

Research Newsletter

Vice President's Office for Research and Enterprise

ISSUE 6, OCTOBER 2022



Supporting Sustainable Development Goals



All research done by the University is aligned with Egypt's Vision 2030 and Sustainable Development Goals.



— **Prof. Mohamed Loufi**
Vice-Chancellor and President
The British University in Egypt

With The British University in Egypt actively incorporating sustainability into its strategy, Sustainable Development Goals (SDGs) are becoming embedded not only in the degree programmes offered, but also within our identity and culture. After collaborating with the United Nations Development Programme (UNDP), the University showcased its research efforts at the recent COP27 climate conference, participating with a booth at the Green Innovation Pavilion. I was honoured to receive Prof. Ayman Ashour, Minister of Higher Education and Scientific Research, at our booth, to highlight the University's notable research output in renewable energy and water desalination. At the conference, students came together from around the world to take part in the COP27 Simulator organised by the University, where they took on roles of country delegates and representatives of international organisations in a simulation of the conference.

Channeling the University's research towards SDGs by opening calls for internal funding, we proudly announce awarding eight YIRG projects that address at least one of the SDG themes. In addition, our publications are not just growing by numbers but also serving the SDGs and Egypt's Vision 2030.

The University recently submitted data for the Times Higher Education (THE) Impact Ranking, which focuses on universities' contributions to delivering the UN SDGs. In parallel to the submission, an online platform is being crafted showcasing the diverse impact the University's research and academic bodies are having on the wider community, addressing national challenges in priority areas such as clean energy and water conservation, health and well-being, and sustainability.

And speaking of rankings, for the first time in the University's history, we appear on the THE World Universities Rankings where we are the No. 1 private university accredited by the Supreme Council of Universities, tying with one other private university to top the tables. Globally the University is ranked 1201-1500, and in other rankings we continue our excellence in Physics.

Allow me to thank our academics for their great efforts and look forward to continued research success.

— *Prof. Yehia Baheh-El-Din*
Deputy Vice-Chancellor and VP, Research and Enterprise

IN THIS ISSUE

- Research Achievements and Awards
- Ranking Achievements
- Research at COP27
- Office of Enterprise Activities
- Board of Trustees Visit
- Research and Enterprise News
- MoUs and Partnerships
- Research Centres
- Funded Projects

Research Achievements and Awards

Top 2% Most Cited Authors 2022

The British University in Egypt has topped citation tables once again. This year we have the highest number of researchers among private universities on the World's Top 2% Most-Cited Scientists List, re-leased in October by Stanford Uni-



versity, USA. Our nine top-cited researchers have produced groundbreaking frontier research and published their findings in diverse fields. Congratulations to Dr. Sara Abdelsalam, Prof. Osama Badary, Prof. Nabil El-Tayyeb, Prof. Gamal Nashed, Dr. Hany Elazab, Dr. Alexy Golovnev, Prof. Medhat Ibrahim, Dr. Mamdouh Gadalla and Dr. Bassam Ayoub for their continuing achievement!

Dr. Abdullah Gibriel Wins State Encouragement Award

The Faculty of Pharmacy is proud to announce that Assoc. Prof. Abdullah Gibriel has been awarded the prestigious State Encouragement Award for his excellent scientific contributions in the field of Medical Sciences. This national award is organised and led by the Academy of Scientific Research and Technology (ASRT) and recognises young researchers across Egypt who have made outstanding achievements in this field. The award is based on quality of submitted papers, novelty and originality of research ideas addressing society/community challenges.



The British University Ranking Achievements

Times Higher University World University Rankings 2023

The British University in Egypt appears for the first time on the Times Higher Education World University Ranking, entering straight at No. 1 in Egypt! Only 26 Egyptian universities are listed on this year's rankings, which evaluate universities based on their research, citations, teaching and international outlook. The British University in Egypt is the No. 1 private university accredited by the Supreme Council of Universities, tying with one other private university to top the tables. Globally the University is ranked 1201-1500. In addition to the prestigious achievement, the British University in Egypt has also appeared on the Subject Ranking (Engineering), coming in at No. 801-1000.



