

جامعة قطر
QATAR UNIVERSITY

Qatar University Research Magazine

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Interview with HE Dr. Hamad bin Abdulaziz Al-Kuwari, Minister of State, President of Qatar National Library

Establishing the First National Marine Macroalgae Database in Qatar

Novel Finding: A Cell Membrane Mechanoreceptor Modulates Esophageal Wound Healing

Economic Education to Treat Inflation in the Qatari Market

QU Inventors Shine on the Podium of 13th IIFME 2023 in the State of Kuwait



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Distinguished readers of Qatar University Research Magazine,

We meet again in this magazine's issue, where we document the most prominent research achievements of Qatar University (QU) and the development of its projects and innovations, all of which unite in the direction of achieving the goals of sustainable development and the Qatar National Vision 2030. QU shines with its innovations, and wins four medals in the second largest exhibition of inventions in the world. Within the framework of QU's commitment to promoting the preservation and sustainability of the environment, it launched a unique mobile library, powered by clean energy. In addition, the university is also proud of the success of its students in designing an innovative electric Formula car and for winning four awards in the Global Electric Vehicle Challenge 2023.

This issue discusses the establishment of the first National Marine Algae Database in Qatar, as the first digital resource in the region. Our patent offers a new approach to the treatment of diabetes, and also opens up exciting possibilities in the cosmetic industry as a non-surgical alternative to fat transfer. Another patent is a design that contributes to innovation of safe medical syringes, in addition to a third patent in thermal insulation materials with plastic foam based on polyolefin foam, which guarantees protection for buildings and meets the needs of the industrial sector and society.

Our students also participated in a research project entitled, "The Association between Oral Health and the Risk of Gastric Cancer," which won first place in the Fifth Youth Research Forum 2023. Another project highlighted an important aspect of the media and a model for the case of the "war correspondent and the risks" they are exposed to.

Moreover, the issue includes several research articles that discuss the work of sensors in various fields, including food safety, biomedicine, and the environment, the problem of Islamophobia, the Gulf program to protect the rights of expatriate workers, historical memory in the context of Islamic-Christian dialogue, and the development of health and medical conditions in Qatar from folk medicine to modern medicine, and others.

Readers will also know about distinguished researchers and students in this issue. We have covered our interview with HE Dr. Hamad bin Abdulaziz Al-Kuwari, Minister of State, President of the Qatar National Library, about his book "The Debate over Conflicts and Settlements: Behind the Scenes of the Security Council...", recently published by Qatar University Press.

I invite you to browse this issue and get to know more of our achievements and activities. I hope it will be beneficial for all of you.

Prof. Mariam Al-Maadeed,
Vice President for Research and
Graduate Studies,
Qatar University



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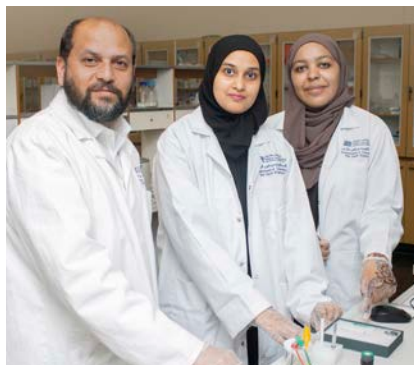
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Promoting Sustainable Energy: Qatar University Launches a New Solar-powered Mobile Library



Qatar University (QU) has taken another significant step toward promoting sustainable energy and education in the region by launching a solar-powered mobile library on its campus.

Developed by the Center for Advanced Materials (CAM) at Qatar University, this innovative initiative aims to promote eco-friendliness, while encouraging a reading culture, and providing students and faculty with easy access to academic resources from QU Press. The project demonstrates the University's commitment to stimulate environmental sustainability that aligns with the aims of Qatar National Vision 2030.

In designing the mobile library, the QU researchers recycled a club car by installing bookshelves and solar panels to power it with renewable energy.

This mobile library has the capacity to carry 200 books and be fully charged by sunlight within six hours.

As well as simultaneously charging and running under the sunlight for consecutive hours, the mobile library can be charged using direct grid electricity without sunlight. The primary purpose, however, is to use sunlight as a renewable source of energy to promote efficiency in harnessing green energy for real-world applications. It will also serve to efficiently distribute academic books from QU Press, a fellow partner on environmental sustainability.

Highlighting the initiative's importance, Prof. Mohammad Irshidat, Director of CAM, said: "The significance of our solar-powered mobile library lies in its use of a renewable energy source to ensure environmental sustainability. This initiative advances two of the United Nations Sustainable

Development Goals, securing affordable and clean energy under Goal 7, and building sustainable cities and communities under Goal 11. We

believe the solar-powered mobile library will create greater awareness around the QU campus of the importance of harnessing clean energy and promoting sustainability."

Prof. Mariam Al-Maadeed, Vice President for Research & Graduate Studies at QU, stated: "The launch of the solar-powered mobile library represents a significant step toward promoting sustainability, education, and community engagement. Qatar University is proud to be at the forefront of this initiative, and remains committed to promoting sustainable practices and initiatives that benefit society and the environment. The library is also a testament to the University's efforts to promote environmental awareness."

The Director of Qatar University Press, Prof. Fatma Al-Sowaidi, added: "This is a creative application of technology that will inspire students and researchers in Qatar. This solar-powered mobile library will be dedicated to promoting and selling QU Press books across campus and the country. Thanks to the environmentally-friendly innovation developed by CAM."



In a Distinctive Move toward Scientific Research Management Nationally and Regionally

Qatar University Participates in Organizing the First Edition of International Conference on Scientific Research Management in the Sultanate of Oman



Part of the opening of the first edition of International Conference on Scientific Research Management in the Sultanate of Oman.

In its endeavors to promote global joint collaboration and highlight its significance locally and internationally, Qatar University (QU) in cooperation with Sultan Qaboos University and the Ministry of Higher Education, Research and Innovation in the Sultanate of Oman organized the First International Conference on Scientific Research Management on 26-27 February 2023. Several researchers and interested experts from regional, Arab, and international universities attended the conference. The First Edition of the conference aimed at directing Scientific Research towards finding solutions for the problems of society, and making use of research outcomes, as well as the expansion of Scientific Research Financing Programs and spreading the Scientific Research Culture at industrial institutions. The objectives of the conference were exchanging the best practices in Scientific Research Management regionally and internationally, identifying challenges and issues facing Scientific Research Management as well as ways of addressing them. In addition, the conference aimed at recognizing the international practices for assessing Scientific Research Quality and its influence on society.



Participation of Prof. Mariam Al-Maadeed, Vice President for Research and Graduate Studies, in a discussion session within the activities of the conference in Oman.

Prof. Mariam Al-Maadeed, Vice President for Research and Graduate Studies, in her speech as keynote speaker at the conference, commended the cooperation between QU and Sultan Qaboos University that aimed at complying with promoting sustainable development economically and socially in the region in particular and in the Arab World in general. She pointed out that the two Universities as academic institutions are well known for the quality of their intellectual, scientific, and research production, in addition to their continuous growth in the fields of Higher Education and Scientific Research, as well as approving the best international standards towards Research Excellence that directly contribute to the social and economic development in the region in line with the needs of the society and industry.

During its four sessions, the conference discussed several joint research issues, including the significance of complying with the appropriate research requirements and recognizing the external resources of the research financing and the mechanisms to obtain them. The conference also discussed supporting the researchers in competing for external research, in addition to the influence and effectiveness of scientific research through developing a research vision and strategy of the institutions and the lessons learned from the management of long-term risky scientific projects. It also addressed the significance of Research and Innovation in a Post- COVID-19 Era and supporting

health research through the perspective of the World Health Organization. It discussed opportunities and challenges in Humanitarian Research, Research Management, Climate Change, and the social and economic influence of Higher Education as well as building the community of knowledge through Research and Innovation Management.

Prof. Abdelaziz Bouras, Manager of Pre-Award, Research Support for Grants and Contracts Department at QU managed a session of discussion on some aspects allocated for the Research Department. Through the session, he presented QU's experience in this field, such as how the University can manage and assess their research programs, how to assess sustainability and integrity tangibly, plus the extent to which the latest pandemics affected the Research Governance and Financing.

The conference paid attention to the quality and efficiency of the practices used in Scientific Research Management regarding Centralized and Decentralized management in Scientific Research. A keen interest was also taken in Research Program Management and the challenges it faces. Furthermore, to the responsibility of research projects that include research ethics and legal aspects of scientific research as well as the significance of publishing scientific research that conforms to the community requirements.



Prof. Abdelaziz Bouras, Manager of the Pre-Award, moderates a panel discussion at the conference.

QU Press and Ministry of Culture Jointly Organize First Edition of Book Fair 2023 under the Theme “Culture ... a Learning Journey”



From left: HE Sheikh Abdulrahman bin Hamad bin Jassim Al-Thani, Minister of Culture, HE Dr. Hassan bin Rashid Al-Derham, President of Qatar University, and Prof. Mariam Al-Maadeed, Vice President of Qatar University for Research and Graduate Studies, during a tour of the Qatar University Book Fair.

The first edition of Qatar University Book Fair 2023 was inaugurated under the theme “Culture ... a Learning Journey,” organized and jointly coordinated by QU Press, and the Ministry of Culture represented by the Qatari Publishers and Distributors Forum, and sponsored by the Libraries Department of the Ministry of Culture. The event was held under the auspices of HE the Minister of Culture Sheikh Abdulrahman bin Hamad bin Jassim Al Thani, and Qatar University (QU) President Dr. Hassan bin Rashid al-Derham, with the participation of a number of officials of the Ministry of Culture, and QU vice-presidents.



The presence of HE Sheikh Abdulrahman bin Hamad bin Jassim Al Thani, Minister of Culture, HE Dr. Hassan bin Rashid Al Derham, President of Qatar University, Prof. Mariam Al-Maadeed, Vice President for Research and Graduate Studies, a number of Vice-Presidents of the University, and Prof. Fatma Al-Sowaidi, Director of the Qatar University Press, the opening of the book fair at the University.

Aiming to initiate the role of universities as educational institutions that contribute to the development and promotion of the cultural movement, the QU Book Fair is considered the first of its kind in Qatar. Obviously, the fair is an extension of the Doha International Book Fair. The fair ran from February 28 to March 5, 2023, at the headquarters of the new Student Affairs building at the QU campus. The fair aims essentially to contribute to enabling the impact of books on Qatari society, opening the field for intellectual and cultural exchange, and spread reading and knowledge among members of society. It also aims to pay attention to the role of universities in educating students through workshops, seminars, and various book launches that intersected with the events and activities of the fair. Providing opportunities for students with different disciplines and interests to easily and closely access the book and its author helps in providing the appropriate environment for exchanging thoughts and presenting new and creative ideas.

The Book Fair included cultural events, book launches, and panel discussions with authors and their latest releases. This involved the launch of the book titled 'The Debate over Conflicts and Settlements Behind the Scenes of the Security Council: The Iraq-Iran War 1980-1988' by HE Dr. Hamad bin Abdulaziz Al-Kuwari, Minister of State, President of Qatar National Library; a panel discussion of 'Geopolitics of Sports' translated by Prof. Ahmad Haji Safar; a panel discussion with Dr. Aly Afify Aly Ghazy, author of the book "Introduction to the Sources of Qatar's History;" a panel discussion with Prof. Hassan Al-Sayed, author of the book "Introduction to Qatari Constitutional Law," in addition a book launching event which discussed new versions of law books published by QU Press, including: "The Legal Framework for Public Private Partnership (PPP) Projects in Qatar," a book by Prof. Yousef Shafie; "Summary of Real and Personal Security in Qatari Law," a book by Prof. Abdullah Abdullah & Dr. Tarek Rashed, and "Qatari Business Law" authored by Dr. Andrew Mazen Dahdal.

Moreover, the book titled "Post-Corona Pandemic's Architecture, Urbanism and City: Inevitable Transformations and Future Prospects" by Dr. Ali Alraouf was presented in the symposium during the book fair. A workshop was also held for the Doha Embrace Foundation (Leather Bookmarks Making).

Among its new publications, QU Press offered the fair's audience a distinct set of legal textbooks in coordination with the University's College of Law. The recently launched textbooks are: "Introduction to Qatari Law" by Dr. Muhammad Ammar Ghazal, and "Civil Contracts in Qatari Civil Law" by Dr. Hassan ElBarrawy.

In addition to the QU Press and the Ministry of Culture – the fair witnessed notable participation of many Qatari libraries and publishing houses, including; the Abdulaziz Al-Bohashem Al-Sayed Library, Dar Al Watad for Publishing and Distribution, Hamad Bin Khalifa University Press (HPKU Press), Katara Publishing House, the Arab Center for Research and Policy Studies, Dar Al-Sharq, Samarkand Library, Katateeb Educational Library, Kalimat Library, Alif Library, Imam Bukhari House, and Nawa Publishing House, in addition to Smart Book, Dar Zakreet for Publishing and Distribution, Dar Al-Qalam for Distribution, Crescent Bookshop, and Dhad Store for Arabic Calligraphy.

In her opening note, Director of QU Press Prof. Fatma Al-Sowaidi, welcomed the visitors stating that, "the Qatar Book Fair is an event that constitutes an important part of the University's vision, mission and goals." According to her, "the fair is the bastion of thought, culture and enlightenment, a special event which aims to support education and spread culture among members of the society."

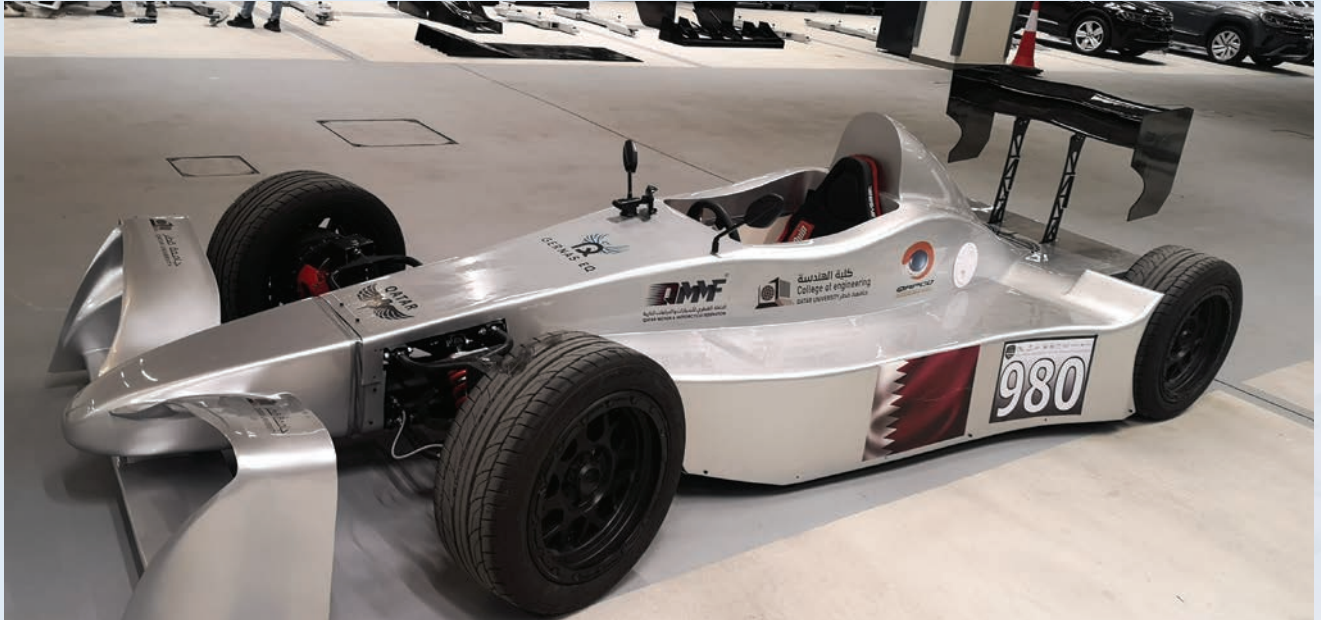
Prof. Al-Sowaidi added, "Allow me to extend my thanks and appreciation to the Ministry of Culture for its distinguished support of this fair. Qatar University looks forward to important future participations that widen the horizons for university students."

Qatar University Achieves Four Awards in the Global Electric Vehicle Challenge 2023



The winning students, from College of Engineering at Qatar University, of the Global Electric Vehicle Challenge (GEVC).

Qatar University students have achieved a resounding success at the Global Electric Vehicle Challenge (GEVC) 2023, hosted by the Abu Dhabi Future Mobility Challenge in Abu Dhabi, UAE on March 18, 2023. The University emerged victorious, winning four prizes, including Best Car Workmanship, Best Engineering Design, Fastest Qualifying Time, and First Overall Place. With this, Qatar University has made a name for itself in the field of sustainable transportation.



A four-wheel inboard electric Formula car designed by engineering students at Qatar University.

The University was the only one among the initially registered universities that could run its fully electric racecar on the racing circuit during the “race day.” The innovative design, which uses 4-in-wheel motors without any mechanical transmission, is the first of its kind in the world and was developed by 11 talented students from three departments of the College of Engineering during the academic year 2021-2022, as part of their multidisciplinary project. Two students are from the Electrical Engineering Program (Ahmed Elfeqy, Nabil Ben-Ammar), six from the Mechanical and Engineering Program (Abdallah Abu-Hijleh, Ahmed Ibrahim, Anas Shadid, Hani Shatat, Karim Habib, Ziad Al Malouf), and three from the Computer Engineering Program (Azzam Alnatsheh, Maged Ibrahim, Soulaime Jaoua). These students put in almost a yearlong of hard work, designing and constructing Qatar University’s first fully electric racecar. This team of multidisciplinary students was led by Prof. Adel Gastli, a professor from the Electrical Engineering Department in College of Engineering, Qatar University and co-supervised by Prof. Sadok Sassi and Dr. Jamil Reno from the Mechanical & Industrial Engineering Department and Dr. Uvais Qidwai from the Computer Science and Engineering Department.

Although most of the students who worked on the project have already graduated in the spring of 2022, a cohort of seven junior electrical engineering students joined the original team in the fall of 2022 to make final adjustments and ensure the car was ready to compete in the GEVC 2023 race. Among these students were Abdulla Al Aqaily, Abdullah Al-Mawed, Amr Yousry, Hamad Al-Yafei, Khaled

Barakah, Khaled Soliman, and Omar Mousa.

The students and their College are proud to have designed and built something that has never been done before, i.e. a four-wheel formula electric car with four in-wheel motors. The team’s dedication and hard work paid off, as Qatar University won four awards in the GEVC 2023.

Qatar University’s success in the GEVC 2023 highlights the University’s leadership in sustainable transportation and its commitment to excellence in education and research. The University is proud to have displayed its innovative capabilities on the global stage and is committed to continuing its efforts in promoting and advancing sustainable transportation solutions.

Dr. Khalid Naji, Dean of the College of Engineering, who has fully supported this project from its initiation until the competition, has praised the students and faculty members involved in the project, saying that their success is a testament to the quality of education and research in the College of Engineering at Qatar University. He added that the College of Engineering is dedicated to providing its students with a high-quality education that emphasizes innovation, creativity, and entrepreneurship.

The GEVC 2023 was a challenging competition, but Qatar University’s electric racecar demonstrated its superior performance and technical prowess, ultimately leading to its victory. The College of Engineering at Qatar University is poised to continue making significant contributions to the advancement of sustainable transportation solutions in the future.

QU Inventors Shine on the Podium of 13th
IIFME 2023 in the State of Kuwait

Won Two Gold and Two Bronze Medals



A group photo of the Qatari delegation winning gold medals at the 13th International Inventions Fair in the Middle East in the State of Kuwait (IIFME 2023).

Qatar University (QU) pays great attention to strengthening and supporting innovations and inventions that greatly influence the community and various industries, as well as encouraging the development of those inventions and innovations that go in line with the needs of the State until they are marketed as Qatari products in the national and international markets. QU participated in the 13th International Inventions Fair in the Middle East (IIFME 2023), which was held in the State of Kuwait from 12th to 15th February 2023, with the aim of encouraging and supporting the inventors, in addition to marketing their inventions to investors who visited the fair, in addition to highlighting the efforts of the University in the field of patents. The IIFME is considered the second most significant Invention Fair worldwide, after Geneva International Exhibition of Inventions, and it is considered the first most significant fair in the Middle East.



Prof. Sumaya Al-Maadeed, who won three medals at the 13th Inventions Fair in the Middle East 2023 in the State of Kuwait.

