers from the Islamic world. COMSTECH also co-sponsored some IAS Conferences.

Under the patronage of H.R.H. Prince El-Hassan Ibn Talal, IAS Founding Patron, and in cooperation with COMSTECH the Academy convened a conference on Biodiversity on 1<sup>st</sup> of April 2021.

COMSTECH and IAS are embarking on establishing a fellowship grant to enable young scientists from LDC OIC countries to visit Centers of Excellence in Islamic countries.

The proposed program entails training of the young scholars of the sub-Saharan African OIC member states in frontier fields. Training and capacitating the member states will have far reaching implications. Trained individuals shall be able to take part in various science diplomacy and research initiatives and hence would add up to the community of researchers and scientists striving to develop resilience against complex real world problems and make the planet a better place to live.

### **7.3 Co-operation with the IDB**

The IDB had been helping to finance Academy conferences. It used to delegate its own specialists to present papers describing its activities within the scope of the theme of the annual IAS Conference.

The IDB has provided some support towards the convening of the 2017 IAS Conference that was organised in Konya, Turkey.

#### **7.4 Co-operation with the UNESCO**

As the IAS is a non-profit NGO it is working towards joining (become affiliated into) the UNESCO Communities. With this in mind, the IAS contributed to the successful convening of the UNESCO History of Islamic Science, Engineering and Technology (HISSET) Symposium at UNESCO Headquarters in 2006. The IAS has subsequently helped in the convening of the second and the third event in the series (ISSTI III) which were held in Kuala Lumpur and Kazan, respectively. The fourth event was held in Kuala Lumpur (Malaysia) in 2010, also with the help and support of the IAS; whereas ISSTI V was organised by the IAS alongside its conference which was held in Qatar during October 2011.

Moreover, the IAS, during March 2009, participated in the launch of the UNESCO International Science, Technology and Innovation Centre for South-South Cooperation (ISTIC) in Kuala Lumpur and has implemented a number of programmes with this newly founded centre since.

Furthermore, the IAS - through Prof. Adnan Badran FIAS and Former DG-IAS - was commissioned to author the 'Arab States Chapter' of the UNESCO Science Report 2010.

The IAS undertook the revision on the Arabic edition of the UNESCO Science Report: Towards 2030 which was subsequently launched in February 2019.

In July 2020, the IAS participated in the UNESCO online consultation about the Ethics of Artificial Intelligence for the purpose of drafting a global standard setting instrument for the ethics of artificial intelligence.

The DG-IAS attended the UNESCO Open Science intergovernmental meetings as an observer, the meetings were held on 6-7 May 2021 and 10-12 May 2021.



An intervention was made by the DG-IAS during the intergovernmental special committee meeting related to the draft UNESCO recommendation on Open Science.

On 11 June 2021 the DG-IAS attended the virtual meeting of UNESCO where the UNESCO Science Report 2021 was launched.

### **7.5 Co-operation with the Islamic World Educational, Scientific and Cultural Organization ICESCO**

In its effort to establish scientific and academic relations with similar Islamic organisations, the Academy signed a co-operation agreement with the Islamic Educational, Scientific, and Cultural Organisation (ICESCO), in 1989.

IAS participated in the virtual meeting of Water Security for Peace and Development in the Islamic World: Preparing for the 9<sup>th</sup> World Water Forum in Dakar in 2021.

Since, the Academy has liaised extensively with the ICESCO, the participation of which was noticeable in a number of IAS Conferences.

### **7.6 Co-operation with TWAS**

The Academy signed a co-operation agreement with The World Academy of Sciences (TWAS) some years ago. That was a first step towards enhancing co-operation between these two international academies, which have been in close liaison recently on their scientific activities. The IAS often joins TWAS at its scientific meetings and both academies exchange information in the context of G77, as well as TWNSO meetings, especially as the IAS has been a member of the Third World Network of Scientific Organisation (TWNSO) for a number of years.

### **7.7 Co-operation with the OIC General Secretariat**

Upon a proposal from Jordan and with the support of Prof. Ekmeleddin Ihsanoglu, was then the Secretary General OIC, the Islamic Council of Foreign Ministers (ICFM) approved, at

its June 2006 meeting which was held in Baku (Azerbaijan), the affiliation of the IAS to the OIC system. This newly acquired status for the IAS would provide it further direct access to OIC Summit and the Heads of State of the OIC and other OIC-affiliated organizations.

In 2013, Prof. Ekmeleddin Ihsanoglu, Former Secretary General OIC attended the 19<sup>th</sup> IAS conference which was held in Dhaka, May 2013.

The IAS has taken part in a number of OIC activities including the OIC Summit Conference which was held in Istanbul (Turkey) during April 2016, as well as the 1<sup>st</sup> OIC Summit on Science and Technology which was held in Astana (Kazakhstan), during September 2017.

In August 2020, the IAS provided the OIC a timely updates on the IAS activities to be included in the STI Agenda 2026. The report were shared with OIC General Secretariat and uploaded on the COSMTECH website.

Also in August 2020, the IAS sent a progress report of the IAS activities during the period February – August 2020 to be included in the report of Secretary General, OIC to the 47<sup>th</sup> Session of the Council of Foreign Ministers (CFM) which was held in Niamey, Republic of Niger.

The DG-IAS attended the 2<sup>nd</sup> OIC Summit on Science and Technology under the theme “Science, Technology and Innovation: Opening New Horizons” on 16 June 2021. It was a virtual summit under the Chairmanship of the United Arab Emirates. The DG-IAS also attended the preparatory meetings of the Senior Officials of the OIC institutions for the Summit.

The IAS presented reports that summarised its various activities in the domain of science and technology at the level of the OIC, and its vision for the future. The IAS has moreover submitted proposals on a number of science and technology activities.

## **7.8 Co-operation with the InterAcademy Partnership (IAP)**

In order to interact fully with 100 or so national and international academies of sciences the world over, the IAS

joined the Inter-Academy Partnership, which is a global network of science academies. The IAS was elected to join the IAP at latter's General Assembly Meeting which was held in Alexandria, Egypt, during December 2006.

A number of IAS-IAP activities could be implemented in order to bring to the forefront the role of academies of sciences as independent advisory science *Think Tanks* in their respective catchment areas.

The IAS participated through the IAS-DG in the International Symposium on “*Refugees and Migrants: A Global Problem or an Asset,*” which was held in Ankara, Turkey in 2016, and presented a paper therein on The SDGs, STI, Conflicts and Migration: Pivotal Links in the Middle East Setting.

In August 2020, IAP lunched the IAP COVID-19 Expert group which is charged with responding to inquiries related to ongoing COVID-19 pandemic across a broad range of health, social, environment and other direct and indirect consequences of the pandemic, in this regards the IAS circulated the announcement to the IAS fellows.