The British University in Egypt
RANKED 1201–1500

FOR WORLD UNIVERSITY RANKINGS 2023



www.thewur.com



The British University in Egypt
RANKED 801–1000

FOR ENGINEERING



www.thewur.com

THE World University Rankings 2023 KEY INDICATORS

3%

Percentage of International Students

46:54

Student Ratio of Females to Males

16.2

Number of Students per Staff

11,042

Number of Full-time Students



The British University in Egypt appears for the first time on the Times Higher Education World University Ranking, entering straight at No. 1!



The British University Ranking Achievements

US News Best Global Universities Rankings 2022-2023

The British University has ranked #453 in the Subject Ranking (Physics) for 2022-2023 Indicator Rankings. Only 22 universities in Africa are ranked in the subject, 11 of them in Egypt. Nationwide The British University in Egypt is the top private and national university and comes in at No. 5 among universities in Africa, outranking heavyweights including Cairo, Helwan and Mansoura universities.

Thirteen indicators were used to calculate the University's overall performance in the subject including global research reputation (#458), regional research reputation (#9) publications (#590), normalised citation impact (#221) and total citations (#506). Other criteria ranked the number of publications that are among the 10% most cited (#444), percentage of total publications that are among the 10% most cited (#124), international collaboration relative to country (#169) and international collaboration (#74). Lastly the criteria also ranked the number of highly cited papers that are among the top 1% most cited (#496) and the percentage of highly cited papers that are among the top 1% most cited (#368).



The British University in Egypt is the only university in Egypt to appear on this year's Shanghai Subject Ranking (Physics).



Shanghai World University Rankings 2023



The British University in Egypt is the only university in Egypt to appear on the Shanghai Subject Ranking (Physics) released in August. For the 6th year in a row it is the No. 1 private university in the subject, ranking 2nd in the Arab World and 3rd in Africa.

Research at COP27

Showcasing Research at the Green Innovation Pavilion



The British University in Egypt participated in the COP27 Green Innovation Pavilion where it showcased the University's innovations in renewable energy and water desalination, and which serve Egypt's sustainable development goals.

The innovations are the outcome of research projects, awarded to the University by both national and international funding agencies.

Minister of Higher Education and Scientific Research Prof. Ayman Ashour and Prof. Mahmoud Sakr, President of the Academy of Scientific Research and Technology, were welcomed by Prof. Yehia Bahei-El-Din, Vice President for Research and Enterprise, to the University's booth at the Green Innovation Pavilion at COP27.



Research at COP27



Over the past 17 years, the British University in Egypt has been committed to sustainability and climate change mitigation. Examples of its innovations in renewable energy include wind turbines manufactured on campus and provided to village communities, through an official collaboration with El-Reef El-Masry.

On a journey to turning our campus into an ecofriendly one, the University has started installing solar panels on the roofs of our buildings to reduce our carbon footprint. This will help us secure 30-40% of our energy needs through renewable solar energy.

The University has also manufactured portable solar-powered water desalination units capable of generating 12 cubic meters a day. The University will desalinate underground and sea water, and will distribute clean water to underprivileged villages in Upper Egypt.



Minister of Higher Education and Scientific Research Professor Ayman Ashour expressed interest in the University's innovations, in particular the wind energy and water desalination projects, and suggested that the University also explore developing communications technologies.



Research at COP27

COP27 Simulation Model



The British University in Egypt organised the #COP27 Simulation, a youth-led Global conference that simulates the real COP27. The model was organised in collaboration with the UNDP and under the auspices of the Ministry of Higher Education and Scientific Research, the Ministry of Youth and Sports, and COP27 High-Level Climate Action Champion H.E. Prof. Mahmoud Mohieldin.

Of more than 2000 student applicants around the world, 130 students were selected from 25 countries, 34 international universities in addition to 21 Egyptian universities. The COP27 Simulation Model consisted of three main stages. An intensive two-week capacity building programme was held to school participants in climate literacy, international climate action, diplomacy and conflict management in addition to research and interpersonal skills. The second stage



was mentored research on climate action topics. The third was a three-day international mock-conference hosted by the University in October.

