



جامعة بنها ورابطة العلماء المصريين في أمريكا وكندا
وأكاديمية البحث العلمي والتكنولوجيا
يتشرفون بدعوة سيادتكم لحضور
فاعليات المؤتمر السابع والأربعون للرابطة
«**تطوير مصر بالعلم والتكنولوجيا**»

تحت رعاية معالي الأستاذ الدكتور / خالد عبد الغفار
وزير التعليم العالي والبحث العلمي

٢٢-٢٣ ديسمبر ٢٠٢٠



“Egypt’s Development with Science and Technology”

**In Partnership with Benha University and
the Academy of Scientific Research and Technology
under the Patronage of**



H.E. Prof. Dr. Khalid Abdul Ghaffar
Minister of Higher Education and Scientific Research



Prof. Dr. Gamal ElSaeed
President of Benha University



Prof. Dr. Mahmoud Sakr
*President of Academy for
Scientific Research and Technology*



AEAS Board of Directors

President



Dr. Naser El-Sheimy
University of Calgary

Past President



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University of Louisville

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Dr. Mohamed Attalla
University of Illinois



The Association of Egyptian American scholars (AEAS)

The idea of creating the Egyptian-American scholars association started by a discussion between Dr. Mohamed El-Wakil of Wisconsin and Dr. Ahmed Shouman of New Mexico in 1968. They both pursued the formalization of the group supported in Cairo by the Egyptian government and the Society of Friends of Egyptian Scholars Abroad. In 1971, fifteen Charter members were declared, and by 1972 the registration list reached 62 members. In 1973, the Association of Egyptian-American Scholars in the United States and Canada was formally established, and by 1974 it was officially incorporated in the State of Wisconsin, with Dr. Mohamed El-Wakil as its President. Through the years close to 600 scholars have joined the Association, very many are still active and supportive.

Since 1974, the Association of Egyptian-American Scholars has contributed abundantly to the scientific and cultural development of Egypt on one hand, and to the academic collaboration of its members in North America. A few examples of these achievements are highlighted below:

- Through the affiliation of several members with research centers in US and Canada, an important link has been established between them and Egypt.
- Since its birth, the AEAS has maintained strong ties with Friends of Egyptian Scholars Abroad (FOESA) in Cairo, which helped reunite them occasionally with the local scholars.
- So far, AEAS has participated in ten of the biannual Cairo conference on «Egypt - The Year 2000,» held by FOESA delivering most of the papers there from overseas and has regularly published those conference proceedings.
- Several libraries in Egypt were supplied with books, scientific periodicals and microfilms. Some members donated their own personal libraries.
- Numerous members have participated in United Nation TOKTEN program, which contributed significantly in transforming technological knowledge through Egyptian expatriates of North America.
- Through distinguished members, AEAS has placed Egypt under a program that benefits twelve nations in family planning; has helped Egypt to benefit from several applications of the American satellite research and development; and has placed Egypt among six countries receiving technical information from the American Institute of World Resources.
- Members gave several gifts (i.e. needed equipment/spare parts) to Egypt's universities and centers; and others donated money to cultural and charitable



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- An anonymous AEAS member has donated \$10,000 to the Egyptian Minister of Scientific Research restricted to cancer treatment research in Egypt.
- AEAS has conducted several conferences in North America dealing mainly with development in Egypt where the Egyptian Ambassadors in US and Canada served as guest speakers.
- AEAS has invited the two top students among Egyptian Secondary School graduates to visit US major cities and historic sites, hosted by Egyptian-American families.
- Several members participated in a study tour visiting main Egyptian cities and meeting with some dignitaries there. Besides, AEAS has donated a few scholarships to Egyptian-American students to take summer courses in Egypt.
- Some grants and research fellowships have been offered to college graduates in Egypt through AEAS members; and a pattern has been initiated to recognize and honor distinguished scholars among our members.
- AEAS has maintained a periodic newsletter including member news, opinions, abstracts, budget updates, and other concerns. The newsletter mailing list has been updated and enhanced to reach over 500 names.

For more information about AEAS, you can visit the site below.

<http://www.aescholars.org/>

<http://www.aescholars.org/AEAS-Directory-Full.pdf>



Benha University President's message



Ladies and Gentlemen

On behalf of Benha University, I would like to welcome you to the 47th conference of the Association of Egyptian scientists Scholars in America and Canada (Developing Egypt with Science and Technology), which is hosted by Benha University at Obour Campus, in cooperation with the Academy of Scientific Research and Technology under the auspices of Dr. Khaled Abdel Ghaffar, Minister of Higher Education and Scientific Research, From 22 – 23 December 2020.