Forty foreign and Arab countries took part in the events of the fair including Qatar, which participated through different academic, professional and educational bodies. This session witnessed the participation of over 235 inventors who came up with 183 inventions, in addition to 22 inventions from China that were judged remotely. Technopol-Moscow Association that is concerned with patents and trademarks participated for the first time, alongside several international organizations. The Qatari Delegation participated with seven innovations: A

Needle-free Blood Sugar Measurement System, Cancer Discovery Device, the Portable Device to discover moving objects and obstacles by using a radar and a millimeter-wave camera, the “Smart Hat”, a helping system for persons with visual impairment, “Sajdah”, a smart system for teaching prayers, a Powered Air Purifying Respirator “PAPR”, and an Automatic System for cleaning solar panels by atmospheric humidity.

QU won the Gold Medal for the invention of Free-needle Blood Sugar Measurement by the innovators: Mazun Alshahwani, Noora Al-Bordeni, Fatima Al-Kaabi and Sara Al-Mohannadi under the supervision of Dr. Khalid Ahmed Abualsaud, Lecturer of Computer Science and Engineering from the College of Engineering (QU). It is also worth mentioning that Dr. Elias Yaacoub from Computer Engineering, Prof. Nizar Zorba and Dr. Muhammad Chowdhury from Electrical Engineering, added valuable contributions to the invention. The innovations of Prof. Sumaya Ali Al-Maadeed, Professor of Computer Science and Engineering achieved three medals: A gold medal for the invention of a Cancer Discovery Device from photos and light by using a capsule that is used in medicine. She also won two bronze medals for her innovations: The Smart Hat, a system that helps persons with visual impairment to see and guides them through the road, and the Portable Device to discover moving objects and obstacles as well as identify the movement and place of moving persons and devices which is used in security and crowd management.



Students of QU College of Engineering with their supervisor Dr. Khalid Abualsaud, during the presentation of the invention of the blood glucose level measurement system without a needle, at the International Inventions Fair in the Middle East 2023 in the State of Kuwait.

Managing Research Grants:

A Look into Qatar University's Post-Award



Prof. Abdelali Agouni

Manager of Post-Award, Research Support for Grants and Contracts Department, Office of the Vice President for Research and Graduate Studies, and Professor of Pharmacology, College of Pharmacy - Qatar University

The Research Support for Grants and Contracts Department at Qatar University is a vital resource for the University's research community. It serves as a liaison between faculty and funding sources, offering assistance with proposal preparation, identifying funding opportunities, and managing research contracts.

The department is responsible for three main functions: Pre-Award, Post-Award, and Contracts & Compliance. The Post-Award is responsible for overseeing a large and diverse portfolio of funds, including internal, external, and industrial grants and contracts. It manages a significant number of awards, with the University being awarded 432 new grants in 2021 alone. Of these, 326 were internal grants, while 119 were external. Currently, the Post-Award is responsible for managing over 566 active grants, including 168 QNRF grants, 50 industrial grants, 124 internal grants, and 224 student grants.

To ensure optimal support for grant administration within the University, the Research Support Department is ISO 9001 certified (2015 version) since 2020 and has recently been recertified for a further 3 years. This certification reflects the department's commitment to adopting the best practices and systems for providing excellent support to researchers.

The Post-Award provides support to Principal Investigators in managing their grants by handling daily operational and financial requests with utmost diligence and care. The Post-Award's operations include financial and personnel operations, human resource tasks, procurement requests, expenditure reimbursements, budget changes, travel requests, payment processing, and publication rewards. The Post-Award also supports clearance requests for faculty and researchers leaving the University and provides support for staff recruited on grants at the end of their employment period.

In addition to managing grants, the Post-Award also monitors grant activation, progress, and evaluation of outcomes by collaborating with the teams from Pre-Award and Contracts & Compliance, funding agencies, and collaborating institutions. It ensures compliance with funding requirements and timely activation of newly funded grants. The Post-Award coordinates with funding agencies, QU Finance, and PIs for the timely submission of technical and

financial progress reports of grants. It collects and analyzes data regarding research grant outputs and outcomes, including capacity building, papers, patents, reports, and prototypes, to maintain a database of grant outcomes and outputs.

The department is committed to supporting the research community at Qatar University, and the Post-Award plays a crucial role in managing sponsored research programs, facilitating compliance with funding agencies' policies and regulations, and supporting the growth of research at the University. In 2021, the Research Support Department supported 646 beneficiaries via externally funded grants and 747 students via externally and internally funded student grant schemes. The department also recruited 830 research assistants and associates on research grants, indicating the high level of research activities across the University supported by sponsored programs administered by the department.

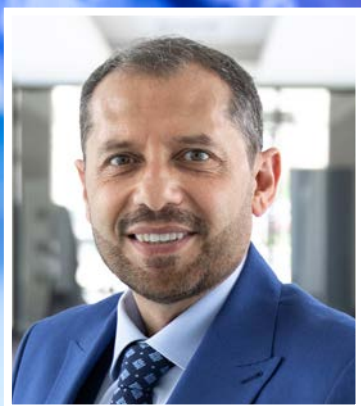
To ensure efficient operations, the Post-Award organizes awareness sessions for faculty and researchers, maintains ISO requirements for recertification, coordinates customer satisfaction surveys, and regularly reviews operations to identify deficiencies and implement necessary enhancements and improvements. The Post-Award's commitment to continuous improvement ensures that it provides excellent support to researchers and remains a vital part of the University's research ecosystem.

In addition to supporting the University's research community, the Research Support Department also fosters international collaborations. Up to 2022, Qatar University has research collaborations with over 351 international institutions across more than 130 countries. These collaborations have resulted in significant contributions to the global research community.

Qatar University is able to provide valuable support and resources to its research community, helping researchers to achieve their goals and make important contributions to their fields. As the University continues to expand its research programs and collaborations with other institutions, the Post-Award will undoubtedly play a crucial role in ensuring the success of these efforts.

Integrity and Ethics Governing the Conduct
of Scientific Research

Institutional Review Board



Dr. Mohamed Maged Emara

Head of Research Integrity and Ethics Section
at the Research Planning and Development
Department, Office of the Vice President for
Research and Graduate Studies, and Associate
Professor of Basic Medical Sciences, College of
Medicine - Qatar University

The Research Ethics and Integrity is one of the offices affiliated with the Research Excellence at the Research Planning and Development Department of the Vice President for Research and Graduate Studies Office. It supports the research community at Qatar University (QU) by providing advice and setting the necessary controls to ensure the integrity of scientific research and protect all parties involved in it. This is done through awareness sessions and training workshops, responding to inquiries related to research ethics, as well as initially reviewing/screening various types of research requests/ applications, which involves human subject participants, or the use of animals and/or biohazardous materials in research. The revision and decision of the applications are the responsibility of three specialized committees—whose members are appointed by a decree issued by the Vice President for Research and Graduate Studies, with the assistance of a number of locally and internationally qualified specialists in the office. Such activities will aid in preventing any potential legal or ethical problems that may arise due to non-compliance with the binding guidelines and controls created internationally as well as by the Ministry of Public Health in the State of Qatar. Hence, the office of Research Ethics and Integrity is the link between the institution (QU) and the Ministry of Public Health in the State of Qatar.

The three above-mentioned committees are considered independent committees, which follow the laws and regulations of the Ministry of Public Health regulating the ethics of scientific research. The **Institutional Committee for Animal Care and Use** reviews proposals involving the use of animals to ensure the correct use and humane care. The **Institutional Committee for Biohazards** is a committee responsible for ensuring biological safety at QU, and review research involving: RNA, or deoxyribonucleic acid, biological fluids extracted from humans or animals, infectious materials, and radioactive materials. Finally, there is the **Institutional Review Board**, which we will shed light upon in detail in terms of the history of its establishment, how it operates, and take decisions.

Institutional Review Board (IRB)

In the past, researchers used to carry out their research on human subjects without any ethical rules/ guidelines defining and protecting the rights of these subjects, which led to several psychological and physical damages to those participants. Hence, with the increase of the number of research containing human subjects, the principles of justice, respect, and freedom of the individual to participate in the scientific research were set out through establishing the IRB in many international research institutions with Qatar University being in the forefront. The IRB does not only develop strict ethical rules/ guidelines, but also obliges the researchers to comply with them to ensure the rights, integrity, wellbeing and privacy of the participating human subjects during and after the research. To be specific, the human subjects are defined as persons who volunteer to participate in the research whose data are obtained by the researcher through interacting with or observing them.

The IRB consists of at least five members of different specializations. They are the Chair of the Board, the Vice Chair, members of scientific specializations, members of non-scientific specializations and a member from the community. The members can be chosen from several specializations, such as nursing, medicine, pharmacy, law, religious fields and others, provided that all members of the Board do not belong to one single field or represent one gender. Additionally, the members should be qualified for reviewing the provided research activities and assess their compliance with the ethical and legal regulations as well as the professional practices, and the extent to which they protect the rights of the participants. Any member of the Board is not allowed to review any research in which he/she is a participating member, or it brings him/ her any financial benefit or interest.

The tasks of the Board include the following:

- Ensuring that the researcher reduces the risks of the activities that confront the participant to the minimum, and that those risks are proportional to the importance and goals of the research.
- Ensuring that the process of selecting the participants in the research is carried out in a volunteering and fair manner.
- Identifying the level of review required to the provided research proposal.
- Providing ethical consultation to the institution and its researchers.

- Monitoring and carrying out inspection visits to ensure that the researchers comply with the ethical and legal regulations.
- Providing continuous education for the members of the Board and researchers concerning the ethics of Scientific Research that contains human elements.

It is worth mentioning that the extent of reviewing and monitoring required from the Board over all research is determined based on the degree of risks it poses on the participant, so the research is divided into three sections:

- Research exempted from the ethical review that contains less than minimal risk to its participants, such as surveys distributed through the internet and whose questions do not cause any risk to the participants, and the researcher cannot recognize the identity of the participants.
- Research that requires the review of one or two members from the Board (expedited review), since it does not contain more than the minimum risks, i.e. the damage resulting from participating in it does not exceed what the participants face in their daily life, the usual procedures such as medical examinations, procedures and interviews.
- Research that needs the meeting of quorum of the Board to be reviewed (full review), because it contains more than the minimum risks, such as research that targets vulnerable groups (such as children who are younger than eighteen years old, pregnant women and prisoners) or research that requires using medical apparatus or performing surgeries to the participants. The majority of the present Board members should approve the research proposal.

Due to the unique nature of this Board, it holds the sole authority to determine the level of review required, and no researcher has the right to decide the degree of his own research without consulting the Board. Additionally, researchers must obtain the certified approval of the Board before beginning their research. Any modifications on the approved research study must also get the approval of the Board before implementation.

Qatar University established an Institutional Review Board in 2008 to safeguard human subjects from exploitation or danger and ensure their safety. The Board's goal is to protect people involved in research that contains human subjects, as their results are of great importance for developing living and health standards, as well as advancing various fields of science. The Board operates within the binding standards and guidelines of the Ministry of Public Health of the State of Qatar, and its role is to ensure compliance with these standards by all research institutions operating in the State. It is important to note that the IRB diligently evaluated and assessed over three hundred and fifty research projects last year, taking into consideration the level of potential risks involved in each of them. Additionally, the Board offered its reservations and provided recommendations to a number of projects in order to reinforce QU's commitment to ethical and scientific research integrity. Approximately one hundred and sixty research studies have been approved under the section of research exempted from ethical review, two hundred others under the section of expedited review, and three research studies needed full review.

The Role of Research Planning and Development Department in the Excellence of Scientific Research at Qatar University



Prof. Bassim Hammadi

Director of Research Planning and Development Department, Office of the Vice President for Research and Graduate Studies, and Professor of Chemical Engineering, College of Engineering - Qatar University



At Qatar University (QU), scientific research is considered a foundational element as it plays a crucial role in advancing science, and contributing to the development of society. As such, the impact of scientific research extends to all aspects of society. The emphasis on scientific research and research excellence constituted a significant component of QU's strategy 2018-2023. Accordingly, the University, represented by Research and Graduate Studies Sector, aims to ensure quality of research by providing a distinguished research environment, including establishing state-of-the-art laboratories and specialized research centers that have gained recognition both nationally and internationally. To ensure research is focused on priority areas, various research grants were revamped and made available to encourage researchers to align their research to QU's research priorities. Through the said grants, researchers were provided with opportunities for national, regional and international research collaborations with various institutions. Additionally, the University expanded on Graduate Programs by including research as a fundamental component.

The Research Planning and Development Department (RPDD), is committed to provide support to QU's researchers. Four main research pillars and research priorities for period 2021-2025 have been defined to achieve the University's objectives—Energy and Environment, Health and Biomedical Sciences, Information and Communication Technologies (ICT), and Social Sciences and Humanities. Several key areas have also been identified for each of the four pillars, including a set of key priorities, and other transformational priorities that support and consolidate the foundations of scientific research at the University, which are in line with Qatar's National Development Strategy 2018-2022 and Qatar National Vision 2030. This is in coordination with the Office of Graduate Studies and the Department of Research Support to create a supportive research environment that encourages research excellence, creativity, and research output to achieve the University's desired goals as a leading institution for Higher Education and Scientific Research.

The Office of Research Planning and Quality under the RPDD is responsible for the ongoing planning and evaluation efforts of the Research and Graduate Studies (RGS) sector, in addition to facilitating decision making through strategic planning efforts and quality improvements. Thus, the Research Quality Section aims to improve the quality, reliability, and safety of laboratories in research centers and colleges, raising such laboratories to international standards, and ensuring the quality of scientific research. To achieve this, the ISO Certification No. ISO/IEC 17025 was successfully renewed for the Center for Advanced

Materials, Environmental Sciences Center, Laboratory Animal Research Center, and Biomedical Research Center in the Research and Graduate Studies Sector, as well as, to the Gas Processing Center and the laboratories of the Department of Civil and Architectural Engineering at the College of Engineering. ISO is one of the most widely used standards for laboratories around the world and is awarded by the American Association for Laboratory Accreditation (A2LA).

The RPDD ensures that all research activities at the University comply with the policies, procedures and ethical standards of scientific research. To achieve this, the Policies and Administrative Initiatives Section works on developing and reviewing policies and procedures related to research and graduate studies in coordination with all concerned entities, to establish a strong research foundation. In addition, the Research Ethics and Integrity Section's responsibility is to grant approval for ethical compliance according to the nature of the research through three main committees, namely the Institutional Review Board (IRB) for research requiring human elements, the Institutional Animal Care and Use Committee (IACUC) for research involving animal-related subjects, and the Institutional Biohazard Committee (IBC) for research involving biological hazards. Ethical compliance approval has been granted for 226 research projects at the University during 2022. Furthermore, the section conducted a number of awareness sessions on ethical compliance for researchers and graduate students.

The Office of Innovation under the RPDD is responsible for registering, protecting and marketing patents and other types of intellectual property. The office holds various lectures and seminars and participates in various student and university events to educate and raise awareness of QU employees about the types of intellectual property and the importance and methods of protecting them. Inventors can seek advice through individual interviews before applying, to ensure that the intellectual property is properly identified. The Office's efforts have resulted in the registration of 92 patents over the past years.

The University's supportive research environment resulted in significant progress in research output in the past six years (2017-2022). According to the Scopus database, the number of publications reached 14,597 representing roughly 70% of the total number of QU Scopus indexed publications. The growth rate in publishing in the said period was 80%, as shown in (Figure 1). Additionally, scientific publishing was positively impacted during the Corona pandemic, as QU researchers were able to publish 1015 research papers specialized in the subject of Corona during 2020-2022.

The number of publications in 2022 was more than 3,150 in different disciplines and the contribution of the top five disciplines was 13.1% for Engineering, 10.9% for Medicine, 10.3% for Computer Science, and 6.7% for Social Sciences (Figure 2).

The percentage of QU publications in journals ranked in the first quartile of the Scopus database constituted 61.4% of publications during the period 2017-2022, serving as an indication of high quality research output. Additionally, the percentage of publications in the first and second quartiles combined accounted for 86.5%. The impact of these publications on different disciplines is demonstrated by the number of citations these publications amounted to (206,160 citations), and the average number of citations per publication (14.1 citations per publication), in the aforementioned period. To ensure continued high-quality and quantity of scientific publications, lectures and training workshops were organized for

researchers and graduate students on publishing in high-impact indexed journals across various disciplines.

The researchers also contributed effectively to research and publication to achieve the Sustainable Development Goals, and the Field-Weighted Citation Impact index for all goals was higher than the global average in this field.

As part of the Research and Graduate Studies Sector's initiatives to promote national, regional, and international research collaborations between researchers and various industries, organizations and institutions, researchers from multiple research centers and colleges have been able to offer services, consultancy, and joint research opportunities to numerous industries, organizations and institutions. As a result, Qatar University's research partnerships extends to more than 350 institutions around the world.

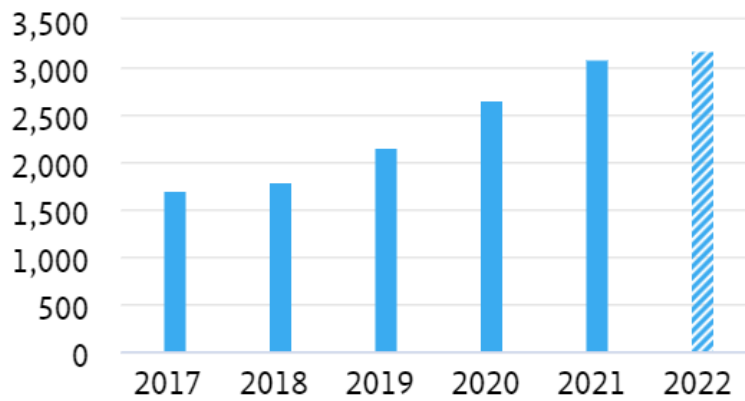


Figure 1. Number of Publications during 2017-2022 (Source: Scival, 10/3/2023).

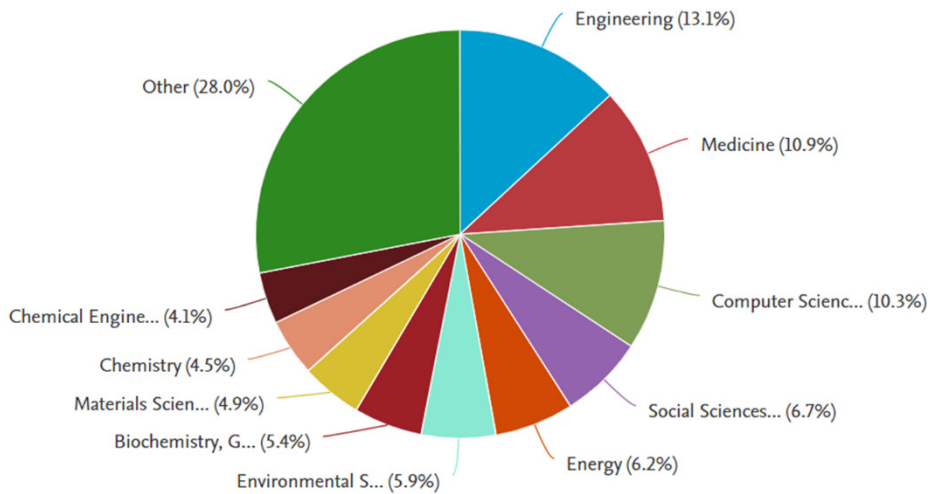


Figure 2. Percentage of Published Research Papers in Different Disciplines (Source: Scopus, 10/3/2023).

Establishing the First National Marine Macroalgae Database in Qatar

Dr. Noora Abdulla Al-Naimi

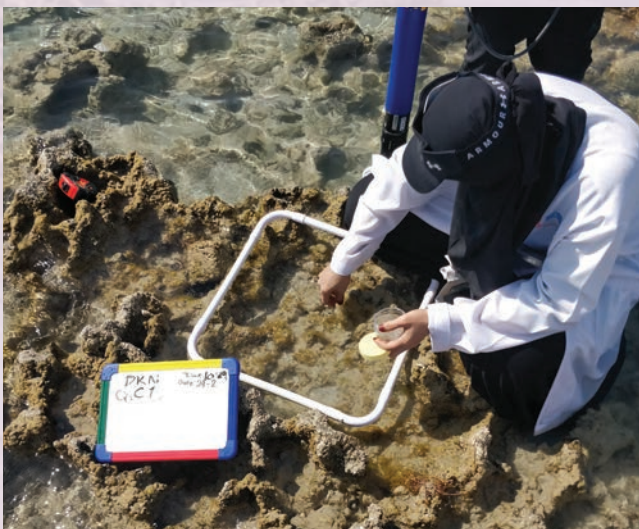
Senior Research Assistant, Environmental Sciences Center (ESC) - Qatar University



The research team while collecting samples from a coastal site in the State of Qatar.

