Zewail City
of Science, Technology and Innovation

University of Science and Technology

Research Institutes

Valley of Science and Technology

| General News

Zewail City's University of Science and Technology Awards Postgraduate Degrees

Postgraduate programs at the University of Science and Technology have been running for a number of years. Several students have recently been awarded Masters and Ph.D. degrees in various disciplines. Two postgraduate students, Mohamed Safy and Ali Alkaraly, just earned their M.Sc. degrees in nanoscience. Mohamed Safy's thesis was about the computational investigation of structural stability of MOFs and electrical conductivity mechanisms in MOF-Grap. Ali Alkaraly's thesis was about the design, development, and evaluation of silk fibroin-based multitask aerosolized nanopowders for efficient wound healing.

Another postgraduate student, Radwa Ayman, also recently obtained her Ph.D. degree in biomedical sciences. Dr. Radwa's thesis was titled "Hepatocellular Carcinoma Microenvironment Modulates the Regenerative Capacity, Activation and Expression Signature of miRNAs in Mesenchymal Stem Cells".

Success Stories of Zewail City's University of Science and Technology Alumni

Graduates of Zewail City's University of Science and Technology (UST) continue to achieve success in both professional careers and postgraduate studies. The achievements of UST alumni are driven by the distinguished education they received during their study at the university; UST students gain advanced knowledge and develop a wide range of skills. A success story of UST alumni is that of Omar Al-Basha, a graduate of the Materials Science Program, class of 2013. Omar was accepted into the Erasmus Mundus Master's Program in Advanced Functional Materials and Engineering (FAME+). Omar completed his first year of studies at the University of Grenoble, France, and his second year at the University of Darmstadt, Germany. Earlier in 2020, Omar received the MaWi-Preis award. This "Material Science Prize" is an annual award given to the three best master graduates among all material science graduates at the University of Darmstadt in the last two semesters. At the present time, Omar is studying for his Ph.D. at the CEA Laboratory in Grenoble, France, where more success awaits him.

Subscribers to Zewail City's OpenCourseWare Channel Exceed 10K

Zewail City's OpenCourseWare (OCW) channel was launched in 2018. The channel aimed at enabling public access to high-quality, university-level courses delivered by top-notch professors and researchers at Zewail City's University of Science and Technology. Two and half years after the channel's launch, 15 courses along with 8 interviews have been recorded and broadcast for free for the benefit of thousands of Arabic-speaking students worldwide.

Zewail City's OCW channel was initiated by Zewail City students out of passion and a sense of responsibility. Students overseeing the channel have been working hard. Some even stayed close to campus during the Covid-19 lockdown to maintain the delivery of course content to students in a timely, professional manner. Thanks to these efforts, the number of subscribers to Zewail City's OCW channel has been steadily growing and has now exceeded 10K subscribers.

| Events

Zewail City Organized the First Annual Phage International Conference in Egypt

Zewail City's Center for Microbiology and Phage Therapy (CMP) organized the First Annual Phage International Conference in Egypt. The conference lasted for two consecutive days, the 12th and 13th of March, 2021. It attracted around 403 participants around the world. The number of participants ranged between 100 and 170 per session. The conference discussed the future applications and challenges of bacteriophages with keynote speakers from the USA, UK, Canada, Belgium, Portugal, and Egypt. The keynote speakers included Dr. Ayman El-Shibiny the Chairman of the conference and Director of Zewail City's Center for Microbiology and Phage Therapy; Dr. Martha Clokie, Professor of Microbiology, University of Leicester, United Kingdom; Dr. Rob Lavigne, Professor at Faculty of Bioscience Engineering, Belgium; Dr. Elizabeth Kutter, Head of Lab of Phage Biology and Member of the Faculty in Biophysics; Dr. Joana Azeredo, Associate Professor with Habilitation, Universidade do Minho; Dr. Hany Anany, Research Scientist, Agriculture, and Agri-Food Canada, Guelph Research and Development Centre, Canada; Dr. Bob G. Blasdel, Research Director, Vesale Pharma, Belgium; Dr. Thomas Gardner Denes, Assistant Professor in Molecular Food Microbiology, University of Tennessee, USA; and Dr. Ramy Aziz, Professor, Department of Microbiology and Immunology, Faculty of Pharmacy, Cairo University, Egypt.

Online Session on Process Design Kits Organized by Zewail City's NANOENG Program

Zewail City's Nanotechnology and Nanoelectronics Engineering Program in collaboration with the Student Union organized an online session on the Development of Process Design Kits (PDKs). The session took place on April 3, 2021, and hosted engr. Mohamed Samir Eid, Staff Engineer of physical verification runsets and flow at Infineon technologies AG. Engr. Eid discussed the PDK flow including schematic, layout, simulation, DRC, LVS, and extraction.