During the mock conference, students simulated plenary and technical discussions and passed resolutions that were then published in the COP27 Simulation Declaration. The declaration contained many articles, the most important of which related to mitigating carbon practices and investment in green energy, the creation of a fund to mobi-



lise needs-based finance for and also recommendations on establishment of the loss and damage fund which was remarkably also established in the real COP27. The final article called for the substantial cancellation of developing countries' sovereign debt.

The outcomes and youth voices of the #COP27 Simulation model were well heard during Egypt's COP27 Climate Change Conference in Sharm El-Sheikh. On Science and Youth Day we had two sessions in the Green Zone and the Blue Zone.

Research at COP27

Our session in the Green Zone entitled “Our Take on Climate Finance” was an opportunity where students presented their proposals and discussed with the panel their ideas regarding finance, debt and loss and damage.

The other session, organised at the Blue Zone, was an interactive session on the entire journey of the COP27 Simulation Model, the lessons learnt and how the participating youth believe that can utilise this experience in becoming future change agents.

As always highlighted by Prof. Mohamed Loutfi, President and Vice-Chancellor at The British University in Egypt, the COP27 Simulation Model is a clear example of the University’s new strategic direction, placing students at the heart of the University’s activities and persistence to become active players when it comes to the implementation of Sustainable Development Goals.

The COP27 Simulation model was a unique and distinct activity, not just in skilling the youth and bringing their voices to Sharm El-Sheikh, but also in being a very inclusive University activity where the profound and passionate collaboration was evident. Thanks to the more than 70 academic and administrative staff members who supported the COP27 Simulation Model who worked hard for more than seven months to have this activity implemented in the best possible way. The COP27 Simulation model was also very successful to engage the Students’ Union and Smoove club during all its stages. The COP27 Simulation is now being considered as a fixed activity in coming future COP meetings worldwide – a huge testimony to the success of the project. For more on the COP27 Simulation Model journey, see the video at <https://www.youtube.com/watch?v=Xs1Y748Va6g&t=38s>



Office of Enterprise Activities

Ice Photo Booth at Run for the Climate Marathon



With the goal of encouraging its students, academics and staff to work towards Egypt's Vision 2030 and UN Sustainable Development Goals, The British University in Egypt partnered with Cairo Runners and the Ministry of Youth and Sports to spread awareness and motivate others to save the planet. Run for the Climate Marathon brought together 10,000 runners from various de-

mographic regions for the 2, 5 and 10 km marathons to save the planet and encourage others to adopt climate policies.

As part of the commercialisation plan and vision for COP27, the Science Park's fabrication lab engineers designed an ice photo booth, simulating the effect of climate change on icebergs in both poles, using the technology developed by the R&D cadres.

Designed by Al-Ashry Company, the portable ice factory is an industrial breakthrough in ice making and is a testament to the University's effective R&D arm for industry, consolidating

its status as an innovation hub for technology development. The portable ice factory is one of the most effective success stories to come out of the Technology, Innovation and Commercialisation Office at The British University in Egypt. The factory encompasses an innovative energy system that has tremendously cut down energy consumption by more than 80%.



Office of Enterprise Activities

Green Business and Startups Competition

The Science and Innovation Park (SIP) and Business Incubator (BI) launched the Green and Environmental Startup Exhibition as part of the COP27 Simulation Model Capacity Building Programme organised by the university. Several SIP and BI startups participated in the exhibition such as EIAshry for Refrigeration and Air Conditioning, Envirotaga, Momentum, Askova, TaAYRA, Nexus Analytical, Andk Gas. External startups ReNile and Delta Oil also participated in the exhibition which aimed to showcase to students real-life examples of how startups use innovation to enable a smooth transition toward a low-carbon and climate-resilient economy and a greener world.

In parallel, the Office of Enterprise also organised a panel discussion entitled “Green Business Models and Profitability.” The panel was led by Deputy Head of Enterprise and SIP Director Eng. Islam Mohamed; Dr. Karim El-Baz from Nexus Analytical; Co-Founder & Chief Marketing Strategist at Banlastic Ahmed Yassin; and ReNile CEO and Founder Hazem Salah-Eldin. The panel was moderated by Greenish Programme Developer Marwan Rasmy who shared insights into green revenue streams with attending students.