The conference discusses, in its current session, many challenges and opportunities facing the higher education in Egypt in light of the Fourth Industrial Revolution and future jobs, which greatly affect the future of the education, employment and entrepreneurship system in Egypt.

I am sure that this conference, and through the scientific papers that will be discussed, will present ideas and recommendations that help to implement the culture of innovation, change and development in order to prepare a generation capable of keeping pace with developments in various fields. In a way that serves and is in line with the strategy of developing higher education in Egypt and it's vision for sustainable development 2030.

Finally, I extend my thanks and appreciation to the organizing committee of the conference and to all researchers for your effective and fruitful participation in the activities of the conference.

Prof. Dr. Gamal ElSaeed
President of Benha University



AEAS President's Message

Dear Colleagues,

On behalf of the Association of Egyptian American Scholars, I am honored and delighted to welcome you to the 47th Annual Conference, Association of Egyptian American Scholars (AEAS).



Thank you ALL for joining this year's meeting given that we all experience an unprecedented situation with the global COVID-19 pandemics.

As someone once said, "the show must go on." Not that this is a show, but I appreciate the great effort of Dr Gamal El Saeed, Benha University President, and his team for their tremendous effort in making this year conference take place on time and for their major effort in making everybody safe.

Special thanks to HE Dr. Khaled Abdel Ghaffar, Minister of Higher Education and Scientific Research, for supporting the meeting.

Although COVID-19 have impacted the attendance of many our colleagues from North America, our technical program still rich and varied in terms of it technical contents. As for any conference, the success depends ultimately on the many people who have worked hard in planning and organizing both the technical program and supporting social arrangements. I would like to thank my colleagues for the effort in planning and organizing the conference. Our hosts and colleagues from Egypt are certainly what makes us all want to come and participate. Special thanks to Professor Mohamed Attala and Professor Amr Ali for their effort in making this event happen. I also would like to thank all presenters for their effort in having a scientifically sound meeting.

Certainly, I hope that we can all take this opportunity to maintain and increase our interaction and continue to build bridges of collaboration among us in many different ways. Our beloved Egypt will have a better future when we all work together towards higher aspirations and goals.

Many Thanks to All,

Professor Naser El-Sheimy, P.Eng

Canada Research Chair - Tier I in Geomatics Multi-sensor Systems

Fellow, Canadian Academy of Engineering

Fellow, the US Institute of Navigation (ION)

Department of Geomatics Engineering,

The University of Calgary

President, Association of Egyptian American Scholars

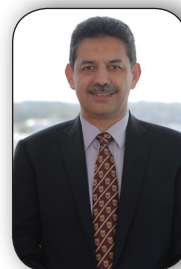
Established in Canada and USA in 1974



AEAS Conference Organization Co Chair

Dear Colleagues,

I wish to welcome you all to the 47th Annual Conference of the Association of Egyptian American Scholars (AEAS). AEAS was established 47 years ago in Canada and the United States of America. The AEAS mission is to create a forum for North American Egyptian Scholars that facilitates dialogue and promotes partnerships with Egyptian counterparts to implement beneficial scholarly endeavors. Over the past 47 years AEAS members and affiliates have lead many partnerships and research endeavours that aimed at Egypt's Social, Scientific, and Economic developments. Contributions included Higher Education Enhancement Programs, Code developments, manufacturing, Accreditation, Strategic Planning, university international classification, JESOR programs and many other initiatives.



This year's conference comes within a period of ample opportunities for Egyptians, Egyptian expatriates and the whole world. As scientists and entrepreneurs, we consider the COVID 19 pandemic challenges to be opportunities for us to flourish, to support the global community to pass those challenges and also to make those positive changes in the lives of many people worldwide who rely on the scientific community to bring innovative solutions to complex problems that face humanity. Many of our colleagues are involved in developing solutions for COVID tests, COVID vaccines, new processes and procurers, strategic and operation issues during the pandemic, enterprise problems, teaching and learning challenges, etc.

In spite of the fact that many conferences in 2020 were cancelled due to COVID 19, many of our colleagues in the USA, Canada and Egypt were determined to ensure that we do not miss the opportunity of this annual exchange of scientific knowledge and what is new in the research arena.

I wish to thank H.E. Dr. Khaled Abdel Ghafar for supporting the conference and Dr. Gamal El Saeed for hosting this great event.