PDKs implementation and development play an important role in assuring that the designed ICs are well verified and match the required design specification. PDKs are very beneficial in reducing the time to market of the designed products. That's why IC providers and chip makers in various fields (e.g., automotive and power electronics companies) are very keen to continuously enhance their PDKs.

Zewail City's Chess Club Announces Winners of Spring Tournament

The Chess Club at Zewail City just held its first chess tournament in 2021. The tournment lasted for two consecutive weeks. In an open-air closing ceremony, the Chess Club board headed by Mohamed Adel distributed appreciation certificates to all participants. The tournament winner Senior CIE student Moustafa Ebada received a gold medal and a featured glass chessboard. The runner-up Ahmed Fahmy received a silver medal. Coming in third place and receiving a bronze medal was Ahmed Fateen.

The tournament had 5 rounds with a knock out system and featured a Rapid Chess style with just 10 minutes for each player and 2 matches. In the case of a draw, they play what's called Armageddon, which is an unequal match by giving white 7 minutes and black only 5, but the black has the opportunity to win, in case the match ends with a draw. All the tournament matches were fairly evaluated by neutral expert students from the Chess Club.

| Faculty News

Dr. Obayya Becomes the First African Arab to Win the IEEE Photonics Society Distinguished Lecturer Award

Dr. Salah Obayya, Professor and Director of Center for Photonics & Smart Materials, and former Vice-Chair for Academic Affairs has been awarded the IEEE Distinguished Lecturer award for the year 2021-2022. This honor is bestowed annually on a very select group of Distinguished Professors who have achieved a world-class research reputation in Photonics.

Since its establishment, Prof. Obayya came as the first Arab and African to be awarded the IEEE Distinguished Lecturer Award. This award is designed to honor excellent speakers who have made technical, industrial, or entrepreneurial contributions to the field of photonics.

The IEEE is the leading professional association for the advancement of technology. With more than 400,000 members in more than 160 countries, IEEE is the world's largest technical professional society. Through its global membership, IEEE is a leading authority in areas ranging from aerospace systems, computers, and telecommunications to biomedical engineering, electric power, consumer electronics, and many other technical areas. Members rely on IEEE as a source of technical and professional information, resources, and services.

More about Dr. Salah Obayya

Dr. Mohamed Faraht Elected as an Associate Editor of Springer's Journal of Optical and Quantum Electronics

Dr. Mohamed Faraht, a Professor in the Nanotechnology and Nanoelectronics Engineering Program, has been elected as an associate editor of Springer's journal of optical and quantum electronics (OQE). The OQE journal is published monthly and is concerned with the technology and physics of optical systems, components, and devices; i.e., with topics such as optical fibers; semiconductor lasers, and LEDs; light detection and imaging devices; nanophotonics; photonic integration, and optoelectronic integrated circuits; silicon photonics; displays; and optical communications from devices to systems.

More about Dr. Mohamed Faraht

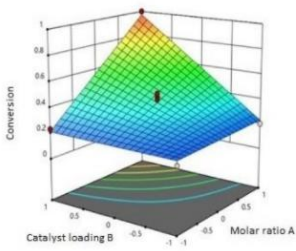
| Research News

A Zewail City Research Team Working on Development of a Diagnostic Tool for COVID-19

Dr. Salem, Professor of Biomedical Sciences and Director of the Molecular Biology and Virology lab, with his group, have been awarded a new fund from the Science Technology, and Innovation funding authority (STIFA) to develop a new and fast approach to detect SARS-CoV-2 in COVID-19 patients. The new method is based on engineering the cell to be sensitive in detecting the virus. The project is a fast-track project for 9 months and expected not only to establish an efficient tool for detecting the COVID-19 virus but also can be used as a platform to detect other viruses. The project capitalizes on the outcome of another recently awarded project to the same research group from the Academy of Scientific Research and Technology (ASRT) about COVID-19. The same group succeeded in producing a genetically engineered virus that can be used as a mimic-virus for SARS-CoV-2. The produced virus is very safe to handle as the modified virus is based on an insect virus that can be used in a biosafety level-1 lab.

More about Dr. Tamer Salem

Two Zewail City Professors Win the Best Paper Award in the Fourteenth International Conference of Fluid Dynamics



An article entitled "Numerical investigation for the valorization of waste from HMD cell using electrodialysis" written by Dr. Tamer Samir, a professor in the Environmental Engineering Program, and Dr. Moustafa Elshafei, professor in the Communications and Information Program, has been selected as the best paper in the assigned conference session of the Fourteenth international conference of fluid dynamics (ICFD14). This conference was held in the Fairmont Nile City Hotel, Cairo, Egypt on 2-3 April 2021.