Located at the Arabian Gulf, which is known as one of the warmest water bodies in the world, the Exclusive Economic Zone (EEZ) of Qatar has unique physical characteristics of highest sea temperatures and salinities. Yet, this unique environment holds a huge group of marine ecosystems that have all adapted to the high temperatures and salinities, which enrich biodiversity in the State of Qatar. The coastal waters of Qatar are home to diverse macroalgal communities that are classified into three major groups: chlorophyta (green algae), rhodophyta (red algae), and ochrophyta (brown algae). Considered as one of the most important marine resources in the world, marine macroalgae play a key role in marine coastal ecosystems' food web, as they are primary producers and providers of food for other organisms. Additionally, they are known for their important content of compounds that are extracted and used commercially in many pharmaceutical, medical, agricultural and biotechnological applications and industries such as food, biofuel and more.

Marine macroalgae in Qatar are a significant natural resource that has substantial potential for commercial exploitation in various aspects (environmental, economic, and medical) that have not yet been explored. Despite their value, they have not received much attention from taxonomists and researchers in Qatar, and therefore not well understood. Accordingly, as a first step to facilitate the process of exploring marine macroalgae in Qatar, it is necessary to create a comprehensive digital database that contains taxonomic and environmental information for macroalgae in Qatar's marine environment, which will help in the fast and accurate identification of macroalgae species in Qatar and will provide more data related to their classification and geographical distribution that can be used for biodiversity assessments in the country.



Method of collecting samples from the intertidal zone at a site.

Following Qatar University's (QU) keenness to enhance the research experience of students at the undergraduate level, and with the financial assistance of Qatar National Research Fund (QNRF), part of Qatar Research, Development and Innovation (QRDI) Council, a research team from QU consisting of Dr. Noora Al-Naimi, Senior Research Assistant at the Environmental Sciences Center (ESC), Ms. Aisha Al-Ashwal, Research Assistant at ESC and Ms. Fatima Hamza, Teaching Assistant at the Computer Science and Engineering Department (CSED), College of Engineering (CENG) is supervising a project to establish the "first national database of marine macroalgae" in Qatar. The project is a part of the Undergraduate Research Experience Program (UREP) and of an interdisciplinary nature, which in turn gives students the opportunity to acquire and exchange experiences in the fields of environmental and computer sciences.

A group of five students participated in this project, Ms. Kholood Sheryr and Ms. Raneem Mohamed, from the Department of Biological and Environmental Sciences (DBES), College of Arts and Sciences (CAS), and Ms. Somaya Eltanbouly, Ms. Muraam Abdel-Ghani and Ms. Wassia Al-Sanadi from CSED, CENG. The research team collected samples



Types of marine algae in Qatari waters.

of marine macroalgae from five sites distributed around the coastal region of Qatar, namely Dukhan, Umm Bab, Al-Shamal, Al-Khor and Al-Wakra during winter and summer seasons of the year 2022 and recorded environmental data during the collection in order to study seasonal changes. The collected samples were examined and classified scientifically according to regional and international classification references. A digital database is being created and developed to record all information related to the collected samples including scientific classification, microscopic images, temperature, salinity, etc. An online electronic portal will also be established as an interface that provides data to all interested researchers, regionally and globally. The name "QAlgae" was chosen for the database, where "QA"

stands for the well-known domain recognized for the State of Qatar and “Algae” stands for algae, which are the organisms we are focusing on in this project.

The expected output of this project will be the first most comprehensive digital resource on marine macroalgae in the region, which will be a valuable tool and reference for taxonomists, researchers and scientists nationally and internationally. It would be an important educational resource as it will raise awareness of the importance of marine macroalgae in Qatar as a natural resource and will play an important role in many research endeavors such as ecological studies, biodiversity, resource management and climate change.

The preliminary results of this project were presented as posters at Qatar University Annual Research Forum and Exhibition (QUARFE 2022). It is expected that the project will be completed and the online database portal will be launched during 2023.



Examination of algae samples and recording data of their scientific classification and geographical distribution.

This project contributes to the role of Qatar University in meeting the country’s research needs, which plays an important role in achieving the Qatar National Vision 2030. It falls into the “third core priority” of basic research, which deals with environment and biodiversity under the energy and environment pillar of the “research pillars and research priorities” of Qatar University. Additionally, this research project is significant to the mission of Qatar National Research Strategy (QNRS) particularly the goals and objectives of the Energy and Environment Pillar EE.4 (Understanding and Protecting Qatar’s Natural Environment) and the Computer Science and ICT pillar of QNRS, ICT.2 (Computing and Data Analytics). The project will provide a better understanding of marine macroalgae in Qatar through the creation of the first digital bank of information that will hold records about different marine macroalgae species collected in the country.

The project will also enhance capacity building in multidisciplinary research fields and give students the experience of research cooperation through practical exercises and teamwork. Moreover, it is expected to contribute towards the professional development of students, which would in turn open broad horizons for the future of participating students at the professional and educational levels. This project promotes future cooperation at the local, regional and global levels in the fields of scientific research, education and environmental consulting.

The project was funded by:

Undergraduate Research Experience Program (UREP28-207-1-047) from the Qatar National Research Fund, a division of the Qatar Research, Development and Innovation Council.

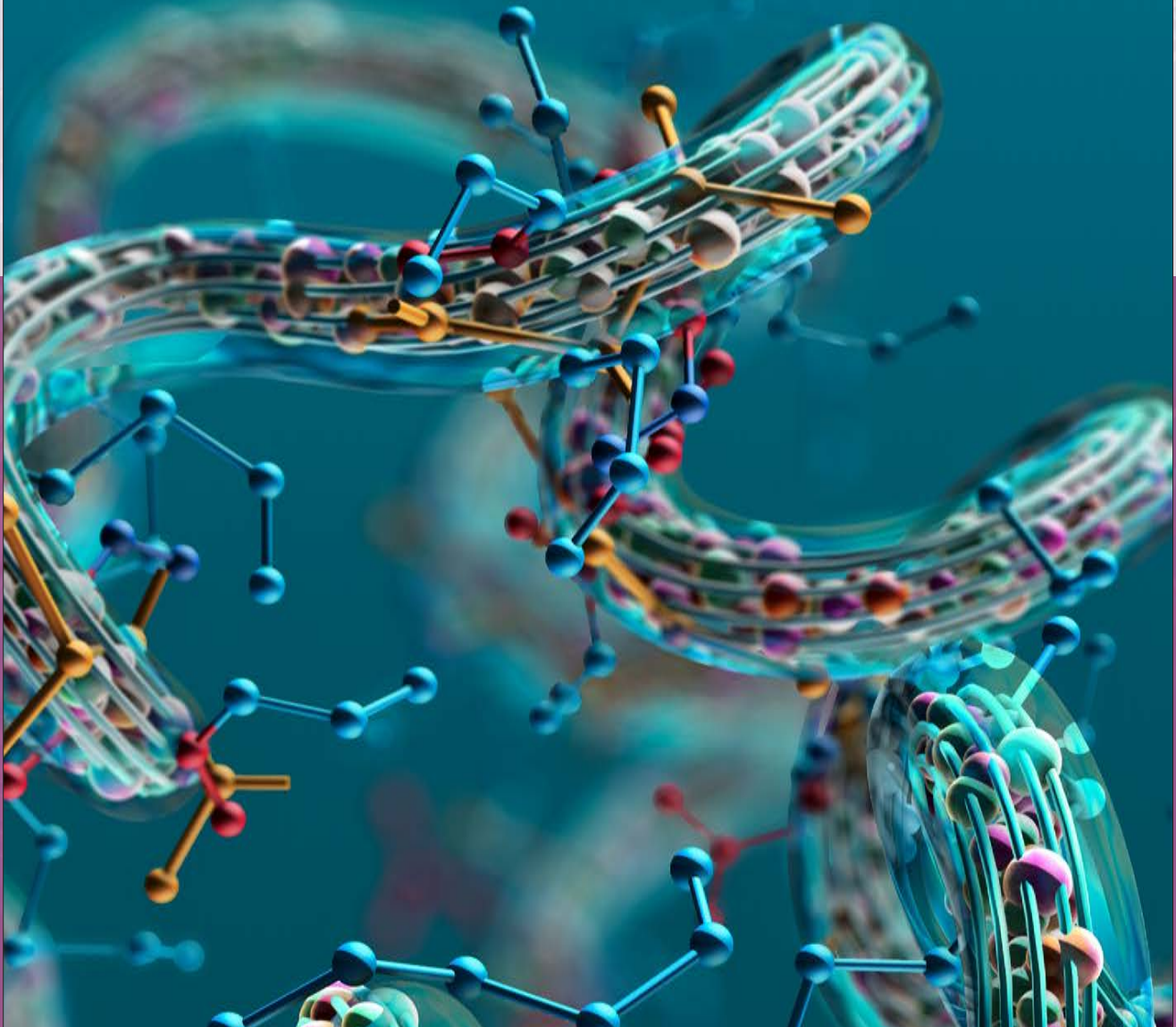


Participation of the research team in presenting a scientific poster for the project at the Qatar University Annual Research Forum and Exhibition 2022.

Innovative Approach in Diabetes Treatment: **GATA3 Inhibition Leads to Healthier Fat Distribution and Enhanced Insulin Sensitivity**

Dr. Layla Al-Mansoori

Research Assistance Professor, Biomedical Research Center (BRC) - Qatar University





Dr. Layla Al-Mansoori

Diabetes is a chronic health condition that affects millions of people worldwide. Type 2 diabetes is the most common form of the disease, and it is typically characterized by insulin resistance, which means that body cells are not able to use insulin effectively. This leads to high blood sugar levels, which can cause damage to the blood vessels, nerves, and organs over time.

In recent years, scientists have been working to better understand the underlying causes of diabetes and to develop new treatments for the disease. The latest breakthrough by scientists at Qatar University is providing hope for those living with diabetes, particularly Type 2. In a groundbreaking discovery, the team, including Dr. Layla Al-Mansoori, Research Assistance Professor and Dr. Mohamed Elrayess, Associate Research Professor, from the Biomedical Research Center (BRC), as well as, Dr. Hamda Abdulla Al-Naemi, Director of Laboratory Animal Research Center (LARC), uncovered a critical role of the protein GATA3 in the development of the disease. Targeting GATA3 (inhibition) has been known to be used in diseases such as asthma and ulcerative colitis, however, for the first time the scientists at QU Health, BRC and LARC investigated the effects of GATA3 inhibition on adipogenesis and insulin signaling in primary human preadipocytes and in vivo models. The inhibition was induced using GATA3 specific DNzyme encapsulated in liposome particles, which enhanced the efficacy of the inhibitor used.

The study findings were exciting. In vitro GATA3, inhibition was found to induce adipogenesis of primary human preadipocytes and enhance insulin signaling in insulin resistance in-vitro model. In vivo GATA3, inhibition promoted adipogenesis at the

site of injection and reduced omental tissue size, inducing fat redistribution.

These findings suggest that modulating GATA3 expression offers a potential therapeutic benefit by correcting impaired adipogenesis, promoting healthy fat distribution, improving insulin sensitivity, and potentially lowering the risk of T2D.

Additionally, the reduction in omental tissue size observed in the study suggests that inhibiting GATA3 could help distribute fat more evenly and improve insulin sensitivity. This makes the study not only offer a new approach to treating diabetes, but also opens up exciting possibilities in the cosmetic industry as a non-surgical alternative for fat distribution.

This work was patented at the United States Patent and Trademark Office that was published on December, 2021. The inventors Dr. Mohamed Elrayess and Dr. Layla Al-Mansoori, along with the office of Strategic Innovation, Entrepreneurship & Economic Development (SIEED) from Qatar University are exploring possible investments from international pharmaceutical companies.

In conclusion, the findings of this study offer a promising new approach to treating diabetes by inhibiting GATA3. While more research is needed to fully understand the effects of GATA3 inhibition and to determine the therapeutic efficacy for people with diabetes, these results provide a starting point for further investigation into the potential therapeutic benefits of GATA3 inhibition.

For more information about this research achievement, you can browse the following links:

<https://pubmed.ncbi.nlm.nih.gov/32795510/>

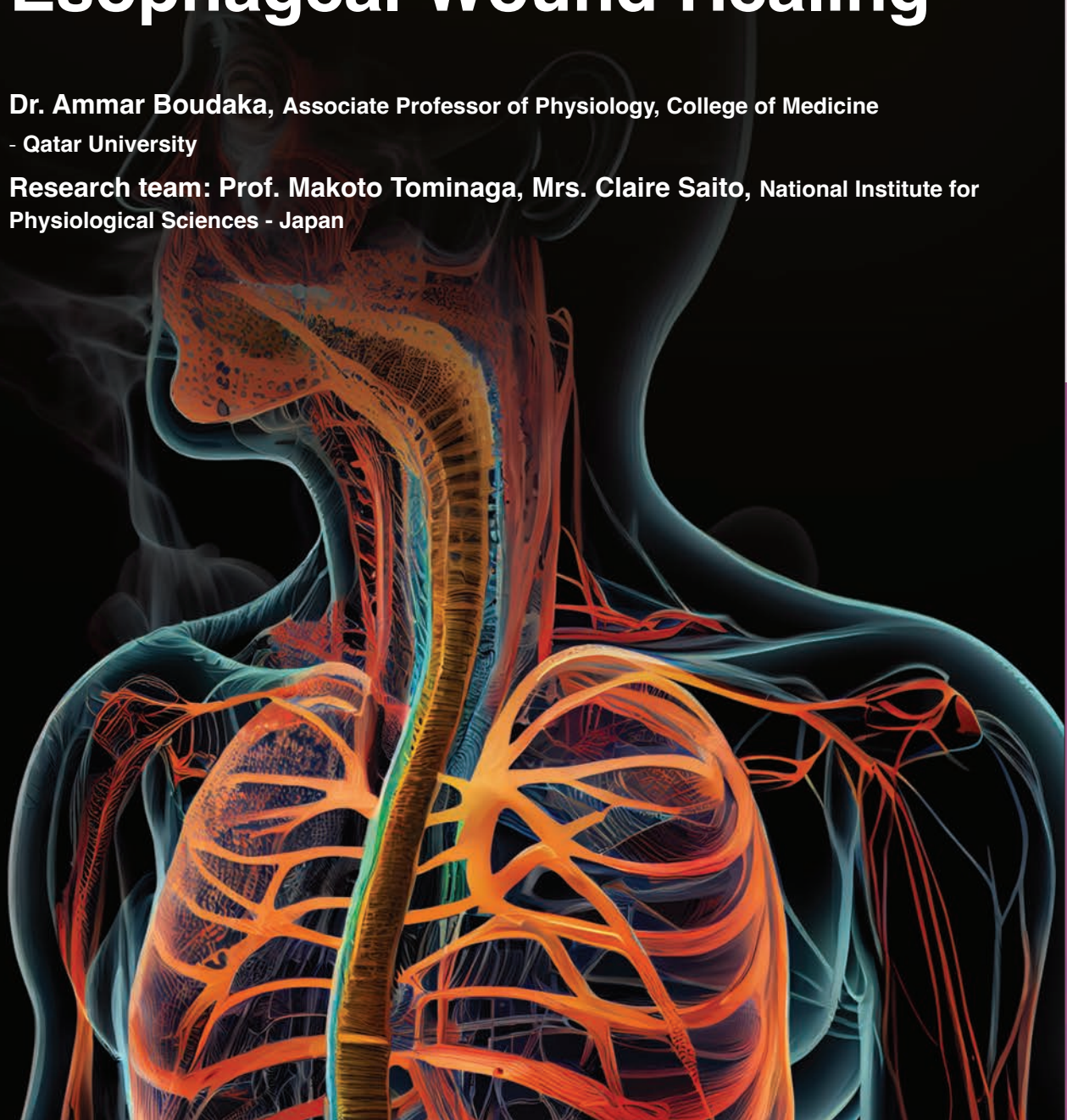
<https://pubmed.ncbi.nlm.nih.gov/36232443/>

Novel Finding:

A Cell Membrane Mechanoreceptor Modulates Esophageal Wound Healing

Dr. Ammar Boudaka, Associate Professor of Physiology, College of Medicine
- Qatar University

Research team: Prof. Makoto Tominaga, Mrs. Claire Saito, National Institute for
Physiological Sciences - Japan



The esophagus is a muscular tube that carries food from the pharynx to the stomach and is important for swallowing. Sentient responses to mechanical, thermal and chemical stimuli also occur in the esophagus. The esophageal mucosa has a specialized epithelium that forms a barrier against chemical and physical insults. Injuries to the esophageal mucosa can occur due to constant exposure to various stimuli and can lead to erosions and ulceration. Factors that affect epithelial wound healing include heat and calcium ion (Ca^{2+}). The molecular mechanisms that regulate wound healing of esophageal mucosa are not fully understood.

TRP channels are non-selective cation channels that mediate the influx of Ca^{2+} , Mg^{2+} and monovalent cations into different cell types. The mammalian TRP channel superfamily has 28 members, divided into six subfamilies based on their amino acid arrangement. TRP channels are expressed in various body tissues and play a role in regulating physiological processes such as cell proliferation, apoptosis, mechanosensation, and blood vessel tone. TRP channel activation can be triggered by a variety of physical and chemical stimuli including mechanical forces, heat, cold, ions, and small molecules. These channels are important in various facets of health and disease.

TRPV4 channel is a protein that was initially reported to be an osmo- or mechano-sensor that can be activated by moderate warmth, UV light and endogenous substances such as arachidonic acid and its cytochrome P450-derived metabolites, and endocannabinoids. It can also be activated by exogenous chemical stimuli. This channel is widely expressed throughout the body and contributes to numerous physiological processes. It is highly expressed in the mucosa lining the esophagus in mice and mediates ATP release in response to mechanical, chemical and thermal stimuli. Given its activity as a thermo- and mechano-sensor, and the roles played by heat and calcium in wound healing, TRPV4 is a possible candidate modulator that could have significant physiological effects in wound healing.

The research team from the College of Medicine at Qatar University and the National Institute of Physiological Sciences in Japan found that deletion of TRPV4 in esophageal keratinocytes results in enhanced migration and faster wound healing compared to wild-type (WT) cells (Figure 1A). When TRPV4 is reintroduced into the cells through transfection, the gap closure is reduced and the wound healing is slower in WT cells compared to TRPV4 knockout (TRPV4-KO) cells (Figure 1B). TRPV4 deficiency also affects the cell cycle and is



Dr. Ammar Boudaka

associated with increased esophageal keratinocyte proliferation, with a smaller percentage of cells in the G0/G1 phase and a larger percentage in the S phase among TRPV4-KO esophageal keratinocytes compared to WT cultures (Figure 1C). These results suggest that TRPV4 has a modulatory role in the migration and proliferation of esophageal keratinocytes, which could partly contribute to the difference in gap closure.