Board of Trustees Visit

Board of Trustees Tour of Campus Research Facilities

The British University in Egypt welcomed esteemed members of the Board of Trustees on October 11. As part of the visit, members toured the University's research facilities including the Science and Innovation Park (SIP) and Business Incubator (BI) as well as the Nanotechnology Research Centre.

The members also visited the FabLab at the Faculty of Business Administration, Economics and Political Science and toured the studios at the Faculty of Communication and Mass Media.



Esteemed Members of the Board of Trustees Mr. Douglas Blackstock, H.E. Ambassador Francis Riccardione, Prof. Iwan Davies, Prof. Riyad Hamza and the Rt Hon. Charles Clarke tour The British University in Egypt's research facilities.

Research and Enterprise News

Fifth International Conference in Chemistry

In collaboration with the Egyptian Chemical Society, The British University in Egypt co-organised the Fifth International Conference in Chemistry under the slogan “Chemistry and Global Challenges” in Marsa Alam at the end of October.

Under the auspices of Major General Prof. Sayed Meshaal, former Minister of Military Production and President of the Egyptian Chemical Society, the conference brought together a number of public figures who gave lectures in various areas including organic chemistry and its applications, chemistry of polymers and plastics, textile chemistry, food science chemistry, packaging materials chemistry, biochemistry, pharmaceutical chemistry and nano-chemistry.

Attended by keynote speakers from international universities, the conference also discussed climate change and its repercussions in light of the COP27 Climate Change Conference held in Sharm El-Sheikh in November. British University in Egypt faculty members received two of the three awards presented for the best research projects participating in the conference.

Speaking at the conference were Prof. Nadia Zakhary, former Minister of State for Scientific Research, Prof. El-Mohammadi El-Sayed Eid, former head of the Environmental Affairs Agency and former member of the National Specialised Councils, Major General Reda Awad, Prof. Ahmed El-Sharif, Dean of the Faculty of Science, Cairo University, and Prof. Rasha El-Nashar, President of the Egyptian Analytical Chemistry Association.

Chaired by Major General Meshaal, the Conference Board was co-chaired by Prof. Mohamed Loutfi, President and Vice Chancellor of The British University in Egypt. Prof. Issa Fakhr, Vice President of the Egyptian Chemical Society, served as Rapporteur. Prof. Yehia Bahei-El-Din, Deputy Vice Chancellor at The British University in Egypt, chaired the organising committee.



Research and Enterprise News

Photovoltaic Solar Station Installed on Campus



As part of the external-funded research project titled “The Role of Smart Streetscape Design on Reducing the Roads Carbon Emission in Egyptian Neighborhoods,” a team led by Dr. Rania Rushdy from the Faculty of Engineering has developed a photovoltaic solar station for charging electric cars that has been successfully installed on campus.

Installed on the roof of



Building B, the photovoltaic solar station will support campus electric vehicles by securing a clean energy supply source independent of the electricity provided by the Grid that relies on fossil fuel, using green solar energy instead. The station consists of 14 solar panels, an inverter and four batteries, and has the ability to charge a 12-battery electric vehicle in three hours during the summer season.

The station will be monitored and maintained by the Centre for Renewable Energy (CRE), and to date one of the University’s golf cars has been successfully charged.

The cost of the station was fully funded by the Science, Technology and Innovation Funding Authority (STDF). The team members at the British University in Egypt include Prof. Iman El Mahallawi, Director of the Centre for Renewable Energy, Dr. Amr Abdelkader, Director of the Centre for Predictive Maintenance, and Centre Research Assistants Eng. Mahmoud Elthakaby, Eng. Seif Tarek and Eng. Engy Samy.

MoUs and Partnerships

MoU with the National Research Center



The British University in Egypt signed a Memorandum of Understanding with the National Research Center (NRC) to cement scientific and cultural exchange and collaboration between the two sides. “The signing of an MoU between The British University in Egypt and the National Research Center marks a new milestone in the cooperation between the two institutions for building and developing human capacities, training and advisory services in research and enterprise,” noted Professor Yehia Bahei-El-Din, Deputy Vice Chancellor and VP, Research and Enterprise, at the event. Signing with Prof. Bahei-El-Din was Professor Mamdouh Moawad Ali, Vice President for Research Affairs and International Relations with the attendance of Professor Hussein Darwish, Acting President of the NRC.