More about Dr. Tamer Samir

More about Dr.Moustafa Elshafei

A Zewail City Team Wins Research Award in Applied Pharmaceutical Sciences

Research from Zewail City wins the ACDIMA Award for Best Research in applied pharmaceutical sciences for the year 2020, for a paper entitled "From Phenylthiazoles to Phenylpyrazoles: Broadening the Antibacterial Spectrum Towards Carpabenam-Resistant Bacteria" published by the group of Dr. Abdelrahman Mayhoub, Associate Professor in Nanoscience program, in the field of applied pharmaceutical sciences by Arab company for drug industries & medical appliances "ACDIMA"

More about Dr. Abdelrahman Mayhoub

Zewail City's Biomedical Sciences Team Publish New Research Article with Partner Universities

A collaborative team from Zewail City of Science, Technology, and Innovation; Nile University; and the Middle East Technical University, Turkey, have published a new research article entitled "The overexpression of DNA repair genes in invasive ductal and lobular breast carcinomas: Insights on individual variations and precision medicine". The work was led by two of Zewail City's Biomedical Sciences Program faculty members; Dr. Menattallah Elserafy, an assistant professor at Center for Genomics, and Dr. Eman Badr, an assistant professor of Computational Biology and Bioinformatics. The team has identified 36 DNA repair genes to be overexpressed in invasive ductal and lobular breast carcinomas. Despite the upregulation in a significant number of patients, a noticeable variation in the expression levels of the genes across patients of the same cancer subtype was evident. These findings open doors for further investigation of the overexpressed genes in breast cancer patients, to link their expression to differential response to therapy.

More about Dr. Menattallah Elserafy

More about Dr. Eman Badr

More about the Research

Dr. El-Shibiny Publishes a New Research Paper

microorganisms

Dr. Ayman El-Shibiny, Professor of Biomedical Sciences, published a new research paper in the Journal of Microorganisms. Dr. El-Shibiny is the Director of Zewail City's Center for Microbiology and Phage Therapy as well as the Center of Scientific Excellence for Food Research and Analysis. He is also the Acting Director of the Center for Genomics and Director General for Research. The newly published paper highlights the importance of Phage Therapy to treat Enterococcus faecalis in root canal infections. The results of this phage showed that the phage was able to control the growth of E. faecalis in vitro. These results suggest that isolated phage has potential for application in phage therapy and specifically in the prevention of infection after root canal treatment

More about Dr. Ayman El-Shibiny

More about the Paper

Monthly Highlights

| University of Science & Technology (UST)

UST has 9 undergraduate academic programs: 5 engineering majors and 4 science majors, along with 13 graduate programs: 7 M.Sc. and 6 Ph.Ds. This month we highlight nanotechnology and nanoelectronics engineering degrees offered by UST as well as one of the units of the Office of Non-Academic Student Life.

B.Sc. in Nanotechnology and Nanoelectronics Engineering

The Nanotechnology and Nanoelectronics Engineering program is an interdisciplinary program sharing a common foundation with all programs delivered at the University of Science and Technology during the first year.

The students focus on specific areas of nano-technology: nanoelectronics, nanophotonics, nanosystems, and nanoconstruction. These sub-disciplines are carefully chosen to align with the activities of the Institute of Nanotechnology in Zewail City where all students are allowed to use the advanced laboratories of the Institute.

Accordingly, students will gain a unique research experience in their field of specialization.

M.Sc. in Nanotechnology and Nanoelectronics Engineering

The program is designed for students who wish to train as nano-technology Engineers. Aspects of nanofabrication of devices, nano-device physics and modeling, nano-photonics and photonic devices, and nano-scale analog and digital are emphasized.

| Research Institutes (RI)

The CND aims to create an environment in which the electronics industry can thrive in the region. Moreover, it aims to prepare a highly trained cadre of professionals. By achieving this, the center hopes to develop strong ties with international and local industries in this field.

The CND is working on two main goals. The first goal is to serve the industry by reducing obstacles that hinder the increased creation and continued functioning of start-ups. The center is also working in collaboration with the Technology Innovation and Entrepreneurship Center (TIEC), the Egyptian Ministry of Communication and Information Technology, with the aim of providing multiple services to academia and industry. These services include a computer automated design (CAD) cloud, prototyping support, and well-equipped testing laboratories.

The second goal is to provide an atmosphere that will allow senior designers and researchers to conduct world-class industry-related research. This research will generate valuable intellectual properties (IPs) and will eventually benefit local industry.

| Valley of Science and Technology

The mission of VST is to ensure that Zewail City research outcomes are being protected and utilized into industrial products and services needed by society and the local market in the first place and then the foreign markets. The VST is a multiple-unit component of Zewail City. This month's highlight is:

Technology Transfer Unit

The Technology Transfer unit is mainly in charge of bridging the gap between the conducted scientific research at Zewail City and the Egyptian as well as the International market needs. In other words, the unit is on a mission to reorient the research output to fulfill the community, industry, and market demands.

Get in touch

Zewail City for Science, Technology and Innovation

Plot 12578, Ahmed Zewail Road, October Gardens, 6th of October City, Giza, Egypt