Application of cyclic tensile strains on esophageal keratinocytes, during the in vitro wound healing assay, significantly decreases the percentage of covered gap area in WT-cultured esophageal keratinocytes compared to cultures not exposed to mechanical stress. The effect is less pronounced in TRPV4-KO-cultured esophageal keratinocytes. Moreover, the percentage of covered gap area is smaller in WT compared to TRPV4-KO cells and the inhibition of gap closure by cyclic tensile strains is significantly larger in WT cells compared to TRPV4-KO cells (Figure 1D). These results suggest that mechanical stimuli, operating via TRPV4, can modulate esophageal wound healing

Stimulation of cellular exocytotic release of ATP using a specific stimulant (NPPB) results in a significantly slower wound healing in both WT and TRPV4-KO keratinocytes compared to their respective controls. The percentage of covered gap area is significantly larger for TRPV4-KO keratinocytes compared to WT cells when treated with NPPB (Figure 1e). The addition of exogenous ATP (a chemical compound) has a significant, concentration-dependent, reduction on the

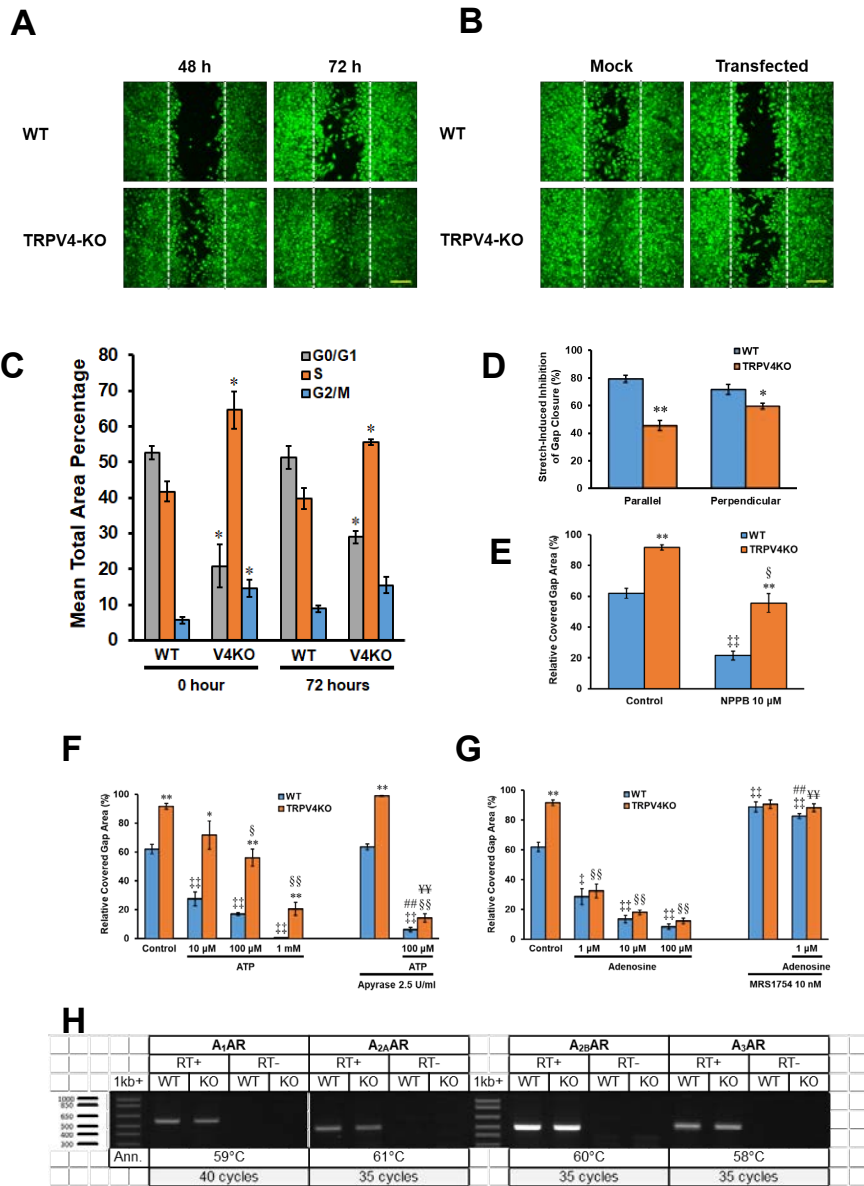


Figure 1. TRPV4 modulates esophageal keratinocytes wound healing.

A. Representative images of cultured WT and TRPV4-KO keratinocytes stained with calcein, 48 and 72 hours after wound induction. B. Representative images of cultured WT and TRPV4-KO keratinocytes transfected with mouse TRPV4 cDNA and stained with calcein (Scale bars represent 200 μm). C. The effect of TRPV4 deletion on different phases of the cell cycle in esophageal keratinocytes. D. Percent inhibition of gap closure induced by parallel or perpendicular stretch in WT and TRPV4-KO cultures. E. The effect of 10 μM NPPB on percentage of covered gap area in WT and TRPV4-KO cultures. F. The effect of ATP (10–1,000 μM) on the percentage of covered gap area in WT and TRPV4-KO keratinocyte cultures is shown on the left. On the right, the effect of 2.5 U/ml apyrase (ATP hydrolase) on the inhibition of gap closure mediated by 100 μM ATP is shown. G. The effect of adenosine (1–100 μM), in the presence and absence of selective A_{2B} adenosine receptor antagonist (MRS1754), on the percentage of covered gap area in WT and TRPV4-KO cultures. H. RT-PCR showing the transcription of all adenosine receptor subtypes with apparently higher transcription of A_{2B} adenosine receptor subtype in the esophageal mucosa of WT and TRPV4-KO mice.

percentage of covered gap area for both WT and TRPV4-KO cell cultures in an in vitro wound healing study. This inhibitory effect on gap closure is significantly larger for WT cells than TRPV4-KO cells (Figure 1F). Moreover, the addition of apyrase (an enzyme that breaks down ATP) to the culture medium significantly potentiates the inhibitory effect

of exogenous ATP on gap closure in both WT and TRPV4-KO cell cultures (Figure 1F). These results suggest that ATP released from keratinocyte slows wound healing via one of its metabolites.

Exogenous adenosine, significantly and concentration-dependently reduces the percentage of covered gap area in both wild-type and TRPV4-

KO cell cultures, indicating that adenosine can indirectly mediate the inhibitory effect of ATP on in vitro wound healing of keratinocytes (Figure 1G). RT-PCR shows that mRNA expression of all four subtypes of adenosine receptors (A_1AR , $A_{2A}AR$, $A_{2B}AR$, and A_3AR) is found in the esophageal mucosa of both WT and TRPV4-KO mice, with higher transcription levels of A_{2B} receptor, which is well known to mediate the inhibitory effect of adenosine. Additionally, mRNA of other genes such as Ck14 (esophageal keratinocyte marker), Slc17a9 (a gene encoding vesicular nucleotide transporter) and Gapdh (housekeeping gene) is present in the mucosa of both strains, and TRPV4 mRNA transcription is only present in the mucosa of WT mice (Figure 1H). Treatment of cultured cell with the selective A_{2B} adenosine receptor antagonist, MRS1754, significantly increases the percentage of covered gap area to levels comparable to that of TRPV4-KO cultures. Additionally, MRS1754 significantly reverses the inhibitory effect of

exogenous adenosine on gap closure in both WT and TRPV4-KO cell cultures (Figure 1G) indicating that adenosine slows wound healing via its action on A_{2B} receptor.

These results conclude that deletion of TRPV4, a non-selective mechanosensitive cation channel, enhances the migration and proliferation of esophageal keratinocytes, and accelerates in vitro wound healing. The study also found that mechanical stress inhibits in vitro wound healing in wild type esophageal keratinocytes compared to TRPV4-KO cells and that exogenous ATP, via its metabolite adenosine, inhibits gap closure (Figure 2). Taken together, this study suggests that the mechanosensitive TRPV4 channel plays a role in modulating esophageal wound healing.

Recent search link:

<https://www.nature.com/articles/s41598-020-68269-8>

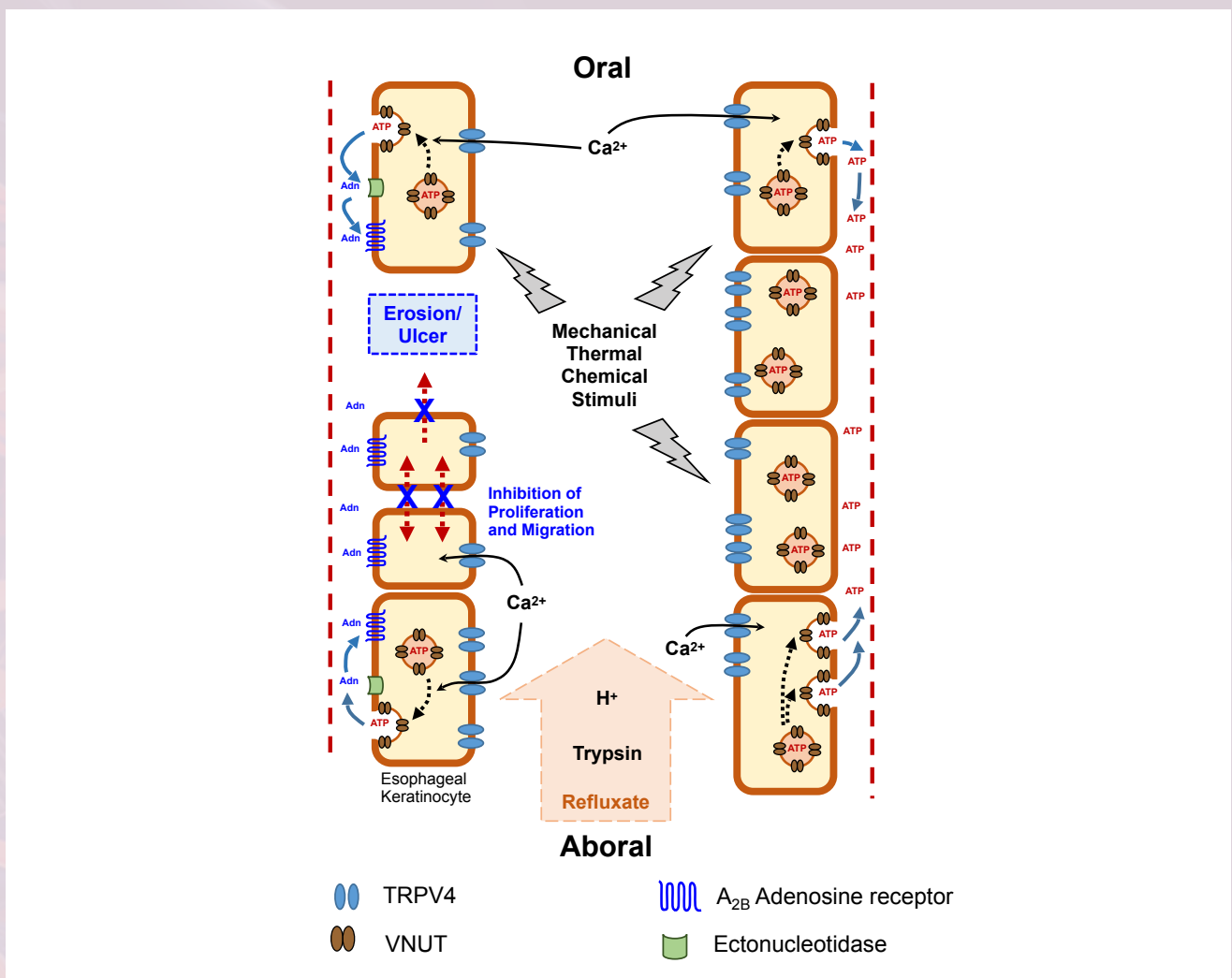


Figure 2. Functional expression of transient receptor potential vanilloid 4 (TRPV4) channel in esophageal keratinocytes and its possible role in wound healing via Ca^{2+} -dependent exocytotic ATP release. Adn = Adenosine, ATP = adenosine triphosphate, VNUT = vesicular nucleotide transporter.

Prof. Algharabat Receives Abdul Hameed Shoman Award for Arab Researchers for His Work in Economics and Administration Sciences

Prof. Raed Salah Abdelqader Algharabat

Professor of Marketing, College of Business and Economics – Qatar University



The Abdul Hameed Shoman Arab Researchers' Award has a serious reputation in Arab academic circles and has been able to maintain objectivity and respect among Arab researchers over its 40-year history. This award stands out among the scientific honors bestowed in the Arab world since it promotes the dissemination of scientific research and the development of practical solutions to real-world problems. It is considered the first Arab award that acknowledges scientific research and celebrates the tremendous contribution done by Arab researchers. Abdul Hameed Shoman Foundation, the arm of the Arab Bank for cultural and social responsibility, launched the Arab Researchers Award back in 1982, aimed at supporting and encouraging scientific research in the Arab world. Further, the award contributes to preparing and inspiring a generation of Arab researchers, experts, and specialists in various scientific fields, considering the limited capabilities and resources of institutions, universities, and individual researchers.

Recently, Prof. Algharabat, Professor of Marketing, in the College of Business and Economics received the prestigious Abdul Hameed Shoman Award for Arab Researchers in its 40th cycle in the field of Economics and Administration Sciences, under the theme "Impact of Digital Marketing in the Business World for the Year 2022." This award is given in recognition of an outstanding scientific output, in the fields of marketing, information system, and technology, whose pioneering distribution and dissemination contributes to an increase in scientific and applied knowledge, as well as solving significant problems of business enterprises in order to aid in growth, prosperity and improvement locally, regionally, and globally. Recently, Prof. Algharabat has been positioned amongst the top 2% researchers in the world. Accordingly, his research has been cited on Google Scholar more than 3200 times, providing authentic evidence on the strength and abundance of his research.

Following are the main research topics that enabled Prof. Algharabat to win the award:

1. Research on Virtual Reality. Prof. Algharabat's research in the area of 3D Virtual Models and their Impact on Consumer Behavior within the Online Retailer Context shows the importance of adopting 3D models to enhance consumer's virtual experience.

<https://www.sciencedirect.com/science/article/abs/pii/S0969698916306300>

2. Research on Social Media, particularly, Customer Brand Engagement, Online Community Engagement and Co-creation. The results show the importance of social media in building Customer Brand Engagement, Online Community

Engagement and Co-creation and hence building a long-term relationship with users.

<https://link.springer.com/article/10.1007/s10796-020-10041-4>

3. Consumer Behavior within Online Context and How to Increase Customers' Satisfaction, Loyalty and Commitment. The results show the importance of dealing with some important variables and adopting them by online companies in order to improve user experience, increase their satisfaction and loyalty.

<https://link.springer.com/article/10.1007/s10796-022-10264-7>

4. Utilizing Social Media Commerce in Emerging Markets to Influence Consumers' Behavior. The results show the importance of paying attention to social media platforms as tools for enhancing social commerce and thus increasing user engagement with companies' social media pages to enhance user experience.

<https://onlinelibrary.wiley.com/doi/abs/10.1002/cb.1782>

5. Adoption of Internet Banking and Mobile Banking within Emerging Markets. The results provide the most significant applications for decision-makers in banks that utilize the internet in their services to enhance the user experience.

<https://www.emerald.com/insight/content/doi/10.1108/JEIM-07-2019-0194/full/html>

6. Innovative e-marketing. This research focused on the most important pillars of innovative e-marketing; explained the way that innovation tools can support brands and increase user loyalty.

<https://www.sciencedirect.com/science/article/abs/pii/S0040162522002967>

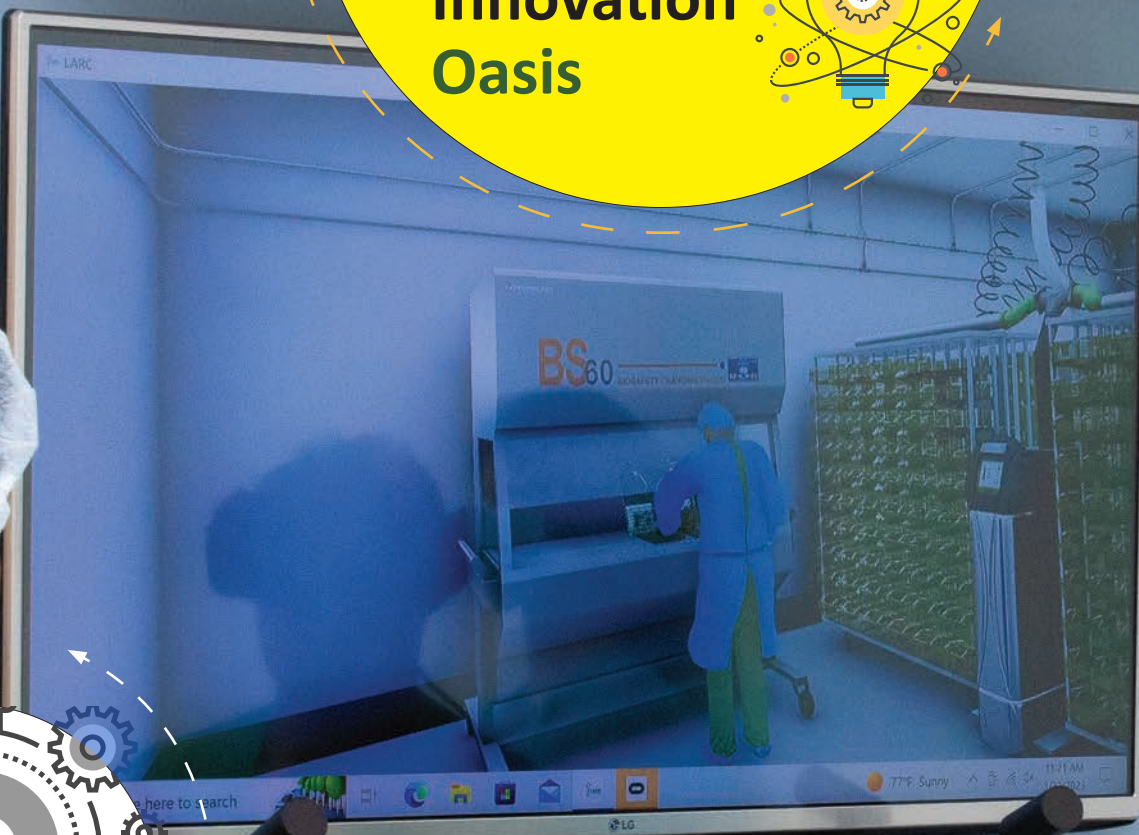
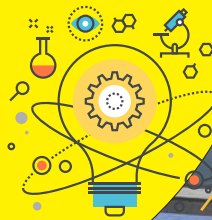
7. Brand Equity and its Impact on Consumers using Cutting Edge Technology. The results of this study show the most important mechanisms that companies can adopt online and to enhance and increase brand value from the end-users' perspective.

<https://www.sciencedirect.com/science/article/abs/pii/S0969698918308816>

8. Adoption of Artificial Intelligence (AI). The research efforts in this scientific paper focused on the importance of adopting artificial intelligence tools such as chatbots and their features to influence user experience and satisfaction. It also explored how AI tools can facilitate the work of companies and as a result help end-users to adopt such technology.

<https://www.emerald.com/insight/content/doi/10.1108/ITP-04-2022-0287/full/html>

Innovation Oasis



Interview with an Inventor:

Dr. Hamda Abdullah Al-Naemi

Director of Laboratory Animal Research
Center (LARC) - Qatar University



Implementation of a special training program simulating the real environment in the Laboratory Animal Research Center (LARC).

Copyright is a legal term describing the rights given to the innovators and originators concerning the works protected under the copyright, including for example literary and reference works, computer software, database, architecture works, geographical maps, technical drawings, and others. We are meeting Dr. Hamda Al-Naemi, LARC Director to learn about the Copyright Registration Certificate granted to her by the Innovation and Intellectual Property Office at Qatar University (QU).

Dr. Hamda, how would you make yourself known to the University community?

I am Dr. Hamda Al Naemi. I earned my PhD in the Physiological Sciences from the College of Medicine, University of Arizona- the United States of America. My area of specialty and research is Cardiovascular Biology, Physiology, and Immunology. I am the founder and Director of the LARC at QU and an Associate Faculty Member in the Department of Biological and Environmental Sciences at QU.

Would you tell us in brief about the Copyright Registration Certificate granted to you? How was it granted to you and for which type of work?

My Copyright is named Virtual Reality. The Animal House Team at the Center took part in this work. The Copyright was filed for QU and the LARC to appreciate the leading role of the University and the Center in supporting the Scientific Research standardized to use laboratory animals in scientific

research. The work type is Computer Software.

What motivated you to think of the idea that was filed as a Copyright?

I had this idea when I thought deeply about the reality and fact of using laboratory animals in scientific research, and the accompanying challenges and efforts in order to provide the best and the easiest opportunities for education and training to achieve the desired results. Furthermore, training to deal with laboratory animals, which is fundamental with regard to the humane and responsible use of experimental animals in scientific research. That is when I had the idea of using modern technology in a new offer to develop and implement the simulation of visual reality to provide training and reinforce the educational and training environment for researchers and students at QU in particular and in the State of Qatar in general to practice the latest available technologies for the use of experimental animals in distinctive research and taking care of these animals. This work allows transferring the real environment in which the animals exist at the Center, this environment is very distinguished, unique, sterilized, and free of pathogens, to a visual environment that allows the trainees to practice the right methods of handling the special machines used in taking care of the experimental animals as well as the correct methods used in scientific experiments of the laboratory animals.

This program provides training on ways of opening the animal cages, ways of holding animals, transferring animals from one cage to another,



During actual training in the labs of the Laboratory Animal Research Center (LARC).

ways of injection whether they are through veins, muscular, abdomen, or any other scientific methods needed and used by researchers when they do researches on experimental animals.

What distinguishes your idea of using Visual Reality Glasses from other ideas used in different applications in the field of science?

The idea of visual reality is not new, but using it to implement a special training program that simulates the real environment at the Center is a new thing. It is one of the steps and initiatives on which I have been working to reinforce the educational and research environment. In addition, it provides distinctive and unique experiences in the field of using experimental animals in scientific and applied research that aim at understanding the work of those biological systems and vital organs in health and disease to find solutions, diagnostic instruments, and cures for the benefit of the human and animal health at the same time.

What are the advantages of this work and what did it add to the LARC?

This work allows the trainee to use a visual environment that simulates the real environment at LARC, and to practice on the required information repeatedly until he/she is able to learn the foundations and the methods used in dealing with the experimental animals from rodents (rats and mice). When the training is completed, the program allows the trainee to take a test. When the trainee passes the test successfully, he/she will be able to continue training in the real environment which is the identical reality of the visual reality. This work has significant advantages that are useful for the trainee and the Center at the same time. It

allows the trainee to train in a comfortable visual environment and repeat the training several times until he/she achieves the level that enables him/her to move to the real Animal Laboratory and apply what he/she visually trained on in the presence of the specialized technical team. This program is very useful for the Center since it saves time, effort, and costs of the practical training used to enable the trainees to access the sterilized environment using the personal protection equipment.