In December 2020, the IAS endorsed the statement on “*Protection of Marine Environment*” prepared by IAP.

In January 2021, the IAS endorsed the statement on “*ongoing opportunities and challenges in regenerative medicine*” prepared by IAP.

The IAS participated in the IAP Global Webinar on Countering Vaccine Hesitancy, which was held on 23 March 2021, the webinar was designed to support academies in contribution to their national vaccination efforts.

In March 2021, the IAS circulated the IAP announcement on *Reducing the impact of COVID-19 on inequalities in higher education: A call for action to the international community*. That communique was issued in cooperation with the Global Young Academy GYA.

In May 2020, IAP circulated amendments on its Statutes and asked for feedback from member academies. IAS reviewed the Statutes amendments and sent suggestions and feedback on “Membership of a Development and Programme

Committee”. The IAP Statutes has been approved in May 2021.

In June 2021 the IAS endorsed the statement of the IAP on “the Implication of Urbanization in Low and Middle Income Countries”.

### **7.9 Co-operation with the Inter Academy Medical Panel (IAMP)**

The Inter Academy Medical Panel on Global Health Issues (IAMP) is an association created by the world’s academies of medicine and academies of sciences or engineering having members from the health sciences for the purpose of working together through bilateral, regional and worldwide. The IAS was elected to join the IAMP at latter's General Assembly Meeting which was held in Kuala Lumpur, Malaysia, during March 2010.

Since, the IAS has circulated many of the statements issued by the IAMP and distributed copies of the IAS Medical Journal to the various member academies of the IAMP.

### **7.10 Co-operation with the International Union of Academies (IUA)**

During November 2007, the IAS was elected to the membership of the International Union of Academies (IUA) (Union Académique Internationale). This is the oldest and largest federation of academies and learned societies in the world. Based in Brussels, it was established in 1919.

During January 2014, the IAS co-organised an international conference in Erlangen (Germany) under the title *The Impact of Arabic Sources on Divination and the Practical Sciences in Europe and Asia* in association with the International Union of Academies (IUA).

The IAS, together with the IUA, and the Royal Institute for Interfaith Studies (RIIFS), organized an international conference on ‘Islamic Sciences in the Western World

(Middle Ages-Renaissance) Exchanges, Transmission, Influence,' April 2017, at the University of Petra in Amman.

### **7.11 Co-operation with the InterAction Council (IAC)**

The InterAction Council was established in 1983 as an independent international organization to mobilize the experience, energy and international contacts of a group of statesmen who have held the highest office in their own countries.

In May 2013, IAS President presented a keynote address at the 31<sup>st</sup> Annual Plenary Meeting of the Interaction Council, 9-11 May 2013, Manama, Bahrain, under the title *Uprisings in the Arab World: The Reality beyond the Failure of Politics and Policies*.

During November 2013, the IAS-DG contributed a paper to the InterAction Council publication entitled *The Arab Pseudo-Spring? A Snapshot of the Underlying Politics and Economics, and the Challenge of Water Insecurity*.

On 20 October 2014, the Council launched its latest publication, "Water, Energy, and the Arab Awakening." This book is the third in the Council's "Global Agenda" series and the second book the Council has published in partnership with the United Nations University Institute of Water, Environment and Health (UNU-INWEH).

The IAS also participated in the IAC meeting which was held in Baku, Azerbaijan, March 2016; as well as the High Level Expert Group Meeting of the IAC which was held in Guiyang, China, 2016.

The President and DG of the IAS attended the 34<sup>th</sup> Annual Plenary Meeting of the InterAction Council which was held in Dublin, Ireland, 2017.

The IAS participated in the 35<sup>th</sup> Annual Plenary Meeting of the InterAction Council which was held in Beijing, china, 2018.

## **7.12 Co-operation with Academies of Sciences**

The IAS has signed Memorandum of Understanding with each of the World Academy of Sciences (TWAS), Pakistan Academy of Sciences (PAS), The National Academy of Sciences of the Republic of Kazakhstan, the Korean Academy of Science and Technology (KAST), and the Turkish Academy of Sciences (TÜBA). These agreements lay the foundation for long-term co-operative relationships between IAS and these academies.

Contacts with the US National Academy of Sciences have been ongoing for over fifteen years, resulting in the participation of top US NAS representatives in some IAS activities. Moreover, the US NAS has regularly nominated its Foreign Secretary to participate in IAS conferences.

The IAS has been actively supporting the Palestine Academy of Science and Technology (PALAST) through facilitating the participation of PALAST officials in the various scientific activities in the Middle East, as well as providing help and advice to this sister academy on a regular bases.

The Bangladesh Academy of Sciences played an important part in organising the 19<sup>th</sup> IAS conference which was held in Dhaka, Bangladesh, and a number of the BAS Fellows took part in the conference.

The Turkish Academy of Sciences (TÜBA) helped in organizing the 21<sup>st</sup> IAS conference which was held in Konya, 2017, and the IAS signed Memoranda of Understanding with TÜBA during the conference.

In 2021, the IAS is convening its 23<sup>rd</sup> Conference in cooperation with the Hassan II Academy for Science and Technology (Morocco) in Rabat, Morocco.

## **7.13 Association of Agricultural Research Institutions in the Near East and North Africa (AARINENA)**

In order to achieve fruitful and constructive cooperation between the (AARINENA) and the (IAS) in the common

areas (research, training and any agreed topics) a cooperation agreement has been signed by DG-IAS and the Secretary General- AARINENA.

The two parties agreed to exchange experiences and provide technical and economic consultancy services and technical support in matters of mutual concern and encourage joint cooperative activities. As a result of this agreement IAS conducted a series of webinars in conjunction with AARINENA to discuss issues related to Agricultural production and food Security and safety under the COVID-19 pandemic.

The IAS organized series of webinars on “Agriculture Production and Food Security under COVID-19 Pandemic” in conjunction with the Association of Agricultural Research Institutions in the Near East & North Africa (AARINENA), starting October 2020 and ended on January 2021.

In January 2021 the IAS and AARINENA organized a virtual training programme via IAS platform, under the title: *Characterizing and Assessing Research Quality for Scaling the Impact for Innovation and Development*. The audience of the training were researchers, professors, graduate students, project and programme officers, and policy makers in OIC countries.

#### **7.14 Union for the Mediterranean (UfM)**

In September 2020, DG-IAS has been identified as a relevant expert in climate change by the UfM to be Member of the Technical Experts Group on Research and Innovation of the Union for the Mediterranean. In October 2020, the DG-IAS participated in the UfM Expert Group on Research and Innovation virtual meeting.

The DG-IAS attended all the meetings of the UfM Technical Experts Group in the domain of climate change and presented reports and articles on the theme.