The signing of this MoU marks a new milestone in the cooperation between our two Institutions for building and developing human capacities and training in research and enterprise.



— Prof. Yehia Bahei-El-Din

Deputy Vice-Chancellor and VP, Research and Enterprise



Research Centre for Irish Studies

New Horizons of Collaboration Between Egypt and Ireland



President and Vice Chancellor Prof. Mohamed Loutfi, together with Prof. Yehia Bahei-El-Din, Deputy Vice-Chancellor and Vice President for Research and Enterprise, welcomed H.E. Ambassador Mohamed Sarwat Selim, Egyptian Ambassador to Dublin, and congratulated him on his new post to Ireland. Ambassador Selim visited The British University in Egypt in August to explore potential areas of collaboration between Ireland and Egypt as well as introduce Ambassador Selim to the Research Centre for Irish Studies (RCIS). Discussions also revolved around the MoU signed between the Embassy of Ireland in Cairo and The British University in Egypt and the key role the RCIS plays in connecting the university with Irish universities, organisations and Centres of Irish studies across the different continents.

Director of the Research Centre for Irish Studies (RCIS) Associate Prof. Rania M Rafik Khalil gave a short overview of the exceptional status of the Centre being the only one of its kind in Egypt, Africa and the MENA region. Dr. Khalil highlighted the Centre's commitment to attracting international funding and research partnerships.



Centre for Theoretical Physics

Summer at CTP

Following last year's successful annual summer internship programme, the CTP held its 2022 round with the participation of 40 physics, mathematics and engineering undergraduates going into their final year. During the two-week internship students attended advanced lectures covering intricacies of physical interactions at the highest energies, and their interface with the governance of the natural world on cosmological scales. Lectures were given by three international speakers: Dr. Maria Guzman from the University of Tartu, Estonia; Dr. Nicola de Filippo from Bari, Italy; and Prof. Sumit Das from



the University of Kentucky. Students also received training in computational tools associated with research. The closing ceremony was attended by Deputy Vice Chancellor and VP for Research and Enterprise Prof. Yehia Bahei-El-Din, and certificates were awarded to students who completed the internship.

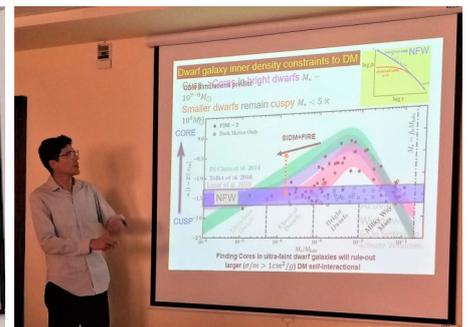
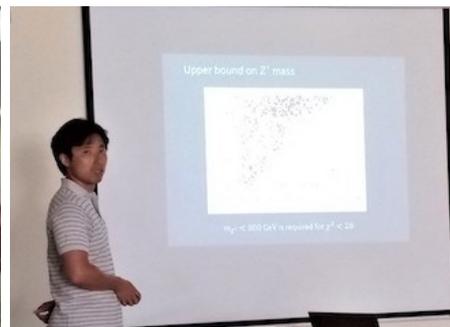
Workshops, Visits and Lectures

In July several speakers led by Prof. Waleed Moslem gave a lecture series constituting a **Basic Plasma Physics Course**, aimed at advanced undergraduates and beginning graduate students.

Dr. Yasser Assran visited the **European Organization for Nuclear Research (CERN)** from July-August to take part in the upgrade, development and testing of particle detectors in preparation for the crucial Run 3 of the Large Hadron Collider, when the increasing energy and luminosity of the colliding particles are set to allow for deeper probing into the nature of physical interactions.

The CTP co-organised a **Workshop on Astro-Particles and Gravity** that took place at Cairo University from September 20-22, and where several CTP members spoke.