How did the Visual Reality Classes serve Training in the LARC?

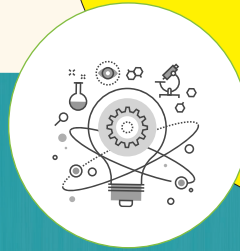
Currently, we are working on providing this program via digital platforms to allow trainees inside Qatar to access the program and complete the visual training and to give them the opportunity for actual training. In the future, this will be available for trainees outside Qatar.

As an influencing researcher, in your opinion, how do our students need to engage with the idea of innovation or invention?

To encourage the students to innovate, opportunities of learning about research and research capabilities at the University must be given to them. This could be offered as a fundamental part of the teaching courses. The faculty members should explain parts of their current research to their students and encourage them to visit their labs. They should urge the students or assign them to read scientific articles of content related to the courses. In addition, the new students should be allowed to visit the research labs of the inventors, be it labs where faculty members work, as well as the labs at different research centers.

What is your outlook for the future with regard to this Technology?

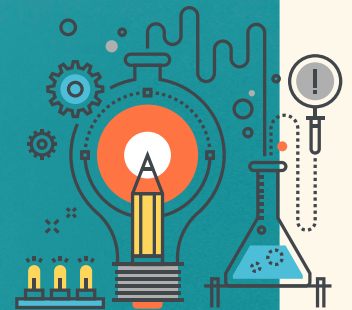
Experimental and applied research on laboratory animals is very expensive and needs a lot of training so that the trainee or the researcher can perfect the ethics and foundations of researching living animals as well as ways of taking care of these animals to be permitted to do research on them. This takes a lot of time, so I think that this technology will have a promising future in Digital Education and that it will become one of the future education means when it is integrated into education courses because it will allow the student to learn through a simulation of what is existing in the Center. This will contribute to minimizing the time of training and inspire the students to engage into the training programs related to using experimental animals in scientific research.

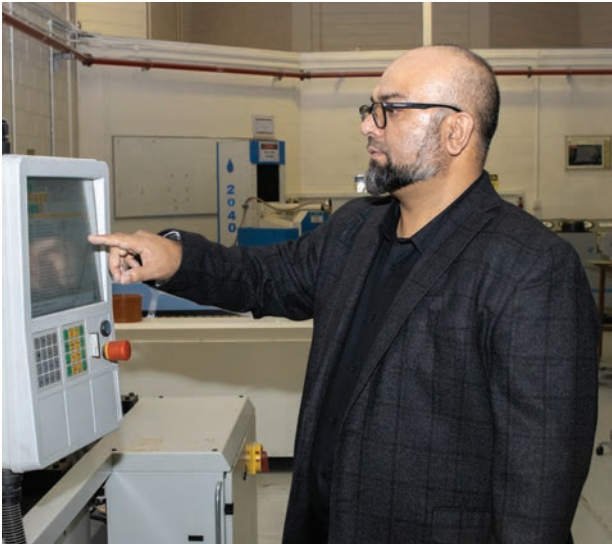


New Medical Safety Syringe Designed to Avert Stick Injuries and Wounds

Prof. Faris Tarlochan, Professor of Mechanical Engineering, College of Engineering
- Qatar University

Sami Alkhatib, PhD Candidate - the University of Western Australia





Prof. Faris Tarlochan



Sami Alkhatib

Needle stick injuries are wounds caused by needles that accidentally puncture the skin. Accidental needle stick (stab) injuries or exposure of used needles and other sharps pose serious health risks, such as the transmission of infections and blood-borne viruses, including Human Immunodeficiency Virus (HIV) which leads to AIDS (Acquired Immune Deficiency Syndrome), Hepatitis B, and Hepatitis C or other viruses. Conventionally, safety syringes have a protective cap, a cylinder, a plunger and a cannula mounted on a cannula base. To prevent

the problem of accidental stabs of needles, multiple concepts of safety syringes have been designed and implemented. Their complexity varies across a wide range as well as their costs to achieve the same purpose of preventing accidental stabs. An excellent example is the safety syringe shown in Figure 1 (patent US6287279B1) "QSafe[®]", owned by a Qatari company. The syringe is comprised of a cylindrical barrel with an opening at the distal end and a small nozzle at the top, a plunger, a cannula, and a cannula protective cap. The needle base resides on top of the plunger, and the cannula can be attached to the base. The plunger is slidably mounted into the barrel through the distal open end. The syringe incorporates the safety mechanism, where when the needle is used to withdraw medicine by retracting the plunger, the needle does not move. However, when the medicine is injected/delivered/discharged by pushing the plunger, the needle can be retracted inside the barrel by fully retracting the plunger. The needle is then tilted inside the barrel facing away from the nozzle to prevent pushing it out, reaching the locking position. The issue with this design is that if the plunger is pushed again with enough force from its retracted position, the cannula can penetrate the walls of the barrel easily, which defeats the safety purpose of the design. Hence, the need for a new safety syringe concept that overcomes the problem above by adding an extra safety layer to their existing safety product.

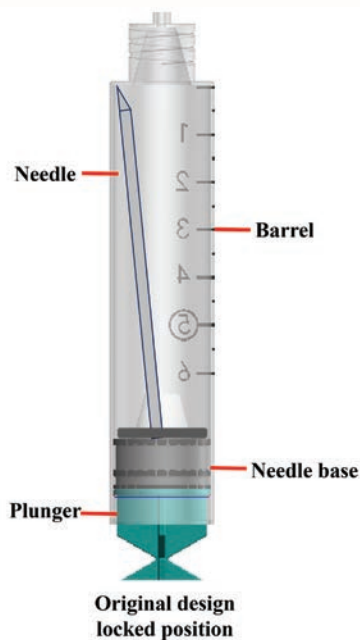


Figure1 . Safety Syringe Illustration.

As mentioned in the previous section, the design has to have an extra layer of safety to eliminate the problem of potential wall penetration of

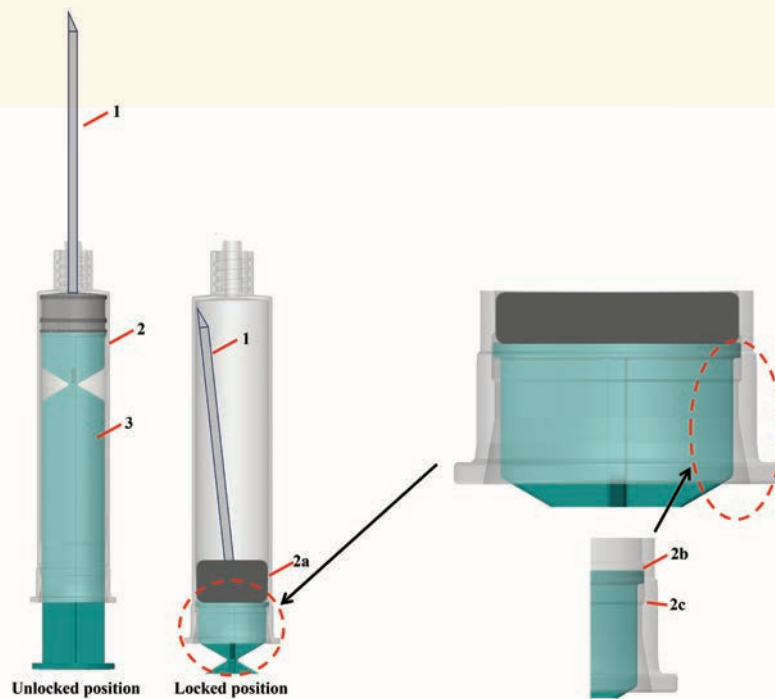


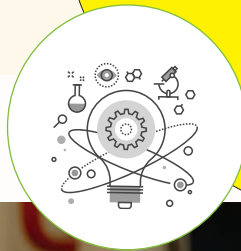
Figure 2. Design Description of Safety Syringe.

the existing safety syringe. This means that the current safety feature has to be part of the new design, hence providing a safety syringe of two locking safety mechanisms. However, developing a new safety mechanism may require many modifications to the existing production line and production machine, which may prove costly. Moreover, a newly designed locking mechanism may not be compatible with the already existing design by the Qatari company. The final design concept is illustrated in Figure 2, which represents an assembled, ready to use, syringe. The embodiment in the figure comprises a cannula/needle 1, a barrel 2, and a plunger 3. The plunger 3 is pushed inside the barrel 2 during assembly, while the needle 1 is clamped on top of the plunger 3.

Figure 2 shows the syringe assembly after the user has first retracted the plunger 3 to withdraw the medicine. The barrel 2 diameter is advantageously reduced at 2a, which strikes the plunger upon its first retraction. The reduced diameter 2a serves as to provide resistance to the plunger upon the first retraction and gives an indication to the user to stop withdrawing the plunger to prevent it from reaching its final locked position. The diameter keeps reducing after section 2a, and it is dimensioned precisely to allow the plunger retraction to its locked position easily. When the plunger 3 is pushed again to inject the medicine, the cannula base connected to the needle 1 attaches to the plunger 3. Hence, upon the second plunger 3 retraction, the needle 1 will be withdrawn into barrel 2. The figure illustrates the syringe assembly after the plunger has been

retracted again into the barrel to secure it in its locked position. When the plunger is retracted after injection, the needle is withdrawn due to its attachment to the plunger via the cannula base. Once the plunger reaches section 2a, the needle passes the proximal open end of the barrel entirely. The needle then tilts to the side facing the barrel's walls by virtue of the cannula base. Upon further retraction of the plunger, the plunger passes through section 2a to reach its final position.

For the present invention, a locking mechanism is designed on the distal portion of the barrel of a universal syringe. The universal syringe allows the use of different cannulas of different sizes and thus various applications. The locking mechanism on the barrel surface eliminates the need for any additional syringe part, therefore, reducing the complexity and lowering the cost. The locking mechanism works well for syringes with barrels of different sizes. The two notches can be easily scaled up or down according to the barrel's size. Another advantage of the surface notch design is that they can be manufactured easily. The conventional manufacturing method of medical syringes is injection molding, where male-female mold is used to produce the barrel. This eliminates the complexity associated with the additional syringe parts, and the need to purchase a new mold or create a new assembly line. Moreover, the locking mechanism can also be used in any safety syringe with a pre-fitted safety mechanism and thus adding an extra layer of safety. This design was awarded a patent on August 2022 and is in discussion with a Qatari company for potential application.



Thermal Energy Storage Materials for Effective Energy Management in Bioclimatic Buildings and Greenhouses

Prof. Igor Krupa

Research Professor, Center for Advanced Materials (CAM) - Qatar University

In Qatar, the relatively harsh climate leads to temperatures up to 45 °C during the long summer, and as low as 5 °C during the short winter, which is associated with large consumption of energy, particularly for air conditioning. In general, it was estimated that buildings consume over 40% of global energy use.

Buildings' designs that preferably consider local climate conditions and utilize energy coming

from the environment are called bioclimatic buildings. The most common source of energy that can be employed to cover the energetic requirements of buildings is the sun. For this reason, intensive research is focused on the development of materials that effectively absorb and release thermal energy coming from the sun to insure thermal comfort with minimal use of electrical energy. On the opposite, in case solar

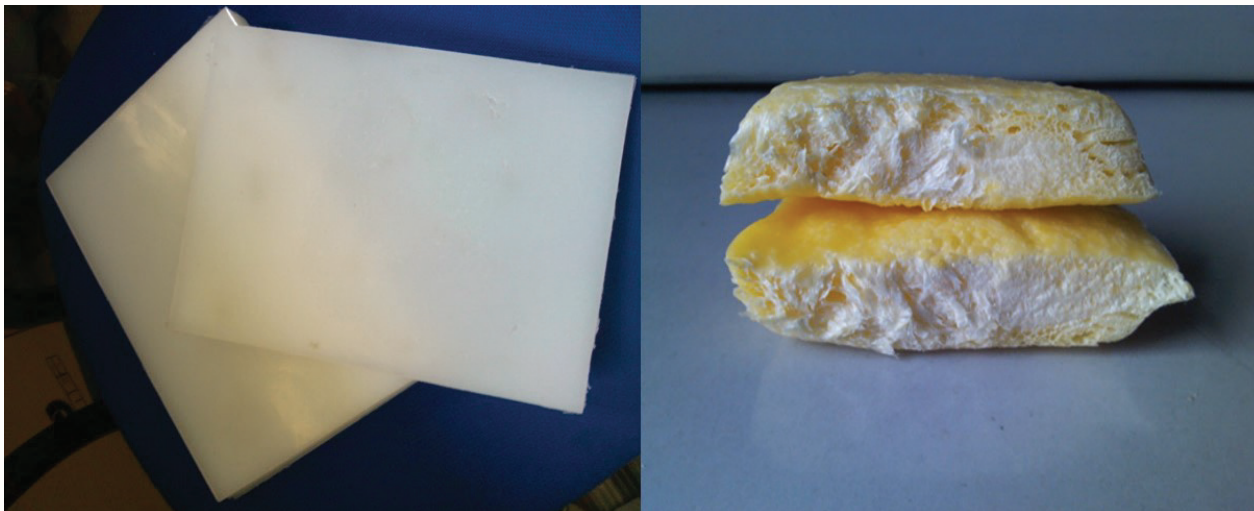


Figure 1. Polyethylene/paraffin wax phase change materials. (Left Blocks, Right Foams).

energy is excessive and leads to overheating of buildings, the materials should efficiently contribute to the cooling of constructions. In both cases, specifically designed materials with specific properties can contribute to electrical energy saving.

The research deals with the preparation and characterization of Thermal Energy Storage Materials commonly called Phase Change Materials (PCMs). PCMs, in general, are materials that can undergo a phase transition between the solid and liquid phases at the selected temperature while absorbing or releasing a high amount of thermal energy, which is proportional to their specific enthalpy of melting. The polymeric PCMs are based on plastics (particularly polyethylene and polyethylene waste), paraffin wax, and thermally conductive fillers enhancing the thermal conductivity of materials and controlling the rate of heat transport in a desired way. The research on thermal storage systems has been continuously realized at CAM over the last ten years, and the research outputs were published in many papers and one patent. The materials were designed in the form of blocks and foams. The preparation of foams from polyethylene/paraffin wax blends represents an original approach and was patented (insulating plastic foams based on polyolefins, US2018/0291166A1). Foamed PCMs have double functionality—firstly as standard heat absorbers and secondly as thermal insulators which will insure better heat protection of buildings against overheating. Two examples of polymeric PCMs demonstrating both structures (bulk slabs and foams) are shown in Figure 1.

A specific type of construction is greenhouses (GH) which are closely associated with agricultural strategic investment projects for vegetable production in Qatar. Also, in this case, the development of effective heat absorbing and releasing materials is needed, which, after installation into GH will passively contribute to energy saving. In general, it is strongly requested for efficient cooling and heating in different growing seasons to promote all-seasons feasible farming. Currently, a collaborative NPRP13S-0127-200177 project between CAM, AGRICO Qatar and Qatar Petrochemical Company (QAPCO), plus partners from Tomas Bata University in the Czech Republic, entitled “Greenhouses for Qatari Climate: Energy Saving Smart and Sustainable Phase Change Materials (Green3SPCM)” is realized to contribute to the energy saving, particularly for cooling. The thermal storage systems having optimized functionality are currently developing and testing. The main challenge is the large-scale production of final sheets of the order of tons.

This project is aligned with the Center for Advanced Materials at QU to enhance and support interdisciplinary research on materials science and engineering by conducting applied research projects and providing knowledge and experience that meet the needs of industry and society. The project combines materials science and characterization with energy and environmental engineering. The work is performed in close cooperation with QAPCO, which offers materials as well as expertise and AGRICO, which provides a real greenhouse for installation and testing.

Inventor Business Card

How would you make yourself known to the Qatar University Community, Dr. Kamel?

In 2005, I obtained my Bachelor's Degree in Chemistry from Al Azhar University in Egypt. Then in 2011, I obtained my Master's Degree in Applied Chemistry from Helwan University in Egypt. In 2016, I obtained my PhD in Analytical Chemistry from the Chinese Academy of Sciences in China in cooperation with the National Institute for Materials Science (NIMS) in Japan, by a scholarship from the World Academy of Sciences (TWAS-UCAS). From among 140 international students, I was the first to graduate from this program.

I had worked at the American University in Cairo (AUC), Changchun Institute of Applied Chemistry (CIAC), and Zhejiang University of Technology (ZJUT) in China before I moved to Qatar University (QU). My work is focused on developing Nano systems to convert and produce clean energy through electrochemical reactions such as fuel cells and water electrolysis to produce green hydrogen, in addition to inventing catalysts to convert harmful gases into useful materials and developing Nano sensors to detect gases and radiations. I have published over 100 research papers in international journals and participated in over 30 international conferences. I published a book in the Royal Society of Chemistry in London and filled 15 patents at the US Patent and Trademark Office.

Would you tell us about the most important patented inventions you filed in QU?

Yes, they are:

- Catalyst Carbon Converter (US11299395B2) to convert greenhouse gas into useful and compound gases, the price of which is 50 times less than the existing converter in the market.
- Nano Carbon Electrodes (US20210221684A1) for seawater desalination that can remove 33% of seawater within only 30 seconds at room temperature and the standard air pressure.
- Multi Dimensions Nano Systems (US11311843B2) for the removal of petrol wastes and seawater desalination that can remove petroleum wastes within only 17 minutes at room temperature and atmospheric pressure.

How does QU create the suitable environment for inventions and innovations?

There are several specialized research centers, central laboratories, and workshops at QU. In addition to several funded projects and a patent office. There is also a free work environment, which assists innovation. Moreover, innovation can be increased by establishing specialized laboratories, increasing the number and value of the



Dr. Kamel Eid

Associate Researcher, Gas Processing Center, College of Engineering - Qatar University



specialized innovation internal scholarships, increasing the fund for filling patents, as well as establishing a partnership with the government authorities and companies in the State of Qatar to encourage innovations.

You have an invention that deals with Water Purification, in your opinion, what innovations do we need for a clean, sustainable environment?

I have more than one invention in the field of purification of polluted water and desalination of seawater by using inexpensive and clean technology. In the State of Qatar, we need many local inventions for the purification of water polluted from petrol wastes and industrial pollutants at room temperature and standard air pressure.

QU students made some distinctive innovations that won prizes in the national and international forums, how would you describe your experience with the students' research?

I have had a strong experience with the students' research since I have several master's students who have filled more than one invention and published several research papers in international journals, but they need more support and special scholarships.

What are your research goals for the academic year 2022-2023?