*A Theory of Change and Impact Pathways in Programme and Innovation Management Cycles for the Union for the*

*Mediterranean Priorities* was finally drafted by expert groups and was adopted in the 27<sup>th</sup> meeting of the UfM.

### **7.15 The International Science Council (ISC)**

In May 2021 the IAS become “Affiliated Member” in the International Science Council; being a member in the ISC will help the IAS to create and maintain partnership or membership with other academies, institutions/organizations at ISC. This partnership allows the IAS to exchange publications and information and run joint activities or programs.

### **7.16 Sustainable Health Equity Movement (SHEM)**

In July 2020, The IAS joined the Sustainable Health Equity Movement that gathers people and networks from all regions, cultures and ideologies around the ethical principle of the universal right to health, bringing the ethical principle of equity to the global fight against COVID-19 and to the new world order emerging from it. In addition, the IAS participated in the international webinar entitled “Sustainable Health Equity Movement: “The Ethical Principle of Equity in the Response to the Pandemic and Beyond”.

The IAS sent suggestions to the SHEM Steering Committee and those suggestions were consented by the Steering Committee. Upon a request from the Steering Committee, the Director General delivered an intervention on his proposals to the SHEM General Assembly during a meeting held in July 2021.

### **7.17 International Outreach**

During 2009, IAS-DG as well as a number of IAS Fellows were invited to contribute to the report published by the US-Islamic World Forum which was entitled, ‘A New Millennium of Knowledge: The Arab Human Development Report on Building a Knowledge Society, Five Years On’.



Since then, the IAS has helped in organising two follow-up conferences on the theme of ‘Building an Arab Knowledge Society’ that were held in Alexandria in June and December 2010.

Moreover, the IAS participated in a special session of the 2012 US-Islamic Forum on ‘Water Security and Cooperation in the Middle East and North Africa (MENA)’ which was held in Doha (Qatar), 29-31 May 2012.

The IAS hosted a meeting of executive Council of the prestigious Rosenberg International Forum on Water Policy in Amman during January 2012, and acted as lead local agency responsible for organising the 8<sup>th</sup> International Rosenberg Forum which was held in Aqaba (Jordan) during March 2013, in which the IAS President, the IAS Treasurer and IAS-DG presented main papers.

The IAS participated in the 9<sup>th</sup> International Forum on Water Policy which was held in Panama City in 2016.

The IAS participated in the Rosenberg International Forum on Water Policy which was held virtually on 7 October 2020, and in the Rosenberg International Webinar on Earth Observations, Artificial Intelligence and Data Science in Water Management which was held on 2 December 2020.

### **7.18 Pick of the Week**

The IAS publishes ‘Pick of the Week,’ which is usually a news item about science and technology in the world and particularly in the OIC. Chosen by the IAS-DG, this item is sent regularly to IAS Fellows and other subscribers included in the IAS database.

## **8 ACADEMY FELLOWSHIP**

### **8.1 General**

IAS Fellows come from 30 nationalities, and represent numerous educational, scientific as well as research and

development institutions. The number of Fellows as of July 2021 is 102.

Membership of the IAS is made up of Founding and elected Fellows. They are eminent scientists with sizeable contributions to the development of science and technology and related topics, in their countries and internationally. The Secretariat of the Academy organises an election every year through which existing Fellows nominate and then elect new members to the Academy Fellowship. Since its establishment in 1986, 118 Fellows have been elected through annual postal ballots, the results of which are announced at the end of year General Assembly.

## **8.2 Honorary Fellowship**

The Honorary Fellowship is awarded by the Academy to eminent personalities outstanding in their fields, who have promoted science and technology in the Islamic world, and internationally. As of July 2021, the IAS had nine Honorary Fellows who come from Kuwait, Turkey, Malaysia, USA, Kazakhstan, Tatarstan (Russian Federation) and Qatar.

## **8.3 Corporate Members**

In 2013, the IAS General Assembly adopted the IAS Council's proposal to incorporate the 'Corporate Membership' category of Fellowship into the relevant IAS By-Laws.

In 2014, the IAS invited a number of companies to become corporate members; the Jordan Islamic Bank and the Jordan Phosphate Mines Company were the first to join the IAS as Golden Corporate Members. University of Petra (Jordan) joined in 2016.

## **9 VISION 1441**

The 2003 OIC Summit adopted a sensible yardstick to measure development in the domain of science and technology to which people can relate; namely Vision 1441.

Vision 1441 is a set of goals, a number of targets and performance indicators relating to the state of science and technology that OIC countries are aiming to achieve by the year 2020. They include:

- (1) Raising the expenditure on R&D to 1.4% of GNP by the year 2020 (1441 Hijri);
- (2) Raising the number of SREs (scientists, researchers and engineers) to 1441 per million population by the 2020; and
- (3) Raising the scientific output of the Islamic world to 14% of the world total.

The impact of Vision 1441 lies in two main dimensions:

- (a) By incorporating quantitative and time-bound targets, the Vision demands specificity in development actions and emphasize systematic measurement; and
- (b) By defining the goals in terms of outcomes - as distinct from inputs and outputs - it draws attention to the multi-sectoral determinants of outcomes.

These new elements may warrant changes in some practices and programs adopted by countries.

Vision 1441 manifests a commitment by OIC-Member countries - rich and poor - to doing all they can to achieve a reasonable level of S&T advancement.

The IAS has been promoting Vision 1441 actively, and has organised a number of meetings on the subject that have been designed particularly to encourage the various OIC countries to implement policies to achieve the parameters set out in Vision 1441, and is also actively involved in the OIC Task Force on Vision 1441.

With the onset of 1441 on 31 August 2019, and despite some successes in the domain of STI in a handful of countries, the vast majority of countries in the Islamic world failed to achieve the parameters stipulated in Vision 1441. This is a serious cause for concern and calls into question the effectiveness of STI ecosystems and indeed development governance in OIC countries and their viability in stimulating socioeconomic development in OIC countries.

The importance of Science and Technology was once again reiterated by the 2<sup>nd</sup> OIC Summit on Science and Technology on “Science, Technology and Innovation: Opening New Horizons” which was held on 16 June 2021.