I wish to also thank Dr. Amr Hanafi for his great efforts to make this conference happen. I wish you all a wonderful and enjoyable scientific event.

Thank you,

Dr. Mohamed Attalla, P.Eng., MBA

Executive Director, University of Illinois

Treasurer and Past President, Association of Egyptian American Scholars

Established in Canada and USA in 1974



Benha University Conference Organization Co Chair



Dear distinguished colleagues and guests,

It is an honor to welcome all of you to the 47th conference of “The Association of Egyptian American Scholars – AEAS” under the title «Developing Egypt with Science and Technology» where I wish us all a more positive prospect and a happy new year.

Through “Egypt’s Vision 2030”, the nation is keen to follow the latest modern technologies based on modern science in its future projects. Its tangible impact is illustrated in the implementation of national projects in various governorates aiming to sustain the welfare of citizens and the preservation and development of society. The exchange of scientific experiences promotes beneficial development and expansion.

Hence, Benha University is keen to host this prestigious conference to present several objectives, most importantly the presentation of the Egyptian state’s achievements during the current period at the national level, including projects aimed at serving society and citizens. Throughout the conference, the state-of-the-art contribution by AEAS scientists will be reviewed.

We are looking forward to consolidating the concepts of continuous partnership between Egyptian scholars with the distinguished scientific members worldwide on all levels of scientific research and application. This scientific gathering affirms the political leadership support for the higher education and scientific research track, its appreciation and encouragement for scientists and scholars in its possible capacities. It shall be emphasized that “following scientific theories and using modern technologies in all development plans in Egypt is the optimal path for success and progress”.

Despite the challenging circumstances that the world is going through, still the remarkable eagerness of the AEAS members on communicating with the homeland is maintained on regular basis. This fact represents a strong message to both the future generations and to the world that this distinguished constellation belongs to Egypt.

Finally, I would like to acknowledge the unlimited support from Professor Gamal Al Saeed, the President of Benha University and all the staff. Special thanks to my colleagues Dr. Naser El Sheimy and Dr. Mohamed Attalla for their contribution and willingness to reach this moment.

I wish all a successful conference and fruitful discussions with sincere wishes to good health and goodness.

Prof. Amr Hanafi

Head of the Surveying Engineering Department
Faculty of Engineering at Shoubra- Benha University-Egypt



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First Biannual Egyptian-American Scholars conference held under the auspices of President Mohamed Anwar Sadat, December 1974

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- AEAS has maintained a periodic newsletter including member news, opinions, abstracts, budget updates, and other concerns.



AEAS Presidents

| | |
|-------------------------|---------------|
| Dr. Mohamed El-Wakil | 1975-1978 |
| Dr. M. Cherif Bassiouni | 1979-1980 |
| Dr. Mohamed El-Wakil | 1981-1984 |
| Dr. Ibrahim Oweiss | 1985-1988 |
| Dr. Mohamed Selim | 1989-1990 |
| Dr. Badr El-Din-Ali | 1991-1994 |
| Dr. Wagiha Taylor | 1995-1998 |
| Dr. Badr El-Din-Ali | 1999-2002 |
| Dr. Ayman El Mohandes | 2003-2006 |
| Dr. Amer El Ahraf | 2007-2008 |
| Dr. Mohamed Attalla | 2009-2012 |
| Dr. Tawfik Ayoub | 2013-2014 |
| Dr. Adel Elmaghraby | 2015 - 2018 |
| Dr. Naser El-Sheimy | 2018- Present |



Benha University Presidents

| | |
|-------------------------|---------------|
| Dr. Hosam Al-Attar | 2005 – 2009 |
| Dr. M. Safwat Zahran | 2009 – 2011 |
| Dr. Ali Shams AlDeen | 2011 – 2016 |
| Dr. ElSayed Y. ElKady | 2016 – 2018 |
| Dr. Hussain El Maghraby | 2018- 2019 |
| Dr. Gamal H. ElSaeed | 2019- Present |



Conference Program (47th AEAS)