In October **Dr. Junichiro Kawamura** (Institute for Basic Science, Korea) visited the CTP and gave a talk on muon anomalies in particle physics. **Dr. Victor Robles** (Yale University) also visited in October to discuss prospective collaborations with CTP members and give a talk on "Identifying Dark Matter Nature from Galaxies."



Funded Projects

Externally Funded Projects

From June 2022 to October 2022 six externally funded research projects were awarded, bringing the total number of grants at The British University in Egypt to 73. To date the University has attracted 2,674,223 EUR, 200,032 USD and 68,063,071 EGP in research funding. Currently, the University is also a partner on four projects with total funds of 17,250 GBP, 93,000 EUR and 3,350,000EGP. The most recently projects awarded grants are funded by the Academy of Scientific Research and Technology (ASRT), the Science and Technology Research Fund (STDF) and ITIDA as follows:

- Pharmacogenomics based prediction of Clinical outcomes to breast cancer therapy, **Prof. Osama Badary**, ASRT, 1,500,000EGP.
- Towards Smart Systems in Water Desalination Industry-Faults Detection Employing Machine Learning Approach (PRP), **Dr. Amr Abdel-Kader**, ITIDA, 226,600EGP.
- Mechanical Fitting of Pipes: An Alternative HGreen Technology, **Prof. Mostafa Shazly**, Academy of Scientific Research and Technology, 900,000EGP.
- A Guide Study for Integrated Sustainable Solutions For Energy & Water Management in Future Education Buildings in Egypt, **Dr. Hesham Safwat**, STDF 1,500,000EGP.
- Development of insulating panels of sugar cane and bagasse sugar cane and investigation of their architectural applications, **Dr. Marian Nabil Gergis**, STDF, 700,000 EGP.
- Earth Observation Monitoring for Predictability of Egyptian Coastal Sea Surface Temperature, Height and Extreme Anomalies, **Prof. Hesham Al-Askary**, ASRT, 2,625,000 EGP.

Young Investigator Research Grants (YIRG) 2022

Eight academics from five faculties/centres have been awarded the Young Investigator Research Grant (at a total fund of 970,000EGP) for 2022 as follows:

ENERGY & ENVIRONMENTAL ENGINEERING

- An Efficient Cost-Effective XCPC Solar Thermal System for Process Heat Applications, **Dr. Ahmed Aboulmagd**, 130,000EGP.
- Material degradation in solar energy systems, **Dr. Mohamed Elbakhshwan**, 130,000EGP.

ENGINEERING

- Sustainable Supply Chain Management Based on Big Data Analytics, **Dr. Noha Mostafa**, 100,000EGP.
- Biodiesel: Production, Optimization and Inspection, **Dr. Islam Al-Akraa**, 120,000EGP.

PHARMACY

- Citrus extract as anti-aging product: A step forward on sustainability in skincare industry Targeted, **Dr. Noha Fouad Swilam**, 100,000EGP.

- The Impact of Combining Somatostatin Analogue with an Iron Chelating Agent on Preventing Hepatic Ischemia Reperfusion in Rodents, **Dr. Rasha Tawfiq**, 130,000EGP.

DENTISTRY

- Effect of electronic nicotine delivery systems in comparison to conventional cigarettes on surface roughness, color stability, and bacterial accumulation of hard dental tissues and restorative materials, **Dr. Mahmoud Al-Ankily**, 130,000EGP

NANOTECHNOLOGY RESEARCH CENTRE

- Biocompatible and Biodegradable Electrospun Nanofibers-Loaded Novel Bioactive Heterocyclics for Cancer Treatment, **Dr. Samar Salim**, 130,000.

About the Research Newsletter

The Research Newsletter is produced by the Research Management Office, managed by the Office of the Vice President for Research and Enterprise.

MANAGING EDITOR

Prof. Yehia Bahei-El-Din

Deputy Vice Chancellor

Vice President for Research and Enterprise

EDITOR

Noha Mohamed

Director

Office of Research Management

ADMINISTRATION

Aya Sameer

Senior Administrative Assistant

Office of Research Management

Norhan Jazzy

Senior Administrative Assistant

VP Office for Research and Enterprise

Email the Research Newsletter Team at

vp.researchoffice@bue.edu.eg



The
BRITISH
UNIVERSITY
IN EGYPT