## Appendix A

### **Declaration of the 22<sup>nd</sup> Islamic World Academy of Sciences Conference on *Landscape of Science, Technology and Innovation in the Islamic Countries.***

adopted by 22<sup>nd</sup> IAS virtual Conference  
1 December 2020

1. We the Fellows of the IAS and participants of the IAS 22<sup>nd</sup> virtual Conference entitled *Landscape of Science, Technology and Innovation in the Islamic Countries* at December 1<sup>st</sup>, 2020 have gathered to discuss and share STI experience in OIC Countries.
2. We express our thanks to the President of Pakistan and H.R.H Prince El-Hassan bin Talal, for their patronage of the Academy and their encouragement and sustained interest in IAS activities.
3. We call upon Islamic countries to uphold the various objectives of the Organization of Islamic Cooperation specially those related to science, technology and innovation and formulate STI policy that can deliver national STI agenda.
4. We urge our governments to increase investments in science, technology and innovation and in outreach activities to effect transfer of science and technology to speed up socioeconomic wellbeing of our countries.
5. We urge OIC countries to enhance networking and cooperation among scientists across the Islamic World and facilitate outreach activities.
6. We encourage OIC countries to implement and articulate a functional STI policy that can identify inter and intersectional priorities and consolidate human, physical

- and financial resources within each country's backdrop of social, cultural, political and religious heritage.
7. We affirm that for STI agenda to achieve its objectives, the STI policy shall be inclusive and capable of enabling working ecosystem that insure participation of all stakeholders.
  8. We affirm the importance of governmental commitment towards strengthening national STI capacity and capability that encompass human resources, research and development institutions, science parks and incubators, legislation, incentives, and funding.
  9. Provide a STI governance framework that delineates all aspects of STI management including policy integration, STI advisory board, STI planning and coordination, research and technology commercialization, framework for cooperation, collaboration and partnerships.
  10. We urge our states to monitor and review periodically their STI policies, STI agenda and action plans at national and regional levels to gain insight and share experience in best practices to set priorities, implement programs and evaluate progress.
  11. We underscore the importance of private sector partnership and international collaboration and science diplomacy in performing tasks of STI agenda.
  12. We acknowledge that for socio-economic development to be achieved, STI implementation action plan should take into consideration the importance of instilling science and scientific method into the education system and involving the parliaments by establishing parliamentary standing committee on STI.
  13. OIC countries are urged to adapt initiative of partnership by forming STI consortium among the OIC states to rectify deficiencies and maximize the collective strength of the *Ummah* in science and technology or at least be more conscious about the need for collective cooperation and collaboration amongst scientists in our countries.

14. Government of OICs are urged to nurture and develop STI ecosystem by providing STI physical and soft infrastructure, encourage and enrich a vibrant ethical scientific community and insure participation of private sector in STI evolution.
15. We urge the OIC Countries to designate centers of excellence in disciplinary and interdisciplinary science to form networks that can initiate collective R&D and training for young scientists in priority research areas for development.

**LASTLY, THE ISLAMIC WORLD ACADEMY OF SCIENCES (IAS):**

Extends its appreciation and gratitude to all organizations and institutions that extended sponsorship for this conference, these are; Arab Fund for Economic and Social Development (AFESD), Kuwait Foundation for the Advancement of Science, Petra University, Cairo Amman Bank, The Inter-Islamic Network on Water Resources Development and Management (INWRDAM), Higher Council for Sciences and Technology (HCST), and the Jordan Islamic Bank.

## **Appendix B**

### **PATRONS OF THE ISLAMIC WORLD ACADEMY OF SCIENCES**

**His Excellency the President of the Islamic Republic of Pakistan.**

**His Royal Highness Prince El-Hassan bin Talal of the Hashemite Kingdom of Jordan, Founding Patron.**

### **HONORARY FELLOWS OF THE ISLAMIC WORLD ACADEMY OF SCIENCES**

(in alphabetical order)

Mr **Fouad Alghanim**, President, Alghanim Group, Kuwait.  
Prof. Ekmeleddin **Ihsanoglu**, Former OIC Secretary General, Turkey.  
Tun Pehin Sri Haji Dr. **Abdul Taib Mahmud**, the Governor of Sarawak (Yang di-Pertua Negeri) of Sarawak, State of Sarawak, Malaysia.  
Dr. **Adnan M. Mjalli**, Chairman, MIG, USA.  
His Excellency Dato' Seri Dr. **Mahathir Mohamad**, Former Prime Minister of Malaysia.  
Prof. **Ferid Murad**, 1998 Nobel Laureate (Medicine), USA.  
His Excellency **Nursultan Abishevich Nazarbayev**, Former President of the Republic of Kazakhstan.  
H E Mr **Mintimer Shaimiev**, Former President of the Republic of Tatarstan/Russian Federation.  
His Excellency Sheikh **Hamad Bin Jassim Bin Jabr Al Thani**, Former Prime Minister of Qatar, Qatar.

### **CORPORATE MEMBERS OF THE ISLAMIC WORLD ACADEMY OF SCIENCES**

The Jordan Islamic Bank, Jordan.  
Jordan Phosphate Mines Company, Jordan.  
Petra University, Jordan.



**LIST OF FELLOWS OF THE  
ISLAMIC WORLD ACADEMY OF SCIENCES  
(1 JULY 2021)**

1.	Prof. Mohammad <b>Abdollahi</b>	Iran	Toxicology/Pharmacology
2.	Prof. Zakri <b>Abdul Hamid</b>	Malaysia	Genetics
3.	Prof. Omar <b>Abdul Rahman</b>	Malaysia	Veterinary Medicine
4.	Prof. Bobomurat <b>Ahmedov</b>	Uzbekistan	Physics
5.	Prof. Askar <b>Akayev</b>	Kyrgyzstan	Computer Engineering
6.	Prof. M. Sajjad <b>Alam</b>	Bangladesh/USA	Physics
7.	Prof. Liaquat <b>Ali</b>	Bangladesh	Medicine
8.	Prof. M. Shamsher <b>Ali</b>	Bangladesh	Physics
9.	Prof. Qurashi Mohammed <b>Ali</b>	Sudan	Medicine/Anatomy
10.	Prof. Huda Saleh <b>Ammash</b>	Iraq	Biology
11.	Prof. Shazia <b>Anjum</b>	Pakistan	Chemistry
12.	Prof. Muhammad <b>Asghar</b>	France	Physics
13.	Prof. Muhammad <b>Ashraf</b>	Pakistan	Botany
14.	Prof. Allaberen <b>Ashyralyev</b>	Turkmenistan	Mathematics
15.	Prof. Saleh A <b>Al-Athel</b>	Saudi Arabia	Mechanical Engineering
16.	Prof. Ahmad Abdullah <b>Azad</b>	Bangladesh/ Australia	Biochemistry
17.	Prof. Agadjan <b>Babaev</b>	Turkmenistan	Geography
18.	Prof. Adnan <b>Badran</b>	Jordan	Biology
19.	Prof. Shah Nor Bin <b>Basri</b>	Malaysia	Mechanical Engineering
20.	Prof. Elias <b>Baydoun</b>	Lebanon	Biochemistry
21.	Prof. Farouk <b>El-Baz</b>	USA	Geology
22.	Prof. Kazem <b>Behbehani</b>	Kuwait	Immunology
23.	Prof. Azret Y. <b>Bekkiev</b>	Balkar/Russia	Physics
24.	Prof. Rafik <b>Boukhris</b>	Tunisia	Medicine
25.	Prof. David <b>Bradley</b>	UK	Physics
26.	Prof. Noor Mohammad <b>Butt</b>	Pakistan	Physics
27.	Prof. Mohamed Thameur <b>Chaibi</b>	Tunisia	Agriculture/ Climate Technologies
28.	Prof. Muhammad Iqbal <b>Choudhary</b>	Pakistan	Organic Chemistry
29.	Prof. Abdallah <b>Daar</b>	Oman/ Canada	Medicine
30.	Prof. Ali <b>Al-Daffa'</b>	Saudi Arabia	Mathematics
31.	Prof. Mamadou <b>Daffe</b>	Mali/France	Biochemistry
32.	Prof. Ramazan <b>Demir</b>	Turkey	Biology
33.	Prof. Oussaynou Fall <b>Dia</b>	Senegal	Geology
34.	Prof. Mehmet <b>Ergin</b>	Turkey	Chemical Engineering
35.	Prof. Sehamuddin <b>Galadari</b>	UAE	Biochemistry
36.	Prof. Nesreen <b>Ghaddar</b>	Lebanon	Metallurgical Engineering
37.	Prof. Mehdi <b>Golshani</b>	Iran	Physics
38.	Prof. Kadyr G <b>Gulamov</b>	Uzbekistan	Physics
39.	Prof. Ameenah <b>Gurib-Fakim</b>	Mauritius	Chemistry
40.	Prof. Hashim M <b>El-Hadi</b>	Sudan	Veterinary Medicine