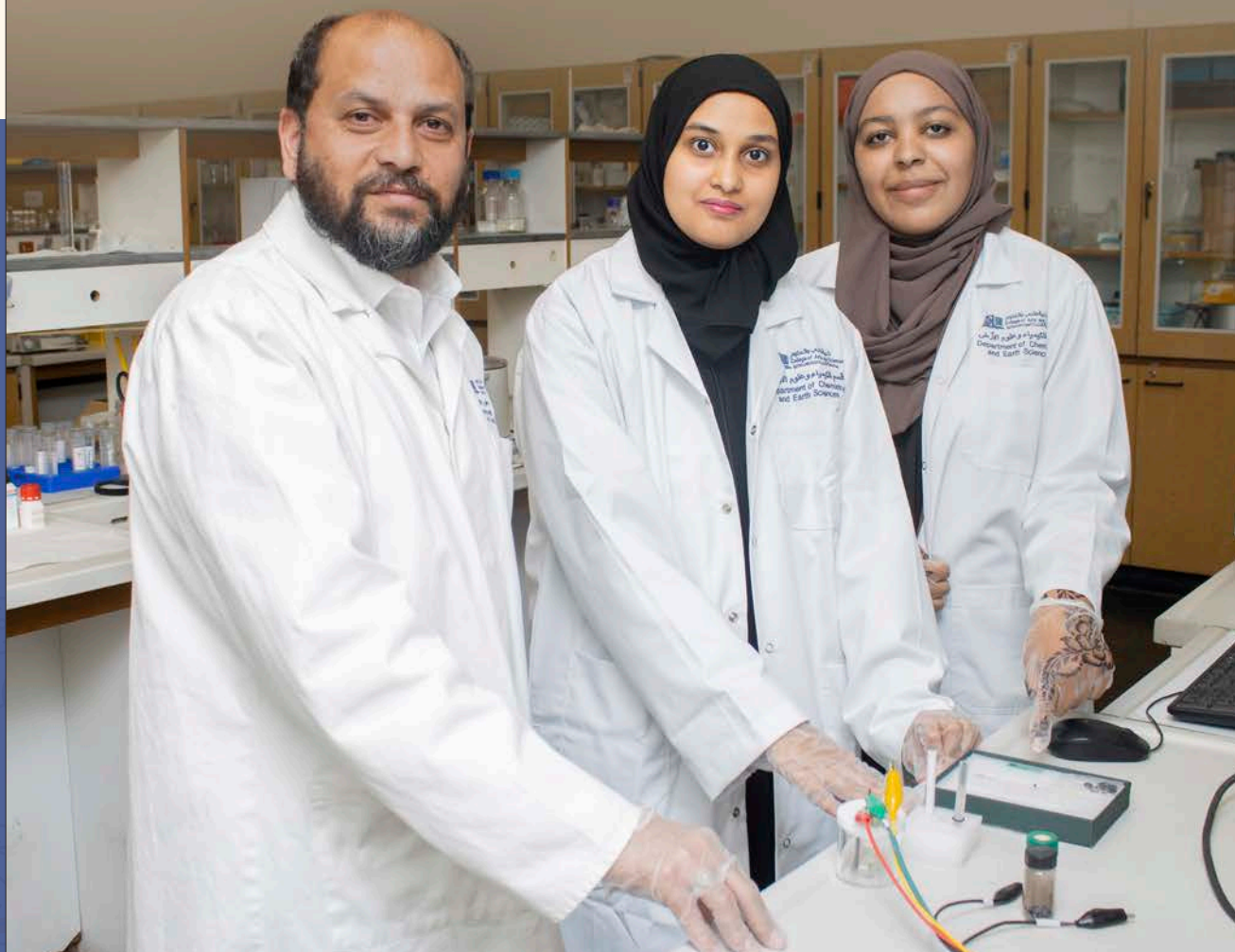
- Increasing scientific publications in reputable international journals with an impact factor of more than 10.
- Fostering a group of Qatari and Arab innovative researchers empowered with the ability to solve the problems of and developing the State.

Developing Reduced Graphene Oxide-coated Polyurethane Sponge and Cotton: Promising Materials for Oil-water Separation Applications

Maimoona Mohamed, Nada Yahya Deyab, Undergraduate students, Department of Chemistry and Earth Sciences

Supervisor: Dr. Shabi Abbas Zaidi, Associate Professor of Analytical Chemistry, Department of Chemistry and Earth Sciences

College of Arts and Sciences - Qatar University



From left: Dr. Shabi Zaidi, the project supervisor, student Maimoona Mohamed, and student Nada Yahya.

Oil spilled during transportation, domestic, and industrial usage causes grave water and soil pollution. Therefore, oil recovery through absorption or separation from water has been a challenge to the scientific community. The 3D porous structure of polyurethane (PU) sponge attracts significant attention in oil-water separation applications. However, its poor hydrophobicity decreases and limits its oil-absorption efficacy dramatically. In this paper, we focus on improving the hydrophobicity of the sponge by modifying it with graphene oxide (GO) followed by its reduction to reduce graphene oxide (rGO) via a commonly available green reducing agent, L-ascorbic acid (L-AA).

To begin, we synthesized GO using the method as described to synthesize the GO. Briefly, 1g of graphite flakes was mixed with 23ml of 98% H_2SO_4 (fume hood was used while adding H_2SO_4) and stirred for 24 hours at room temperature. Then,

100mg of $NaNO_3$ was transferred to the mixture, stirred for 30 minutes. It was then kept in an ice bath below $5^\circ C$. 3g of $KMnO_4$ was added slowly to this mixture, and the resulting mixture was heated to $35-40^\circ C$, gently stirred for about 30 minutes, and then 46ml of water was added gradually for 30 minutes. Finally, 140ml of water and 10ml of 30% H_2O_2 (H_2O_2 stops the oxidation process by reacting with $KMnO_4$) were added to stop the reaction. The resulting product then centrifuged to remove any un-oxidized graphite. The GO was dried as a powder after washing it thoroughly with ethanol (the grayish black precipitate). Individual sheets of synthesized GO were dispersed in distilled water at a concentration of 0.1mg/ml later for reduction and modification studies.

rGO-PU sponges were fabricated via a green method that uses L-ascorbic acid as a reducing agent with some modifications as described. Firstly, the PU sponges were cut into small pieces of $\sim 2 \times 2$ inches. They were thoroughly rinsed with distilled water and acetone, and then dried for about 24 hours at room temperature. To modify the PU sponge surface, an aqueous dispersion of 0.1mg/mL of GO was prepared via sonication and then 1mg/mL of L-AA was dissolved in it. The dry PU sponges were dipped into this mixture and left for 48 hours with mild stirring. After 48 hours, the PU sponges were removed from the mixture, washed with DI water, and dried to obtain rGO-PU sponges. Finally, the rGO-PU sponges were stored at room temperature for further use. A similar protocol was employed to obtain rGO-cotton. The modified surfaces (rGO-PU and rGO-cotton) exhibits the absorption behaviour and water contact angles of various bare and modified substrates for the oil and water droplets (Figure 1).

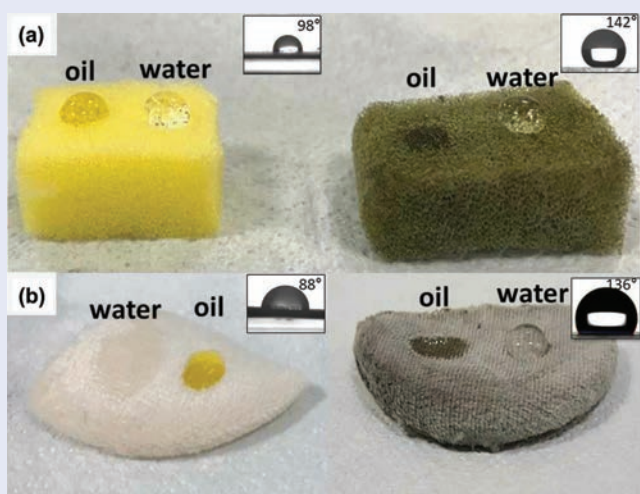


Figure 1. Digital images of oil and water drops' behaviour on (A) bare PU sponge and rGO-PU sponge and (B) bare cotton and rGO cotton.

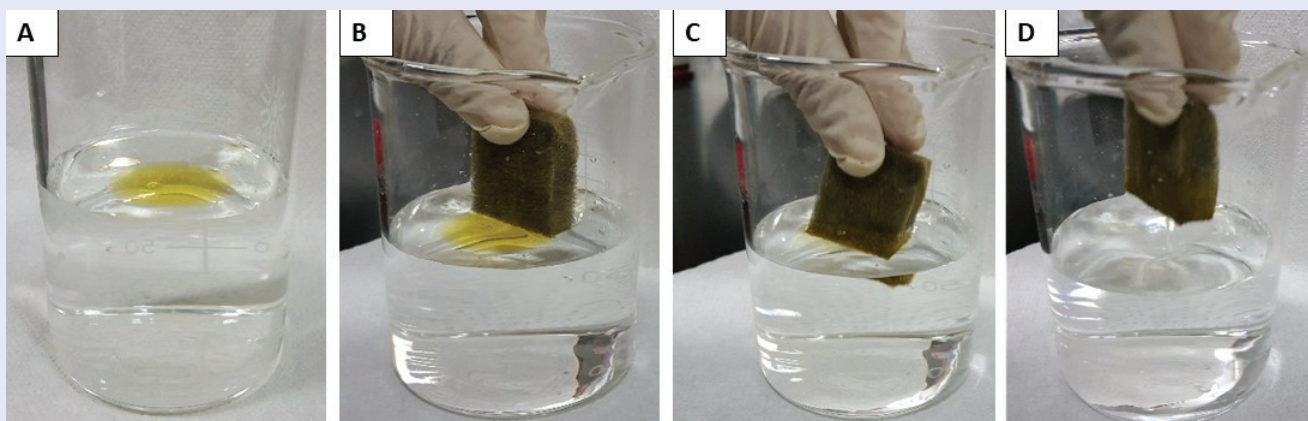


Figure 2. Digital images of selective absorption of an oil in oil-water mixture by the rGO-PU sponge.

The rGO modified PU sponge was used to absorb and collect oil from an oil-water mixture with satisfactory recoveries of up to ~ 97% (Figure 2).

Moreover, the prepared rGO-PU sponge exhibited excellent reusability and compressibility without any crack or leaking. Finally, we compared the results of this study with rGO modified cotton (rGO-cotton) surfaces prepared via the same protocols (Figure 3). The results show that the high compressible and porous nature of sponges

(rGO-PU) outperformed the rGO-cotton for various samples (Figure 4).

This research work was proven to be environmentally friendly and cost-effective absorbent for efficiently extracting oil from oil-water mixtures with fewer toxic chemicals and cheap raw materials utilization. The as-developed rGO-PU sponge and rGO-cotton are a promising material for oil spill recovery from oil-water mixtures in domestic wastes, industrial wastes, and the ocean.

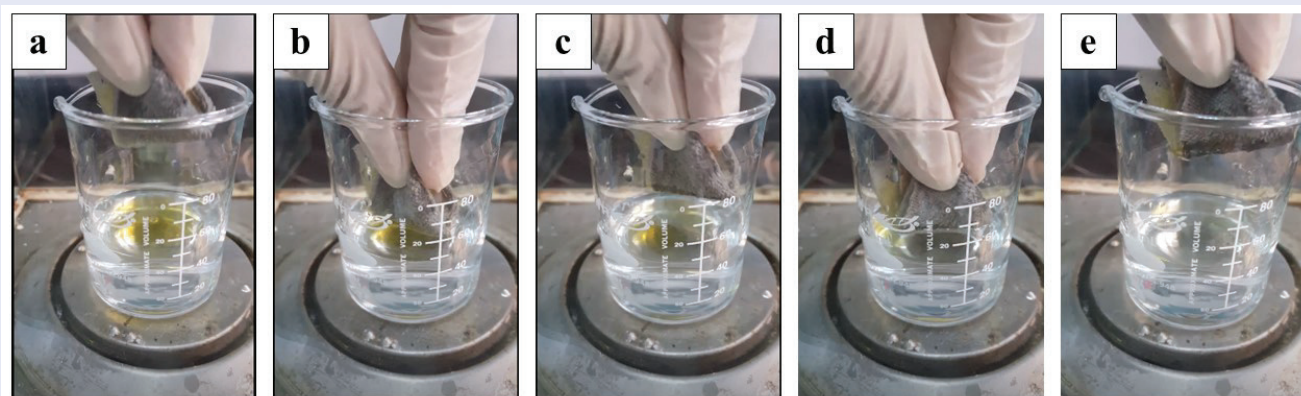


Figure 3. Digital images of selective absorption of an oil in oil-water mixture by the rGO-cotton.

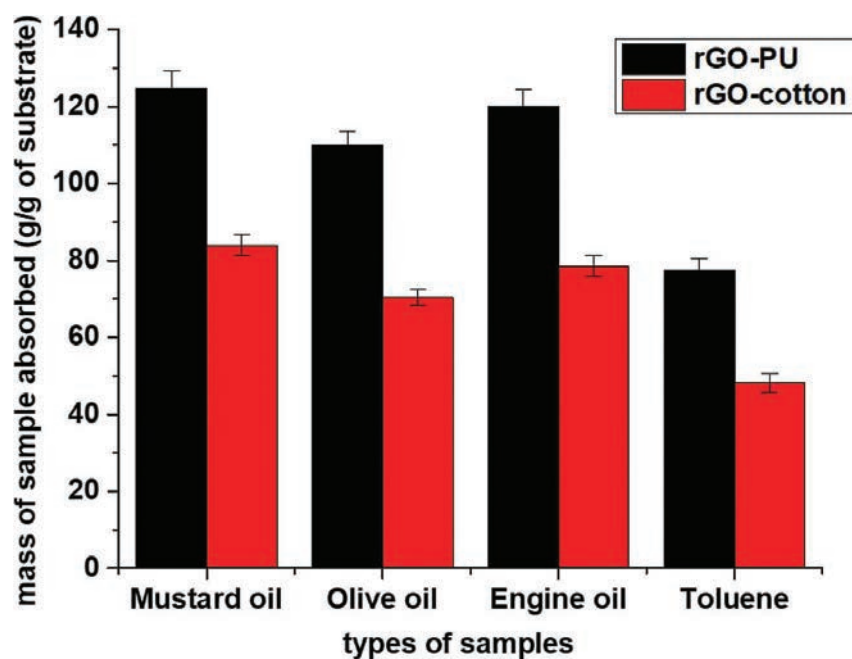


Figure 4. Absorption capacities of the rGO-PU sponge and rGO-cotton towards various samples.

The War Selfie – Mohammed Al-Qadhi (War Correspondent)

A Short Documentary

Haneen Zayed, bachelor student at Mass Communication Department, Radio and TV

Supervisor: Dr. Nejude Al-Ibrahim, Lecturer of Broadcast at Mass Communication
Department

College of Arts and Sciences - Qatar University



Generally, documentaries discuss historical, political or scientific facts neutrally. They also include narration of disasters or wars that took place in the past or in the near present. This project by student Haneen Zayed is aimed at highlighting the nature of the war correspondents' work as well as the risks that face them during the field coverage of the battles, in addition to embodying the human aspects of this role. Moreover, documentaries acquaint the viewers with the nature of the war correspondents' work closely, to understand the risks and difficulties that they are exposed to daily during their field coverage of wars, while moving between several battlefronts, in the circumstances of civil wars in particular. They also discuss whether the open battlefronts in mountains and deserts or battlefronts in cities and residential areas are more dangerous for the lives of the war correspondents and their teams.

The film under discussion here also explains how the war correspondents handle the challenges accompanying their work such as airstrikes, bombardment and lurking snipers. In addition to their daily experience with checkpoints and barriers while moving between battlefronts or cities, as well as to their exposure to stress, direct and indirect threats due to their media coverage and news broadcasting. The researcher was also keen on highlighting the human side in the field coverage of wars and how the war correspondent deals with the news and photos of civilian victims, particularly children and women, along with the psychological stress that is reflected on him while watching the victims whether they are murdered or wounded. The researcher highlighted how the war correspondent estimates what to broadcast to the viewers. Does he consider the cruelty of the photos and their impact on the mental state of the viewers? Alternatively, the consequences of wars and their difficult reflections on daily life, in addition to the fleeing of civilians from the hell of wars and their suffering from the circumstances of exodus and displacement.

Haneen highlights the war correspondents' pursuit of the events and daily developments of wars, their estimation of the numbers of casualties and losses of the conflicting parties and how they handle the inconsistency of the news particularly in civil wars. Due to its media and human importance, the project targeted media students, institutions and study centers in the field of media. Academic researchers in the field of media seek to study the reality of practicing to discover new unprecedented aspects of the media work that were innovated in line with the development and the growing position of online journalism in the last years.

On the other hand, seeking to reach the outcomes of professional media standards and their development and to consider their applicability such as 'standards of objectivity' and 'neutrality' that the journalist should be characterized by, to broadcast the news to the viewers as it is without being falsified or influenced.

The researcher mentions that selecting the title of the research dates back to the study, research and initial interviews phase, when she came across the book of the war correspondent Mohammed Al-Qadhi. She was able to connect the shown photos to his experience in the field of war, as the word "Selfie" is a modern word that means a photo that one takes of oneself to record his presence at a certain place.

Mohammed Al-Qadhi documented his presence as a war correspondent who witnessed the events of the Yemen War; hence, the title of the research was selected based on the same.

The idea of the research came out of the interest of the student to follow up on documentaries, mainly those that care about the human aspect, so they were the initial source of inspiration. Moreover, the connection between journalism and humanitarian work encouraged the researcher to engage in the experience of directing a short documentary in this field. In addition, the



Correspondent Mohammed Al-Qadhi, while reporting the facts of the Yemen war via Al-Jazeera Mubasher.

murder of the late correspondent Shireen Abu Akleh, which was the source of inspiration for the research idea, embodied many aspects in the nature of the war correspondent's work both psychological and the physical dangers that they were exposed to, as well as the role of media or channels, especially Al Jazeera news channel, in providing support to the war correspondents and preserving their lives in addition to the credibility in broadcasting events.

The war correspondent Mohammed Al-Qadhi, who covered the events of the war in Yemen through Al Jazeera Mubasher, was characterized by courage at dangerous places and was considered a model for studying the case of the war correspondent in this research. His correspondences through Al Jazeera Mubasher specifically gave him a peculiarity that is not available in any news channel that depended more on newsletters, considering he appeared on live broadcasting for a long time from the battlefronts exposing himself to numerous risks.

The researcher faced some difficulties while directing the film such as the difficulty to videotape in the building of Al Jazeera Channel, coordinating the videotaping times with the journalist and selecting the archive photographs. However, she succeeded in highlighting a significant aspect of media through this project. Students and researchers in the field of media seek to understand its reality as well as studying this reality academically to be able to understand the meaning of 'war media' and to compare its theoretical and practical aspects. The film also shows the viewers a real image of the backstage area of the fieldwork of the journalist in war conditions through a war correspondent who was engaged in the experience and lived all its details, based on the archive photos documented in the archive of Al Jazeera Mubasher. Additionally, there were testimonies of individuals who lived the war in Yemen and watched over the correspondent's coverage.

Finally, as shown at the end of the film, a new life may start after the war, but the scenes will always be remembered. The correspondent Mohammed Al-Qadhi could only document them in his book "The War Selfie."

The documentary's link:

[سيلفي الحرب.. فيلم وثائقي يُبرز تغطية الجذيرة مباشرة للحرب في اليمن \(فيديو\) | أخبار | الجزيرة مباشر \(aljazeera.net\)](https://www.aljazeera.net/سياسة/الجذيرة-مباشرة/فيلم-وثائقي-يبرز-تغطية-الجذيرة-مباشرة-للحرب-في-اليمن-فيديو-أخبار)

The Association between Oral Health and Risk of Gastric Cancer: A Systematic Review (A Research Project that Won First Place in the Fifth Youth Research Forum 2023)

The winning team:

Ayah Osama Saleh El-Zaini, Rana Adil Hakim Khalid, Reem Ahmed Elsafty, Shahad Raed Hamed Al-Biltaji

Third-year students, College of Dental Medicine

Iman Mahamade Ali, Mohamed Ahmed Mohamed Sadig, and Omar Mohamed Elsayed Mahmoud Saleh

Second-year Students, College of Dental Medicine

Ayaha Elsakka a graduate from the College of Health Science

Supervisor: Dr. Sadeq Ali Al-Maweri, Associate professor

Co-supervisor: Dr. Tayeb Al-Hadeethi, Research assistant

College of Dental Medicine – Qatar University





On the left is Dr. Sadeq Ali Al-Maweri, the main supervisor of the project, with the winning students in the first place, and on the right is Dr. Tayeb Al-Hadeethi, the assistant supervisor of the project.

Background

Gastric cancer (stomach cancer) is one of the most commonly occurring cancers worldwide. It is the 5th most common cancer and the 3rd most deadly cancer globally, with an estimated 783,000 deaths in 2018. Several risk factors including smoking, alcohol consumption, inadequate diet, and some bacterial infections have been associated with gastric cancer. Additionally, recent evidence suggests periodontitis and tooth loss as a potential risk factor for gastric cancer. Periodontitis is a serious gum disease that destroys the alveolar bone and periodontal tissues, leading eventually to tooth loss. It affects people of all ages and gravely impacts patients' quality of life and affects eating, diet, and nutritional input. Numerous epidemiological studies have investigated the potential association between oral health parameters and the risk of gastric cancer, with conflicting results. Hence, the present study aimed to systematically review and summarize the available evidence regarding the potential association between oral health and the risk of gastric cancer.

Methods

For this purpose, a comprehensive search of

the literature was done to identify all relevant studies published till June 2022, using all relevant keywords. All cohort studies that assessed the relationship between oral health and gastric cancer in humans were eligible. The methodological quality of all included studies was evaluated using the Newcastle–Ottawa scale (NOS).

Results

Out of the 295 retrieved studies, 12 cohort studies were included in the present systematic review. Most of the included studies found a positive significant association between periodontitis/tooth loss and the increase in the risk of gastric cancer. The probability of developing gastric cancer increased between 13% and 65% in patients with periodontitis/tooth loss as compared to individuals with healthy periodontium/less missing teeth.

Conclusion

The available evidence supports the potential association between poor oral health and the risk of gastric cancer, and emphasizes the importance of maintaining good oral health in order to reduce the risk of distant cancers, including gastric cancer.