Tuesday, December 22nd, 2020 –BU-Obour Campus

| <i>Time</i> | <i>Event</i> | |
|-------------|---|---|
| 2:30 - 3:00 | VIP Welcome | |
| | National Anthem | |
| 3:00 - 4:00 | Opening Talks: <ul style="list-style-type: none"> • Dr. Karim Al Dash, Academic Director- Obor Campus) • Dr. Mohamed Attalla (AEAS Conference Co-Chair, AEAS Former President) • Dr. Naser El-Sheimy (AEAS President) • Dr. Amr Hanafi (BU Conference Co-Chair) • Dr. Gamal ElSaeed, (President Banha University) • Dr. Mahmoud Sakr (ASRT President) • Maj. Gn. Abdul Hamid Al-Hagan (Governor of Qalyubia) • Ambassador. Nabila Makram (Minister of State for Immigration and Egyptian Affairs Abroad) • Dr. Khalid Abdul Ghaffar (Minister of Higher Education & Scientific Research) | |
| | Keynote Speakers | |
| | Title | Speaker |
| 4:30 – 5:30 | Science and Technology - “A Key Entrance to The Egyptian Renaissance” | Dr. Amr Hanafi Prof. of Surveying and Geodesy, Benha University, Egypt |
| | “ An International Knowledge-Hub Based in Egypt Using IT and AI” | Dr. Mohamed Elmasry Prof. of Computer Engineering, University of Waterloo, Canada |
| | “Precautionary measures in the USA Higher Education to maintain In-Person Research and Education during COVID 19” | Dr. Mohamed Attalla Executive director, University of Illinois, USA |
| 5:30 – 6:00 | Honoring (Sponsors) | |
| 6:00 – 6:30 | Exhibition | |



Conference Program (47th AEAS)

Wednesday, December 23rd, 2020 –BU-Obour Campus

| <i>Time</i> | <i>Title</i> | <i>Speaker</i> |
|--------------|---|-------------------------|
| 8:30-9:30 | Registration | |
| | Panal Discussion (1) : Session Moderator: prof. Amr Hanafi “BU” | |
| 9:30-10:00 | Navigation Technologies of Self Driving Vehicles | Dr. Naser El-Sheimy |
| 10:00-10:30 | Current and future trends of laser technology in surveying and mapping | Dr. Ahmed Shaker |
| 10:30-10:45 | Discussion | |
| | Panal Discussion (2) : Session Moderator: Eng. Mohamad Elbostany | |
| 10:45-11:15 | Deep Learning: From Data to Knowledge | Dr. Adel S. Elmaghraby |
| 11:15-11:45 | Solar Renewable Energy farms in partnership with Higher Education institutions. | Dr. Mohamed Attalla |
| 11:45- 12:00 | Discussion | |
| 12:00-12:30 | Coffee Break | |
| | Panal Discussion (3) : Session Moderator: prof. Karim Al Dash | |
| 12:30-1:00 | Solar and wind generation to power medical facility | Dr. Ahmed Elsayy |
| 1:00-1:30 | Improving the Yield of Biodiesel Production from WVO Using the Free Fatty Acid Content and Viscosity Characteristics | Dr. Ahmed Elsayy |
| 1:30 - 1:45 | Discussion | |
| 1:45 - 2:30 | Lunch | |
| | Panal Discussion (4) : Session Moderator: prof. Adel S. Elmaghraby | |
| 2:30 - 3:00 | Organic Wastes: Is It Really WASTE? | Dr. Elsayed Elbeshbishy |
| 3:00 -3:30 | Future of higher Education “panel Discussion” | Dr. Adel S. Elmaghraby |
| 3:30 - 4:00 | Discussion | |
| 4:00 4:30 | Conference Recommendations | |
| | Prof. Naser El-Sheimy (AEAS President), Canada Prof. Mohamed Attalla (AEAS Conference Co-Chair), USA Prof. Amr Hanafi (BU Conference Co-Chair), Egypt | |



Benha University

Benha University (BU) is governmental university traced its roots to the first high school of Agriculture in Egypt, founded in 1911. BU is one of the prestigious Universities in Egypt and the Arab region. It has 16 faculties, 152 scientific departments, 5000 staff members serving more than 100,000 students. The university has 5 campuses, 4 hostels and it runs 4 hospitals.

Vision

Vision aims to make Benha University as a leading example for the Egypt's universities in education, scientific research, social and university life, and reaching to international competition in some fields.

Mission

Benha University would have a role in developing the community by providing an stimulating environment for education and scientific research as well as providing distinguished educational service by equal opportunities for students and increasing the partnership with the local and regional community in a flexible framework allowing to continuous improvement and maintaining the values and ethics of community keeping up with the scientific and technology development

Obour Campus is a part of BU dedicated to people, ideas and culture, a scholarly community working together to inquire and discover, to teach and learn, to create, conserve, disseminate and apply knowledge.