41.	Prof. Kemal <b>Hanjalic</b>	Bosnia-Herzegovina	Mechanical Engineering
42.	Prof. Mohamed H A <b>Hassan</b>	Sudan	Mathematics
43.	Prof. Tasawar <b>Hayat</b>	Pakistan	Mathematics
44.	Prof. Bambang <b>Hidayat</b>	Indonesia	Astronomy
45.	Prof. Rabia <b>Hussain</b>	Pakistan	Microbiology
46.	Prof. Abdul Latif <b>Ibrahim</b>	Malaysia	Microbiology
47.	Prof. Aini <b>Ideris</b>	Malaysia	Veterinary Medicine
48.	Prof. Asma <b>Ismail</b>	Malaysia	Biotechnology
49.	Prof. Mohammad Shamim <b>Jairajpuri</b>	India	Zoology
50.	Prof. Mohammad Qasim <b>Jan</b>	Pakistan	Geology
51.	Prof. Afaf <b>Kamal-Edin</b>	Sudan	Chemistry
52.	Prof. Hamza <b>El-Kettani</b>	Morocco	Physics and Chemistry
53.	Prof. Idriss <b>Khalil</b>	Morocco	Mathematics
54.	Prof. Abdul Qadeer <b>Khan</b>	Pakistan	Metallurgical Engineering
55.	Prof. Hameed Ahmed <b>Khan</b>	Pakistan	Physics
56.	Prof. Mostefa <b>Khiati</b>	Algeria	Medicine
57.	Prof. Hala Jarallah <b>El Khozondar</b>	Gaza/ Palestine	Physics
58.	Prof. Abdelhafid <b>Lahlaidi</b>	Morocco	Medicine
59.	Prof. Zohra Ben <b>Lakhdar</b>	Tunisia	Physics
60.	Prof. Malek <b>Maaza</b>	Algeria	Neutronics
61.	Prof. Abdel Salam <b>Majali</b>	Jordan	Medicine
62.	Prof. Ahmed <b>Marrakchi</b>	Tunisia	Electronic Engineering
63.	Prof. Akhmet <b>Mazgarov</b>	Tatarstan/Russia	Petrochemistry
64.	Prof. Amdoulla <b>Mehrabov</b>	Azerbaijan	Materials Science
65.	Prof. Shaher <b>Al-Momani</b>	Jordan	Mathematics
66.	Prof. Ali A. Moosavi- <b>Movahedi</b>	Iran	Chemistry
67.	Prof. Sami <b>Al- Mudhaffar</b>	Iraq	Biochemistry
68.	Prof. Zaghloul <b>El-Naggar</b>	Egypt	Geology
69.	Prof. Ibrahim Saleh <b>Al- Naimi</b>	Qatar	Chemistry
70.	Prof. Anwar <b>Nasim</b>	Pakistan	Genetics
71.	Prof. Munir <b>Nayfeh</b>	Jordan/ USA	Physics
72.	Prof. Robert <b>Nigmatulin</b>	Tatarstan/ Russia	Physics/ Mathematics
73.	Prof. Shekoufeh <b>Nikfar</b>	Iran	Pharmacoeconomics and Pharmaceutical
74.	Prof. Gulsen <b>Oner</b>	Turkey	Medicine
75.	Prof. Ilkay Erdogan <b>Orhan</b>	Turkey	Pharmacognosy
76.	Prof. Ramdane <b>Ouahes</b>	Algeria	Chemistry
77.	Prof. Sinasi <b>Ozsoylu</b>	Turkey	Medicine/ Pediatrics
78.	Prof. Munir <b>Ozturk</b>	Turkey	Biology
79.	Prof. Iqbal <b>Parker</b>	South Africa	Biochemistry
80.	Prof. Syed Muhammad <b>Qaim</b>	Germany	Nuclear Chemistry
81.	Prof. Atta-ur- <b>Rahman</b>	Pakistan	Chemistry
82.	Prof. Hussein Samir <b>Salama</b>	Egypt	Entomology
83.	Prof. Eldar Yunisoglu <b>Salayev</b>	Azerbaijan	Physics /Mathematics
84.	Prof. Jawad A. <b>Salehi</b>	Iran	Electronic Engineering
85.	Prof. Boudjema <b>Samraoui</b>	Algeria	Biology

86.	Prof. Lorenzo <b>Savioli</b>	Italy	Medicine
87.	Prof. Mohammed Musa <b>Shabat</b>	Gaza/ Palestine	Biology
88.	Prof. Misbah-Ud-Din <b>Shami</b>	Pakistan	Chemistry
89.	Prof. Ali <b>Al-Shamlan</b>	Kuwait	Geology
90.	Prof. Ahmad <b>Shamsul-Islam</b>	Bangladesh	Botany
91.	Prof. Muthana <b>Shanshal</b>	Iraq	Chemistry
92.	Prof. Zabta Khan <b>Shinwari</b>	Pakistan	Biology
93.	Prof. Ahmedou M <b>Sow</b>	Senegal	Medicine
94.	Prof. Mahmoud <b>Tebyani</b>	Iran	Electronic Engineering
95.	Prof. Ahmet Hikmet <b>Ucisik</b>	Turkey	Materials Science
96.	Prof. Gulnar <b>Vagapova</b>	Tatarstan/ Russia	Medicine
97.	Prof. Omar M. <b>Yaghi</b>	Jordan/USA	Chemistry
98.	Prof. Jackie <b>Ying</b>	Singapore/USA	Chemical Engineering
99.	Prof. Bekhzad <b>Yuldashev</b>	Uzbekistan	Physics/ Mathematics
100.	Prof. Khatijah Mohd <b>Yusoff</b>	Malaysia	Microbiology
101.	Prof. Salim <b>Yusuf</b>	Canada	Medicine
102.	Prof. Mikhael <b>Zalikhanov</b>	Balkar/Russia	Glaciology/Biology