Islamophobia as a Phenomenon in the Western Context Along With Its Religious and Cultural Origins

Dr. Badrane Benlahcene

Research Associate Professor, Ibn Khaldon Center for Humanities and Social Sciences
- Qatar University



Introduction

The phenomenon of Islamophobia sweeps the world from west to east and produces 'Hate Speech' against Muslims targeting their religion, nation, culture, people, and civilization. Therefore, Muslims suffer a lot and face difficulties in building civilizational, cultural, and religious bridges with other nations, civilizations, and people, especially in the West.

This paper raises a question about Islamophobia as a phenomenon in the Western context along with its religious and cultural origins, which produces Hate Speech against Islam and Muslims. Among the results that this paper aspires to achieve is to pave the way for understanding the origins of this phenomenon, and opening up to cultural, religious and intellectual revision of western standpoint towards Islam. This is in addition to building a realistic and informed understanding of Islam and Muslims in favor of civilizational cooperation and coexistence.

I. The Term “Islamophobia” and its Implications

“Islamophobia” is one of the most commonly used terms in spite of the absence of a precise definition thereof. Although the ideas of Islamophobia and hatred towards Muslims are ancient issues, the term “Islamophobia” is relatively new. The term appeared only in contemporary discourse with the publication of a report titled: “Islamophobia: A Challenge for Us All” by the British NGO “The Runnymede Trust” in 1997. The report stated that one of the meanings of Islamophobia revolves around considering Islam as inferior to the west, barbaric, irrational, primitive, sexist, violent, aggressive, supports terrorism, and that it (Islam) participates in the “clash of civilizations.” Hence, these ideas have been used to justify discriminatory practices against Muslims and their exclusion and harassment.

Following the events of 9/11 in the year 2001, the phenomenon became more common in the United States and elsewhere, then it became commonly used in public and academic settings, as there were some indications of unwelcoming and unfriendly speeches directed to Muslims who should not be accepted, tolerated, and treated as humans. The “Islamophobia” image created a huge gap and prevented the establishment of communication, dialogue, cooperation, coexistence, and integration of Muslims into human civilization. Therefore, Islamophobia is “a phenomenon that offends humanity as a whole and is contrary to the principles of human rights and to the provisions of international law.”

Nevertheless, this phenomenon is not only the result of the events of 9/11, as it has origins in history, but also the result of multiple religious, cultural, and civilizational factors and a historical process that led to turning the phenomenon into a threat to coexistence nowadays due to the Hate Speech against Muslims that is based on generalized ignorant fallacies and judgments. Hence, such research endeavors to analyze the origins that led to Islamophobia and produced Hate Speech against Muslims.

II. The Religious Origin of Islamophobia

The Church’s attitude towards Islam has been disturbed since the beginning when Islam spread and encountered Christianity in several areas. The prevailing Church approach is to falsify Islam, seek to intimidate people thereby, and instill hatred towards it, by distorting the image of Islam, its Prophet, Qur’an, Muslims, their culture, and civilization.

The monk John of Damascus is considered the pioneer of the Fathers of the Church in distorting

the image of Islam, and his influence has continued until today. The ridicule and mockery of Islam and the Prophet (peace be upon him), in the West is just a continuation of the tradition adopted by John of Damascus and continued until today. For centuries, Christians continued to show an image of ignorance described by John Esposito as: “Our association with Islam is based on ignorance and a huge amount of widely accepted stereotypes about the Middle East.”

However, the Crusades are one of the main factors that shaped the everlasting western imagination and its view towards dealing with Islam. This western imagination and stereotyping influenced scholar, politicians, leaders, and the public. This distorted image was passed on to the leaders of intellectual and religious reform in Europe and was not spared even by Martin Luther, who follows the method of attack based on a lack of knowledge of Islam and the atmosphere of conflict and confrontation.

Even in modern times, the impact of such image affects religious figures who have influence in the making of consciousness and thought in the west. Pope Benedict XVI adopted the same approach based on intellectual distortions and moral deceit, in his famous lecture in which he accused Islam of being hostile to reason. This stance, held by the head of the Catholic Church, hardly differs from previous or subsequent stances of many churchmen.

In fact, the intolerant writings of some churchmen were not the result of an honest study of Islam as they were based on assumptions, fantasies, preconceptions, prejudices, and often lies. Instead of studying Islam as an independent entity, Christian scholars studied it according to what it should be, as per the Christian point of view. These writings planted the first root and the basis for the irrational understanding of Islam.

This stance of the Christian clergy cannot be underestimated, and it cannot be said that the west has shifted the religious reference in favor of the modern humanist reference, because this Church attitude continued, and prevented an open and conscious understanding of Islam. Consequently, the west has adopted an anti-Islamic stance up to this day.

III. Orientalism: The Cognitive and Cultural Foundation of Islamophobia and Conflict

During the European Renaissance in the 15th century, the western view of Islam entered a new phase culminating with the campaigns of European colonialism, which used orientalism to shape its image of Islam and the east. As Edward Said



Dr. Badrane Benlahcene

stated, the west's knowledge of Islam at this stage was for the purpose of controlling it rather than understanding it. This process was conducted in an institutionalized way, in which European institutions of thought and knowledge cooperated closely with official European institutions of colonialism in order to provide them with the necessary knowledge to control colonized societies.

Accordingly, orientalism has become the second origin of Islamophobia in its cultural and civilizational dimensions. It has been an instrument of modern western colonialism and the promotion of the "Western Superiority Complex" over the world, especially with Islam. Orientalists have realized that 'Islam is unadaptable,' so they warned that it is the continuous adversary that poses a challenge to the west. Hence, the obsession of clashing with Islam and confronting it has originated.

Orientalism, as a field of knowledge, has had an important role in the formation of stereotypes about Islam in the west, and the foundations of the orientalist vision that formed the basic references to most of the images offensive to Islam and Muslims that have occupied the European popular thinking. It has oriented western awareness about Islam and Muslims, and the ideas of orientalists are broadcast in various channels of thought, knowledge, and media. Such ideas influence policymakers and decision-

makers in the west and are transferred to public opinion through modern media and propaganda devices to confirm the distorted stereotypes.

Orientalism, methodologically, adopted the systematic and deliberate distortion of sources, and the approach of exaggeration and overstatement. To date, the west has not been able to get rid of its prejudices, failures, and loopholes. This has made orientalism a nourishing source for Islamophobia and Hate Speech against Islam and Muslims.

Within this historical context in which orientalism originated, and as per the perspectives in which it placed itself and spreads its influence, it is a major origin in the genesis of Islamophobia. All the debates and discussions accusing Islam of violence and terrorism, Islam's resistance to modernity, the concerns and debates stating that Islam constitutes to be a threat to the west as well as the other forms and manifestations of Islamophobia that are widespread in the west in general, are all fueled by the religious and orientalist origins.

Conclusion: From Prejudices/Stereotypes to Knowledge, Acquaintance, and Coexistence

By analyzing the concept of Islamophobia, and its origins, especially the religious and cultural origins, it is clear that the roots of Islamophobia are deep in history, and that they were formed since the first encounter between Islam and Christianity, then accumulated throughout the civilizational history of the medieval Christian West through the religious stance of the most Fathers of the Church, and the modern west, which established orientalism to know and dominate the East and shape the image of the east among westerners.

These 'roots/origins have shaped the image of Islam, Muslims, and Islamic civilization in the official and public consciousness of the west as a distorted, foul, and frightening image based on a lack of objectivity and ignorance of Islam and Muslims. The result is Hate Speech directed against Islam and Muslims in western societies.

The demise of Islamophobic Hate Speech can only be ensured by going beyond historical judgments that are and have never been realistic, through facilitating and opening up to cultural, religious and intellectual western revision towards Islam. This is in addition to overcoming the issue of the Crusade spirit and building a realistic and informed understanding of Islam and Muslims.

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Medication-induced Arrhythmias: **A Tool for Assessing an Individual's Risk at the Time of Prescribing**

Dr. Monica Zolezzi

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College of Pharmacy - Qatar University



An important concern among clinicians at the time of prescribing is the potential risk for drug-induced prolongation of the heart's QTc interval (QTcI), as it can be followed by a life threatening polymorphic ventricular tachyarrhythmia called torsades de pointes (TdP) and sudden cardiac death (SCD). In certain populations, such as those with serious mental illnesses (SMI), SCD is one of the major causes of premature mortality, and the medications used to treat SMI have been implicated in the increased risk of SCD in this population. QTcI prolongation and TdP have also been associated with the use of other commonly used medications, such as antiarrhythmic medications, antibiotics, antifungals and antiemetics.

Studies have suggested that clinicians encounter difficulties in identifying TdP risk factors or medications that can prolong the QTcI. When modifying a drug regimen or when prescribing a new medication, it is imperative for clinicians to determine potential safety risks before the patient starts the new treatment. Because of an ever-increasing number of medications available and other non-drug factors that must be accounted for during a risk assessment, clinicians may face difficulties on how to assess, manage, monitor or refer patients at risk of QTcI prolongation.

A very important role for pharmacists is monitoring drug-drug interactions (DDIs) at the time of prescribing, and are often consulted about medications that could prolong the QTcI. The advice provided should be extended beyond simple information about the potential for QTcI prolongation with a particular medication, or with drug combinations. Rather, it often requires further exploration of patient characteristics. Pharmacists may face challenges in retrieving and interpreting this information, particularly for patients who have complex treatment regimens or who are on poly-pharmacy. To address this, an algorithm was developed based on an extensive literature review of the latest available guidelines for the assessment, monitoring and management of drug-induced QTcI prolongation (Figure 1).

This algorithm facilitates the translation of evidence-based recommendations into practice as it contains a set of clinical questions that are intended to help in rationalizing decision-making processes when medications known to increase the QTcI are prescribed. Most currently available QTcI prolongation guidelines recommend consultation with cardiology at some critical stages in the decision-making process, particularly when



Dr. Monica Zolezzi

assessing individuals at risk of QTcI prolongation or when interpreting electro-cardiograms (ECGs). Taking these guidelines into consideration, the authors of the algorithm consulted with an expert panel consisting of national and international cardiologists to determine its content validity. Feedback from cardiologists supported the implementation of the QTcI algorithm, and recommended facilitation of its use by the use of electronic clinical decision support (ECDS) systems.

In outpatient settings, such as community pharmacies, clinical information regarding QTcI prolongation may be challenging to retrieve and interpret. Tools that can be utilized by pharmacists in practice would be valuable and could assist in ensuring the safe and effective use of psychotropic drugs in the mental health population. An intervention study in the Netherlands, which tested an ECDS tool to support the handling of potential QTcI-prolonging DDIs, showed the tool to be effective in managing these DDIs via a structured approach, through which more specific advice to prescribers was provided. The tools were also reported to be useful for monitoring potential harmful changes during chronic treatment. Pharmacists were satisfied to use the tool and it has proven to be feasible to be implemented in clinical practice.

Considering the evidence that algorithms and guidelines are often under-utilized, and challenging to implement in clinical practice, in the most recent Qatar University (QU) grant cycle, our proposal to increase the usability and utility of this evidence-based algorithm through ECDS was awarded a High-Impact Grant. The goal of this project is to turn the algorithm into a web-based ECDS application to assist healthcare professionals in making better prescribing decisions in both, acute and non-acute settings. ECDS systems are commonly used to assist clinicians in their complex decision-making processes during clinical practice, and for consolidating numerous guidelines at the time of prescribing medications. This is particularly important when assessing drug-induced QTcI prolongation, where not only the characteristics of the drugs play a role, but also where multiple patient-specific risk factors should be considered.

As such, funding through this grant will enable QU investigators to continue with initial collaborative

work with the Epidemiology Coordinating and Research Centre (EPICORE) based at the University of Alberta in Canada, which has been involved in a similar Qatar-based project: “The Arabic Translation, Cultural Adaptation, and Incorporation of a Web and Mobile Application for Assessing, Monitoring and Managing Cardiovascular Risk” (this study has been recently published in the Saudi Pharmaceutical Journal). This ECDS tool is the only of its kind in the Arabic language, and its usability is currently being investigated in a feasibility study at primary care centers in Qatar.

Considering these previous studies and the outcomes of these investigations, the QTcI algorithm, developed on evidence-based clinical guidelines, and content validated by experts in the field, will be incorporated into ECDS and health management systems to facilitate the identification of patients at risk for QTcI prolongation to assist in the decision-making process at the time of prescribing. This investigation will be the first of this scale in Qatar.

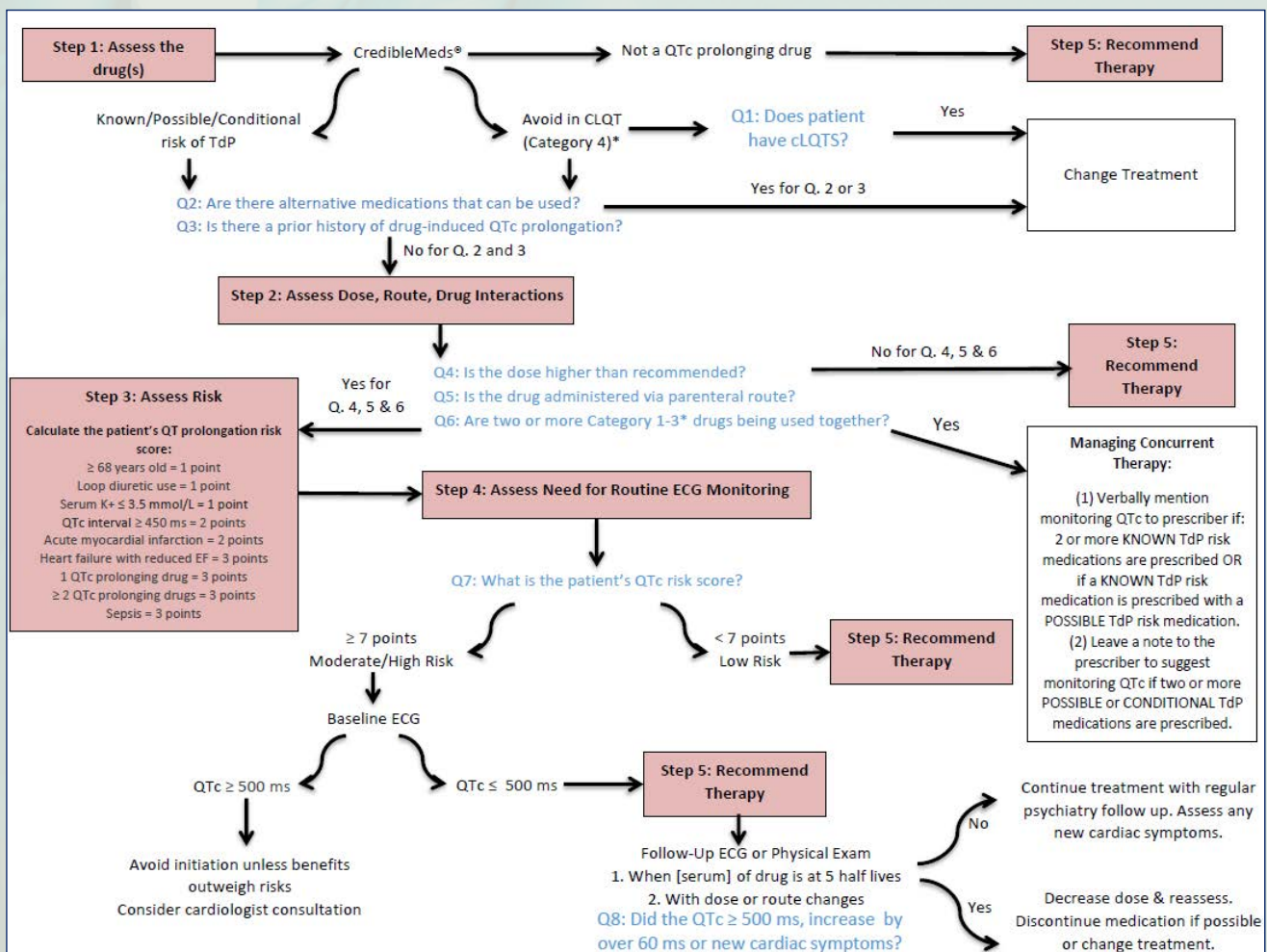


Figure 1. Stepped-based approach for the assessment, monitoring, and management of drug-induced QTc prolongation in the psychiatric population.

Economic Education to Treat Inflation in the Qatari Market:

University Student and Fulfillment of Qatar National Vision QNV (2030)

Principal Researcher: **Dr. Abdelazeem Sabry Abdelazeem**, Assistant Professor–Deanship of General Studies, Core Curriculum Program (CCP) - Qatar University

QU-Student Grant No.: QUST-2-DGS-2022-635. Participants in the grant are: **Ali Jassim Hosni, Mohammed Safadi, Mohammed Al-Emadi**, students at the College of Business and Economics - Qatar University



Introduction

This paper describes the guiding principles in preparing future undergraduate students, who serve the society in Qatar on acquiring Economic Education skills that have become an urgent necessity as it would help them to deal economically with various resources, as well as on the methods followed in facing local and global inflation. Qatar University (QU) is a leading institution responsible for developing various capabilities of its students through the development of activities that stimulate the activation of their potential, with a view to preparing a generation that is capable of facing the many variables in this era. Therefore, providing students with different skills is no longer a luxury in our time; nevertheless, it has become a necessity due to the developments and changes characterizing this era for all educational institutions, especially the University, as it has to put the development of students' skills at the top of its priorities.

Undergraduate students are one of the pillars of society who shall be prepared to apply the knowledge and skills acquired not only for achievement and success but also for effective participation in his society. This has been confirmed by the Qatari Ministry of Education and Higher Education in its strategy for 2017-2022. It indicated in its vision and mission to include the principle of community participation in the educational process to achieve high-quality education. Furthermore, the strategy explained in its summary, under the title "Main Outcome," that the State of Qatar endeavors to maintain a high-quality educational system that contributes effectively to society, promotes the values of Qatari society, and provides all learners with different skills. In its intermediate outcomes, this strategy explained in the first of these elements the following: "providing diverse learning opportunities that empower students to contribute effectively to the Qatari workforce and community" (Higher Education, 2017).

Economic Education is a basic type of modern education worldwide, as it is part of the system of community development objectives in the fields of continuous development and innovation so that it always corresponds to economic variables and emerging conditions on the international scene over time. The most essential objective that Economic Education seeks to achieve may be the following: educating the individual about the economic issues and challenges facing him on the one hand and his society on the other; then providing the individual with sound economic behavior to achieve the best economic interaction with the society in which he lives.

In early 2020, with the emergence of the Coronavirus pandemic (Covid-19), and its health, educational, and economic consequences on the whole world,

a report on the "Global Economic Situation and Prospects" was published by the United Nations. The report states that the global economic recovery is facing significant headwinds amid new waves of Covid-19 infections, persistent labour market challenges, lingering supply-chain challenges and rising inflationary pressures. The robust recovery in 2021—driven by strong consumer spending and some uptake in investment, with trade in goods surpassing pre-pandemic levels — marked the highest growth rate in more than four decades, the report highlighted. As a result of previous global conditions, the phenomenon of "Economic Inflation" has emerged, that has gained the attention of many scholars in the field of economics to find out the causes of inflation and prescribe an effective solution therefor.

Some researchers have considered that inflation is a disruption of productive capacities, high unemployment, deterioration of incomes, waste of savings, and the reluctance of investors to invest economically, which has led to the division of society into categories of the rich and the poor and disruption of the productive forces. Accordingly, many specialists and consumers in the Qatari society have called for urgent solutions and practical measures to address the rise in inflation, which witnessed a sudden rise in November 2021. Consumers stressed the need to curb prices which are the focus of the acceleration of inflation. Specialists reported:

"The consumer price index "inflation" recorded, during November, the largest annual increase in seven years by exceeding the barrier of 6%, with an increase of 1.33% compared to October 2021. Such increase was due to several key factors, the first of which is the financial policy that was characterized by lowering interest rates to zero, in addition to the crisis created by the spread of Coronavirus, which played a major role in raising export and import costs at the international level (Al-Sharq, 2021)." This inflation may clash with the objectives of the Qatar National Vision 2030, with regard to economic development, as the vision in this area sought the following: "Development of a competitive and diversified economy capable of meeting the needs of, and securing a high standard of living for all its people for the present and for the future, with financial and economic stability characterized by low inflation rates, sound financial policy, and an efficient and risk-safe financial system."

Research Objective and Importance

The research aims to prepare a measure of the awareness of QU first-year students on the concepts and principles of Economic Education and to address the phenomenon of inflation in the Qatari market, in addition to achieving Qatar National Vision 2030 in the Economic Development Index.



Dr. Abdelazeem Sabry, the principal researcher in the project and students participating in the student research grant.