### DECEASED FELLOWS OF THE ISLAMIC WORLD ACADEMY OF SCIENCES

1.	Prof. Mohammad <b>Ibrahim</b>	Bangladesh	(1911-1988).
2.	Prof. Djibril <b>Fall</b>	Senegal	(1930-1992).
3.	Prof. Salimuzzaman <b>Siddiqui</b>	Pakistan	(1897-1994).
4.	Prof. Abdus Salam <b>Mia</b>	Bangladesh/USA	(1925-1995).
5.	Prof. Suleiman Gabir <b>Hamad</b>	Sudan	(1937-1996).
6.	Prof. Mohammad R <b>Siddiqi</b>	Pakistan	(1908-1998).
7.	Prof. Abdullah M <b>Sharafuddin</b>	Bangladesh	(1930-1998).
8.	Prof. Achmad <b>Baiquni</b>	Indonesia	(1923-1998).
9.	Prof. Mumtaz Ali <b>Kazi</b>	Pakistan	(1928-1999).
10.	Prof. Faramaz <b>Maksudov</b>	Azerbaijan	(1930-2000).
11.	Prof. Mahjoub Obeid <b>Taha</b>	Sudan	(1937-2000).
12.	Prof. Ali <b>Kettani</b>	Morocco	(1941-2001).
13.	Prof. Mohamed <b>Mahmoud</b>	Egypt	(1926-2003).
14.	Prof. Samaun <b>Samadikun</b>	Indonesia	(1931-2006).
15.	Prof. Iftikhar Ahmad <b>Malik</b>	Pakistan	(1936-2008).
16.	Prof. J (Younis) Ario <b>Katili</b>	Indonesia	(1929-2008).
17.	Prof. Ibrahima Mar <b>Diop</b>	Senegal	(1921-2008).
18.	Prof. Syed Zahir <b>Haider</b>	Bangladesh	(1927-2008).
19.	Prof. Muhammad Ilyas <b>Burney</b>	Pakistan	(1922-2008).
20.	Prof. Badri <b>Muhammad</b>	Malaysia	(1943-2009).

21. Prof. Pulat <b>Khabibullaev</b>	Uzbekistan	(1936-2010).
22. Prof. Mohammed A <b>Waqar</b>	Pakistan	(1941-2010).
23. Prof. Souleymane <b>Niang</b>	Senegal	(1929-2010).
24. Prof. Ahmad Nawawi <b>Ayoub</b>	Malaysia	(1937-2010).
25. Prof. Kamal H. <b>Batanouny</b>	Egypt	(1936-2011).
26. Prof. Mohamed B E <b>Fayez</b>	Egypt	(1927-2011).
27. Prof. Mazhar M <b>Qurashi</b>	Pakistan	(1925-2011).
28. Prof. Mahmoud <b>Hafez</b>	Egypt	(1912-2011).
29. Prof. Jamal <b>Nazrul-Islam</b>	Bangladesh	(1939-2013).
30. Prof. <b>Riazuddin</b>	Pakistan	(1930-2013).
31. Prof. Naeem Ahmad <b>Khan</b>	Pakistan	(1928-2013).
32. Prof. Mehmet Nimet <b>Ozdas</b>	Turkey	(1921-2014).
33. Prof. Ugur <b>Dilmen</b>	Turkey	(1955-2015).
34. Prof. Ibrahim Gamil <b>Badran</b>	Egypt	(1924-2015).
35. Prof. Fakhruddin <b>Daghestani</b>	Jordan	(1936-2016).
36. Prof. Ibrahima <b>Wone</b>	Senegal	(1926-2016).
37. Prof. Syed Qasim <b>Mehdi</b>	Pakistan	(1941-2016).
38. Prof. Korkut <b>Ozal</b>	Turkey	(1929-2016).
39. Prof. Mohammad <b>Salimullah</b>	Bangladesh	(1949-2016).
40. Prof. Attia A <b>Ashour</b>	Egypt	(1924-2017).
41. Prof. Mustafa <b>Doruk</b>	Turkey	(1932-2017).
42. Prof. Ishfaq <b>Ahmad</b>	Pakistan	(1930-2018).
43. Prof. Naci <b>Bor</b>	Turkey	(1928-2018).
44. Prof. Salambek <b>Khadjiev</b>	Chechnya	(1941-2018).
45. Prof. Makhmud <b>Salakhitdinov</b>	Uzbekistan	(1933-2018).
46. Prof. Adnan <b>Hamoui</b>	Syria	(1932-2018).
47. Prof. M. Ajmal <b>Khan</b>	Pakistan	(1953-2019).
48. Prof. Naim <b>Afgan</b>	Bosnia	(1929-2019).
49. Prof. Mohammad <b>Hamdan</b>	Jordan	(1934-2020).
50. Prof. Subhi <b>Qasem</b>	Jordan	(1934-2020).
51. Prof. Ali Ali <b>Hebeish</b>	Egypt	(1936-2020).
52. Prof. Khalid <b>Yusoff</b>	Malaysia	(1955-2021).
53. Prof. Najih Khalil <b>El-Rawi</b>	Iraq	(1935-2021).
54. Prof. Wiranto <b>Arismunandar</b>	Indonesia	(1933-2021).

## APPENDIX C

### LAUREATE(S) OF THE IAS IBRAHIM MEMORIAL AWARD

Prof. Ugur <b>Dilmen</b>	Turkey	1996.
Prof. Mohammad <b>Abdollahi</b>	Iran	2005.
Prof. Mohammed Manna <b>Al-Qattan</b>	Saudi Arabia	2007.
Dr. Faris <b>Gavrankapetanovic</b>	Bosnia	2009.
Dr. Saima <b>Riazuddin</b>	Pakistan	2011.
Prof. Liaquat <b>Ali</b>	Bangladesh	2013.
Prof. Jackie <b>Ying</b>	Singapore	2015.
Prof. Ameenah <b>Gurib-Fakim</b>	Mauritius	2019.

## APPENDIX D

### COUNCIL OF THE ISLAMIC WORLD ACADEMY OF SCIENCES (2017-2021)

President:	Prof. Abdel Salam Majali	Jordan.
Vice-President:	Prof. Noor M. Butt	Pakistan.
Vice-President:	Prof. Munir Ozturk	Turkey.
Vice-President:	Prof. Khatijah Mohd Yusoff	Malaysia.
Treasurer:	Prof. Adnan Badran	Jordan.
Secretary General:	Prof. Ahmad Abdullah Azad	Australia.
Member:	Prof. M. Shamsheer Ali	Bangladesh.
Member:	Prof. Mohammed Asghar	France.
Member:	Prof. Mostefa Khiati	Algeria.
Member:	Prof. Amdoulla Mehrabov	Azerbaijan.
Member:	Prof. Muthana Shanshal	Iraq.

### IAS EXECUTIVE STAFF

<b>Prof. Abdullah Al Musa</b>	<b>Director General.</b>
Mrs Taghreed Saqer	Executive Secretary.
Mrs Najwa F. Daghestani	Programs Manager.
Mr Ahmad Nassar	Finance Officer.
Mr Hamdi Bader Ahmad	Public Relations.

## APPENDIX E

### PUBLICATIONS OF THE ISLAMIC WORLD ACADEMY OF SCIENCES CONFERENCE PROCEEDINGS

1. *The Islamic Academy of Sciences*. Proceedings of the Founding Conference (1986). Published by the Islamic Academy of Sciences, **Editor: A. Kettani (Morocco)**.
2. *Food Security in the Muslim World*. Proceedings of the first international conference, Amman (Jordan) (1987). Published by the Islamic World Academy of Sciences, **Editor: S. Qasem (Jordan)**.
3. *Science and Technology Policy for Self-Reliance in the Muslim World*. Proceedings of the second international conference, Islamabad (Pakistan) (1988). Published by the Islamic World Academy of Sciences, **Editors: F. Daghestani (Jordan), H. El-Mulki (Jordan), and M. Al-Halqiqa (Jordan)**.
4. *New Technologies and Development of the Muslim World*. Proceedings of the third international conference, (Kuwait) (1989). Published by the Islamic World Academy of Sciences, **Editors: F. Daghestani (Jordan), and S. Qasem (Jordan)**.
5. *Technology Transfer for Development in the Muslim World*. Proceedings of the fourth international conference, Antalya (Turkey) (1990). Published by the Islamic World Academy of Sciences, **Editors: F. Daghestani (Jordan), A. Altamemi (Jordan), and M. Ergin (Turkey)**.
6. *Science and Technology Manpower Development in the Islamic World*. Proceedings of the fifth international conference, Amman (Jordan) (1991). Published by the Islamic World Academy of Sciences, **Editors: F. Daghestani (Jordan), A. Altamemi (Jordan), and H. El-Mulki (Jordan)**.
7. *Environment and Development in the Islamic World*. Proceedings of the sixth international conference, Kuala Lumpur (Malaysia) (1992). Published by the Islamic World Academy of Sciences, **Editors: S. Al-Athel (Saudi Arabia), and F. Daghestani (Jordan)**.
8. *Health, Nutrition and Development in the Islamic World*. Proceedings of the seventh international conference, Dakar (Senegal) (1993). Published by the Islamic World Academy of Sciences, **Editors: N. Bor (Turkey), A. Kettani (Morocco), and M. Zou'bi (Jordan)**.

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10. *Science and Technology Education for Development in the Islamic World*. Proceedings of the ninth international conference, Tehran (Iran) (1999). Published by the Islamic World Academy of Sciences, **Editors: M. Ergin (Turkey), M. Doruk (Turkey), and M. Zou'bi (Jordan) (ISBN 9957-412-7)**.
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12. *Biotechnology and Genetic Engineering for Development in the Islamic World*. Proceedings of the eleventh international conference, Rabat (Morocco) (2001). Published by the Islamic World Academy of Sciences, **Editors: A. S. Majali (Jordan), M. Ergin (Turkey), and M. Zou'bi (Jordan) (ISBN 9957-412-07-8). Online**.
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- Academy of Sciences, **Editors: M. Ergin (Turkey), and M. Zou'bi (Jordan) (ISBN 978-9957-412-18-0). Online.**
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  18. *Towards the Knowledge Society in the Islamic World: Knowledge Production, Application and Dissemination*, Proceedings of the seventeenth international conference, Shah Alam (Malaysia), (2009). Published by the Islamic World Academy of Sciences, **Editors: M. Ergin (Turkey), and M. Zou'bi (Jordan) (ISBN 978-9957-412-22-7). Online.**
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  20. *Science and Technology in Muslim World: Achievements and Prospects*, Proceedings of the IAS Symposium, Astana, Kazakhstan, (2012). Published by the Islamic World Academy of Sciences, **Editor: M. Zou'bi (Jordan). Online.**
  21. *Achieving Socioeconomic Development in the Islamic World through Science, Technology and Innovation*, Proceedings of the nineteenth international conference, Dhaka (Bangladesh), (2013). Published by the Islamic World Academy of Sciences, **Editors: M. Zou'bi (Jordan), and N. Daghestani (Jordan) (ISBN 978-9957-412-25-8). Online.**
  22. *Science, Technology and Innovation: Building Humanity's Common Future*, Proceedings of the twentieth international conference, Tehran (Iran), (2015). Published by the Islamic World Academy of Sciences, **Editors: M. Zou'bi (Jordan), and N. Daghestani (Jordan) (ISBN 978-9957-412-26-5). Online.**
  23. *Science, Technology and Innovation for Global Peace and Prosperity*, Proceedings of the twenty-first international conference, Konya (Turkey), (2017). Published by the Islamic World Academy of Sciences, **Editors: M. Zou'bi (Jordan), and N. Daghestani (Jordan) (ISBN 978-9957-412-27-2). Online.**



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#### BOOKS

- 1) *Islamic Thought and Modern Science* - Published by the Islamic World Academy of Sciences (1997) - **Author: Mumtaz A. Kazi.**
- 2) *Qur'anic Concepts and Scientific Theories* - Published by the Islamic World Academy of Sciences (1999) – **Author: Mumtaz A. Kazi.**
- 3) *Personalities Noble* **Editor: Hakim Mohammed Said**, Second Revised Edition, Published by the Islamic World Academy of Sciences (2000), **Editor: M. Zou'bi** (Arabic-English). **(ISBN: 9957-412-01-6).**
- 4) *Declarations of the Islamic World Academy of Sciences* – Published by the Islamic World Academy of Sciences (2005), **Editor: M. Zou'bi (ISBN: 9957-412-09-4).**
- 5) *Islamic World Academy of Sciences Outreach*, – Published by the Islamic World Academy of Sciences (2005), **Editor: M. Zou'bi (ISBN: 9957-412-10-8).**
- 6) *Intellectual Property Rights: An Introduction for Scientists and Technologists* – Published by the Islamic World Academy of Sciences (2006), **Author: M. Fayez (ISBN: 978-9957-412-18-0).**
- 7) *Reverse Engineering: The Permissible but not Well-Recognized* -Published by the Islamic World Academy of Sciences (2010), **Author: M. Fayez (ISBN: 978-9957-412-20-3).**
- 8) *The Discoveries in the Islamic Countries* – Arabic Edition Published by the Islamic World Academy of Sciences (2012), **Author: A. Djebbar (ISBN: 978-9957-412-23-4).**
- 9) *The Essentials of Science, Technology and Innovation Policy* – Published by the Islamic World Academy of Sciences (2013), **Author: Tan Sri Dr. O. Abdel Rahman (ISBN: 978-983-9445-95-4).**

## **PERIODICALS**

- 1) *Medical Journal of the Islamic World Academy of Sciences* (ISSN 1016-3360) – quarterly. Honorary Editor: **Prof. Şinasi Özsoylu**, Responsible Editor: **Dr. Nedim Aytekin**.
- 2) *Newsletter of the Islamic World Academy of Sciences* - quarterly – Chief Editor: **Director General -IAS**.
- 3) *Islamic Thought and Scientific Creativity* (in Arabic) - quarterly Journal of the Organisation of the Islamic Conference (OIC) Standing Committee on Scientific and Technological Cooperation (COMSTECH). Arabic version published by the IAS with the support of the Royal Academy for Islamic Civilisation Research (Al-Albait Foundation) (publication ceased in 1996).

## **APPENDIX F**

### **IAS SUPPORTERS**

**The Hashemite Kingdom of Jordan**  
**The Islamic Republic of Pakistan**  
**The State of Kuwait**  
**The Republic of Turkey**  
**Malaysia**  
**The Republic of Senegal**  
**The Republic of Sudan**  
**The Islamic Republic of Iran**  
**The State of Qatar**  
**The Republic of Tunisia**  
**The Kingdom of Morocco**  
**The State of Sarawak/Malaysia**  
**The Republic of Indonesia**  
**The Republic of Tatarstan/ Russian Federation**  
**The State of Selangor/Malaysia**  
**The Sultanate of Oman**  
**The Republic of Kazakhstan**  
**The People's Republic of Bangladesh**

The OIC Standing Committee on Scientific and Technological Co-operation (COMSTECH), Pakistan.

The Islamic Development Bank (IDB), Saudi Arabia.

The OPEC Fund for International Development, Vienna, Austria.

Arab Fund for Economic and Social Development (AFESD), Kuwait.

Arab Potash Company, Jordan.

United Nations Educational Scientific and Cultural Organisation (UNESCO), France.

The Islamic World Educational, Scientific and Cultural Organization (ICESCO), Morocco.

The World Bank, USA.

The United Nations Environment Programme (UNEP), Kenya.

Kuwait Foundation for the Advancement of Sciences (KFAS).

Turkish Scientific and Technical Research Council (TUBITAK).

The Royal Scientific Society (RSS), Jordan.

Pakistan Ministry of Science and Technology.

Ministry of Science, Technology and the Environment, Malaysia.

University Cheikh Anta Diop, Dakar, Senegal.

Ministry of Higher Education and Scientific Research, Sudan.  
National Centre for Research, Sudan.  
Ministry of Culture and Higher Education, Iran.  
Iranian Research Organisation for Science and Technology (IROST).  
The Academy of Sciences, Tehran, Iran.  
The Academy of Medical Sciences, Tehran, Iran.  
Saudi Arabian Oil Company, Saudi Arabia (ARAMCO).  
Ihlas Holding, Turkey.  
Arab Bank, Jordan.  
Jordan Kuwait Bank, Jordan.  
Rafia Industrial Company, Jordan.  
Secretariat of State for Scientific Research and Technology, Tunisia.  
Academy of the Kingdom of Morocco.  
Petra Private University, Jordan.  
Higher Council of Science and Technology (HCST), Jordan.  
Pakistan Academy of Sciences.  
Majlis Islam Sarawak, Malaysia.  
Tabung Baitulmal Sarawak, Malaysia.  
Sasakawa Peace Foundation, Japan.  
Perdana Leadership Foundation, Putrajaya, Malaysia.  
Royal Jordanian Airlines, Jordan.  
Arab Jordan Investment Bank, Jordan.  
National Centre for Human Resources Development, Jordan.  
Al Bukhary Foundation, Malaysia.  
Bilkent University, Turkey.  
US National Academy of Sciences, USA.  
International Islamic Charity Organisation, Kuwait.  
Islamic Organisation of Medical Sciences, Kuwait.  
Arab Gulf Programme for Development (AGFUND), Saudi Arabia.  
Fouad Alghanim & Sons Group of Companies, Kuwait.  
Saudi Basic Industries Corporation (SABIC), Riyadh, Saudi Arabia.  
Tatarstan Academy of Sciences, Tatarstan, Russian Federation.  
World Islamic Call Society, Tripoli, Libya.  
Jordan Phosphate Mines Company, Amman, Jordan.  
International Islamic Academy of Science and Biotechnology (IAB), Malaysia.  
University of Industry of Selangor (UNISEL), Malaysia.  
Ministry of Foreign Affairs of Qatar: The Permanent Committee for Organizing Conference, Qatar.  
Doha International Centre for Interfaith Dialogue (DICID), Qatar.

R.B. Suleimenov Institute of Oriental Studies, Kazakhstan.  
Prime Ministry of Bangladesh, Bangladesh.  
Foreign Ministry of Bangladesh, Bangladesh.  
University Grants Commission of Bangladesh, Bangladesh.  
Bangladesh Academy of Sciences, Bangladesh.  
Sheikh Mohammed bin Hamad Al Thani, Qatar.  
Eng. Awni Shaker Al Aseer, Saudi Arabia.  
Eng. Amjad Abu Aisheh, Jordan.  
Jordan Islamic Bank, Jordan.  
Dr. Mahmood Abu Shairah, Jordan.  
Necmettin Erbakan Üniversitesi, Turkey.  
Turkish Academy of Sciences (TÜBA), Turkey.  
Hikma Pharmaceuticals, Jordan.  
Dr. Ahmed Saif Balhasa, UAE.  
Dr. Adnan Mjalli, USA.  
Mr Ahmed Abu Ghazaleh (Arab Wings), Jordan.  
Cairo Amman Bank, Jordan.  
The Inter-Islamic Network on Water Resources Development and  
Management (INWRDAM), Jordan.

## **APPENDIX G**

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