This research may benefit those who develop educational policies within Qatar University, as it helps them to raise students' awareness of the economic programs adopted by the State. Furthermore, this research provides the Ministry of Commerce and Industry with a scientific framework that could help them to prepare the next generation economically, which is instrumental in achieving the Qatar National Vision 2030 in the Economic Development Index. It also benefits researchers by providing them with research ideas on the concept of Economic Education and the way of applying it to students.

Research Results and Interpretation

All respondents agreed on the importance of Economic Education, its concepts, and principles in reducing the phenomenon of Economic Inflation in the Qatari market. The respondents' agreement to all the questionnaire statements may be due to their desire to reduce excessive spending, resort to savings and investment, and keep away from showing off and vanity. This is in addition to the application of the principles of the true Islamic religion in rationalizing consumption, besides the desire of the respondents in the participation of the media in raising society's awareness of the risk of Economic Inflation, and highlighting its risk in the University curricula. Furthermore, the faculty members shall be trained for educating their students about the risk of Economic Inflation and bringing the students' attention to the national product. All the previous phenomena were agreed upon by the respondents due to their belief in the importance of Economic Education of the undergraduate students that would reduce the risk of the phenomenon of Economic Inflation in line with Qatar National Vision 2030, which needs this group of young people who shall deal wisely with the resources of the State to preserve them. These results are consistent with the results of the 2015 Human

Development Report, which stated the following: "human development is the development of human beings by building human potential, it is for human beings as it improves their lives, and it is part of human beings as they actively participate in everything that makes up their lives" (United Nations Development Programme, 2015). This is the goal of the researchers behind this research, which is to develop the 'human beings' (undergraduate students) by providing them with the concepts of Economic Education to reduce a major economic problem, which is the problem of inflation. Thus, the human being is the basis of any future development.

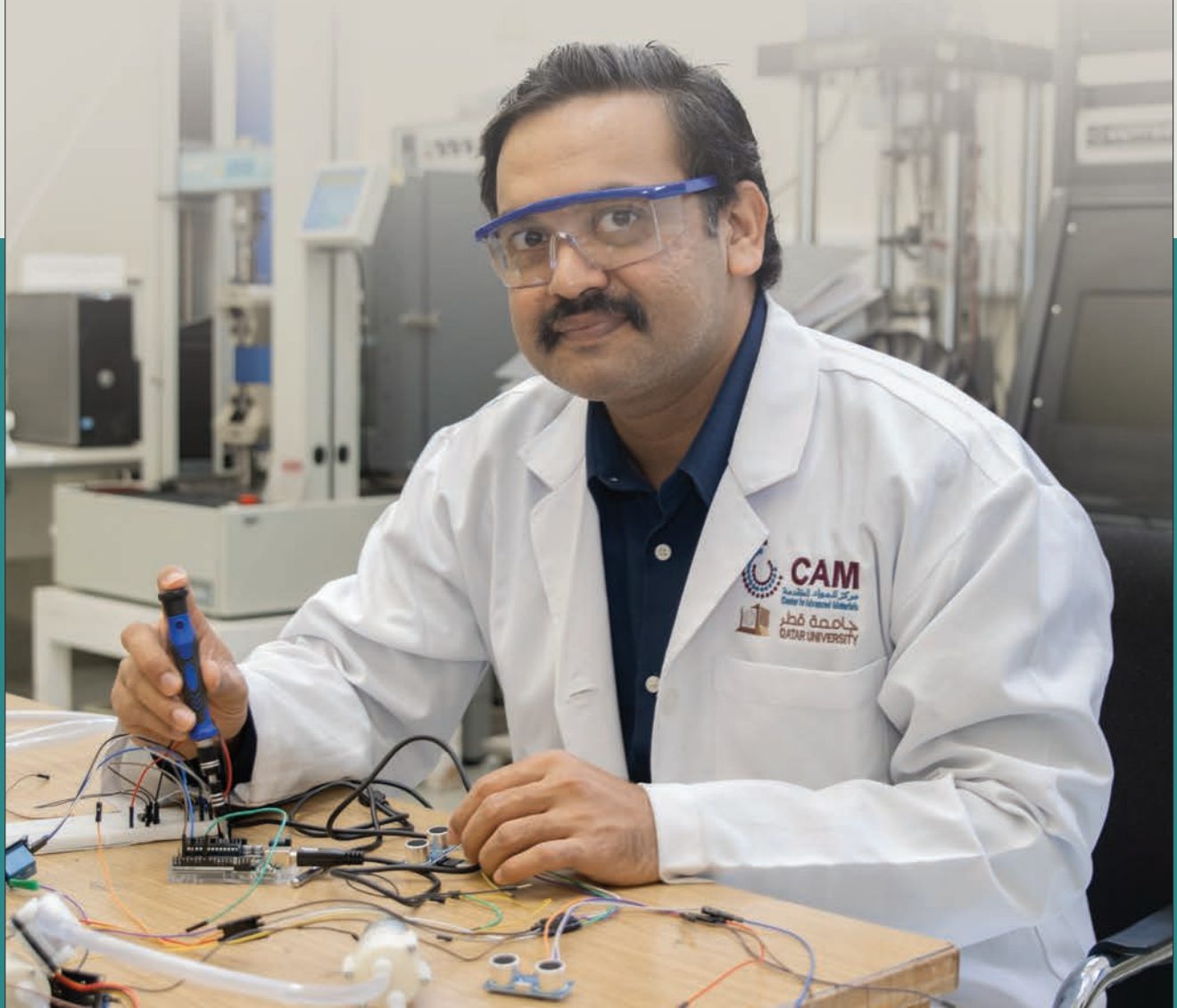
Recommendations

- Educating all undergraduate students and faculty members about the risk of Economic Inflation and the extent to which university education can eliminate the negative effects of this problem.
- Approving the Economic Education course for QU students, as a university requirement for the severe need of students in this era.
- Including the methods of educating school students about the risk of Inflation in the programs of the College of Education for the preparation of faculty members.
- Training the QU faculty members on the methods of including some of the concepts of Economic Education in their courses to educate students about the risk of Economic Inflation.
- Including various programs on how to cope with Economic Inflation within society and in the media.
- Intensifying religious discourse in the community to clarify the role of the principles of Islam in confronting the challenge of Economic Inflation.
- Encouraging the community to buy and appreciate the local product, as an attempt to face inflation.

Sensors Designed and Developed for Environmental and Human Protection at the Center for Advanced Materials

Dr. Kishor Kumar Sadasivuni

Research Assistant Professor, Center for Advanced Materials (CAM) - Qatar University



Sensors are electronic devices composed of specialty electronics or materials for determining the presence of a particular entity or function. They operate in various manners, depending on their application and include electromagnetic fields, or optics, among others. Smart Nano Solutions research group at the Center for Advanced Materials, Qatar University led by Dr. Kishor Kumar Sadasivuni, Research Assistant Professor, designed various sensors that have enormous potential in different fields, including but not limited to food safety, environmental, and biomedical domains.

Gas sensors, capable of detecting and monitoring trace amounts of gas molecules or volatile organic compounds (VOCs), are in great demand for numerous applications including diagnosing diseases through breath analysis. The research group in CAM designed a non-invasive gas sensor using volatile organic compounds in human breath as an analyte to detect various metabolic diseases. A smartphone-assisted unit consisting of a portable colorimetric device was used to detect relative red/green/blue values for practical and real-time application. The developed method could be used for rapid detection of ketones in patients with type 1 and 2 diabetes, or heart failure (Figure 1).

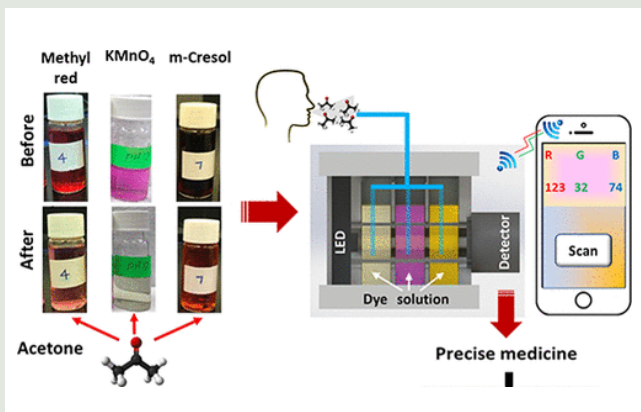


Figure 1. Breath Analysis for the In-Vivo Detection of Diabetic Ketoacidosis.

Most commercial food sensors in the market assess the food quality indirectly by monitoring environmental indicators such as temperature, humidity, and other changes. But here in CAM, we developed an inexpensive paper-based chemosensor to monitor the freshness of fish using trimethylamine as the sensing parameter. This sensor will significantly impact situations like monitoring the freshness of fish and diagnosing trimethylaminuria where fast detection of trimethylamine exposure is required. The

color of the paper sensor changes differently in these paper sensor as the trimethylamine concentration increases, which helps to determine the immediate risk of trimethylamine in an environment (Figure 2).

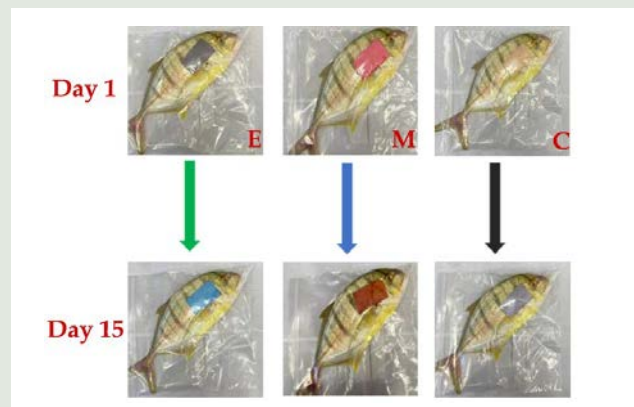


Figure 2. Paper sensor for trimethylamine concentrations for a long-time exposure of 15 days with packed fish.

Environmental monitoring is needed to be able to protect the public and the environment from toxic contaminants and pathogens. Some of the designed sensors are used in advancing the capabilities of corrosion detection. One among them is based on the wireless, self-powered radio-frequency identification (RFID) as a corrosion detector and continuous remote sensing of these RFID sensors via a software-assisted corrosion monitoring system. Compared to other methods where a corrosion sensor is installed along the RFID tags, the current invention used RFID itself as a corrosion sensor. These RFID tags can be embedded within the concrete structure and include metal bars itself as a part of a circuit for corrosion monitoring. The RFID sensors can be installed in different structures of the buildings and using the developed software, the real-time continuous corrosion mapping of the building can be done in a single slot (Figure 3).

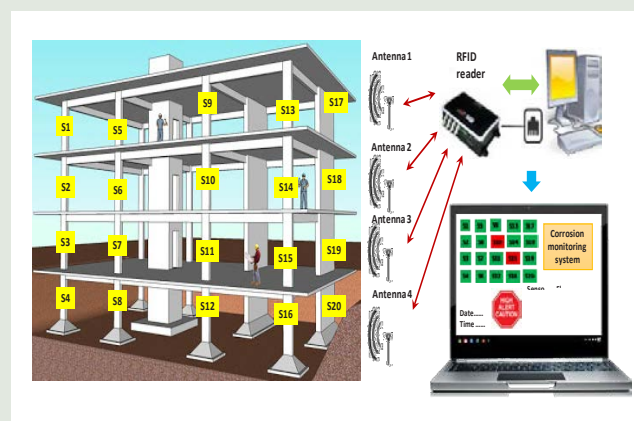


Figure 3. Corrosion monitoring sensor system.

A sensitive IoT-based colorimetric sensor prototype was also developed to detect formic acid, ethanol, and methanol in the atmosphere, which would have occurred because of CO₂ conversion. Using the dyes as sensing elements, the sensor prototype showed unique RGB values upon exposure to test solutions and its concentration, based on the RGB values. The RGB data can be acquired using a mobile application (Figure 4).

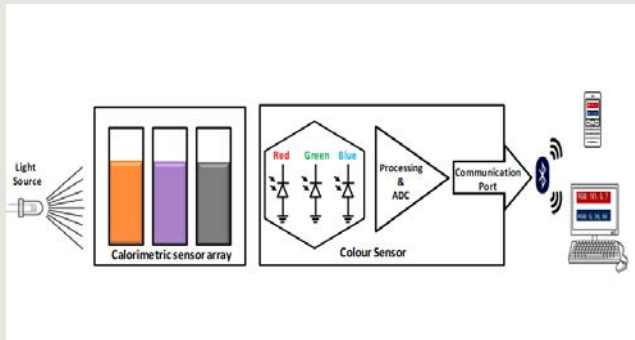


Figure 4. Fabricated sensor prototype for colorimetry.

Biomedical sensors are special electronic devices that can convert biomedical signals into easily measurable electric signals. Such biomedical sensors are also developed by the research group, which act as the key component in various medical diagnostic instruments and equipments like the tactile sensor that helps the surgeons to register the forces applied over the grasper of a surgical tooltip and can reduce the learning time for surgeons and help prevent injuries on the patient (Figure 5).

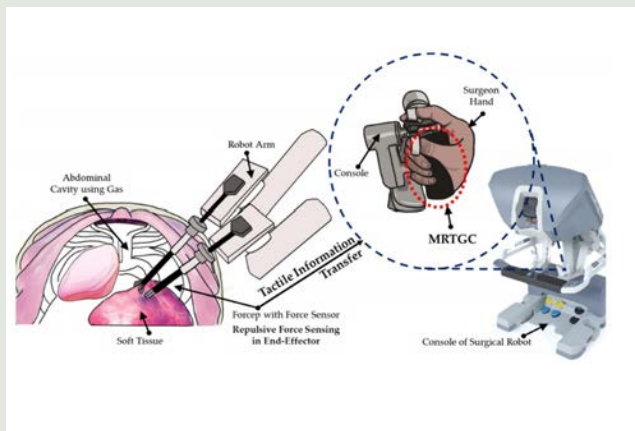


Figure 5. Tactile sensor.

Apart from this, The research group developed a wearable piezoresistive pressure sensor capsule that can detect pulse rate and human motion. The capsule includes a flexible silicon cover and is filled with different PVA/MXene (PVA-Mx) composites in the polymer matrix (Figure 6).

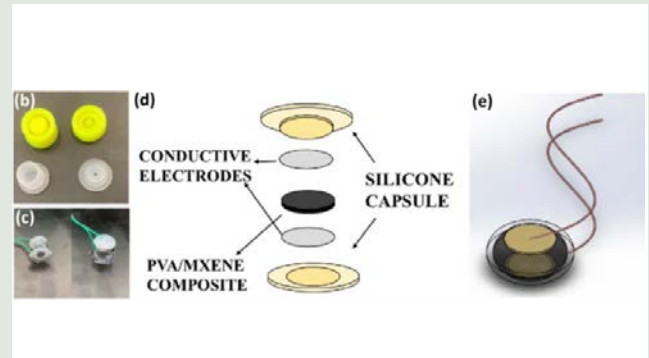


Figure 6. Wearable pressure sensor.

Similar to the in-vitro counterparts, wearable non-invasive electrochemical sensors can detect target analytes in tears, saliva, sweat, and skin. The research team developed a nonenzymatic electrochemical sensor based on CuO-MgO composite for dopamine detection from sweat. Moreover, we report a wafer-scale and chemical-free fabrication of nickel (Ni), copper (Cu) and heteroatomic Cu-Ni thin films using RF magnetron sputtering technique and mesoporous carbon coated with Ni-Cu nanoparticles for non-enzymatic glucose sensing application from sweat for the diagnosis and management of diabetes (Figure 7).

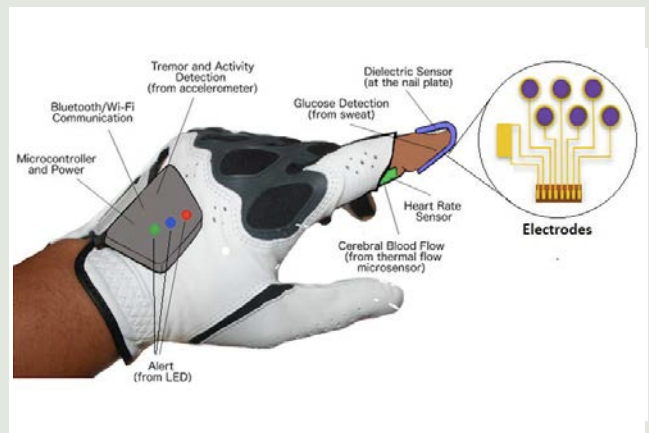


Figure 7. Wearable glucose sensor.

Such sensor technologies will surely enable and empower the general public and scientists. They hold the potential to reveal environmental injustices and provide supporting data to hold responsible parties accountable. Surely this technology will be enabled with its affordability, ease of use, and social engineering.

A GCC Framework for Labor Rights

Principal Investigator: Dr. Faisal Misfer Al-Hababi, Associate Dean for Research and Graduate Studies

Rania Belkacem Al-Mazni, Research Assistant
College of Law - Qatar University



Migrant workers constitute most of the population of the Arab Gulf countries, as the economies of these countries depend heavily on expatriate labor, and the percentage of expatriate workers in each country ranges between 33% to 88.5% of its population for many reasons, most notably the need for skilled workers with low wages, as millions are employed as migrant workers from Southeast Asia in the Gulf region. In addition, families in the Gulf region employ a few domestic workers, and it is not clear to what extent their internationally guaranteed rights are protected. Therefore, the member states of the Gulf Cooperation Council (GCC) have been struggling to strike a balance between protecting the rights of migrant workers on the one hand, and their own demographic and societal fabric on the other.



Dr. Faisal Misfer Al-Hababi, principal investigator for the project, and Rania Belkacem Al-Mazni.

Despite the scarcity of legislation on the rights of migrant workers in local communities in the GCC countries, governments in these countries, on the occasion of hosting major international events, have adopted legislation and laws that could be the first step towards achieving effective protection of the rights of migrant workers. The fundamental reform process for their strict internal legal systems that the basic human rights of migrant workers are undermined, as labor laws in the GCC countries leave a void to override workers' rights.

Labor laws in the GCC countries left a void for human rights violations against workers. The companies have been the most important beneficiaries of the weak mechanisms for protecting the rights of expatriate workers in the region, which gave them power over them, so in some cases this led to workers working for long periods a day, in harsh conditions, and at low wages, without guaranteeing their rights, including the right to change jobs. All this shed light on the so-called sponsorship system, which is a program adopted in the Gulf Cooperation Council countries that allows citizens of the Gulf countries, whether they are individuals or companies, to hire foreign workers to work in the country under their supervision. This system imposes wide powers on the employer, which requires that workers need approval from employers to change jobs before the end of the employment contract.

In this context, the new amendment to the Labor Law in Qatar of 2018 abolished the sponsorship system, put in place new rules to guarantee the rights of workers from the age of the minimum wage, and abolish the restrictions imposed on workers to change jobs and leave the country. However, there are still many questions about the national protection of workers' rights in the GCC countries, and whether the problem is in the kafala system itself or beyond, and because promoting the rights of expatriate workers and improving working and living conditions are developmental issues, in addition to basic human rights issues. As the United Nations Development Program explains, "Human development

and human rights are mutually reinforcing and help ensure the well-being and dignity of all people, building self-respect and respect for others." Restrictions on basic human rights restrict choice, driving emigration of people who are unable to fully develop their potential and lead productive lives in their home countries. Depriving foreign workers of the ability to exercise their rights limits their contribution to the development of their countries of origin and the countries to which they migrate.

In this context, the study focuses on a legal review of labor laws in the Gulf Cooperation Council countries and takes an overview of their consistency with binding international law. The research deals with national protection tools and labor rights laws in the Gulf Cooperation Council countries considering new legislation and in accordance with the Declaration of Human Rights of the Gulf Cooperation Council for the year 2015.

The research confirms that workers' rights can be strengthened through a Gulf program that sets minimum standards and regional mechanisms to protect the rights of migrant workers, and human rights in general. Countries that participate in such a regional framework will be obligated to provide protection to workers at the national level. In addition, the Gulf program will establish a regional review body for the national protection system.

The importance of this research project is to enhance the national security of the Gulf Cooperation Council countries through the existence of a stable legal regulation of the rights of migrant workers, which in turn will reflect positively on the protection of the social fabric and societal identity of the Gulf countries in terms of organizing the functional relationship between citizens and migrant workers. The existence of a Gulf program may also lead to strengthening the position of the labor markets in the GCC countries, which may affect the attraction of capital and skilled labor. This research project falls within the National Capacity Building Grant at Qatar University

Lithium Mining from Seawater

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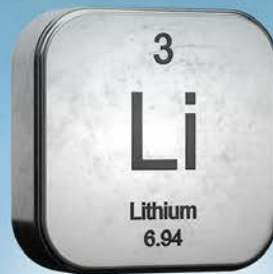
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Photograph of researchers involved in a research project for lithium mining from seawater.

From left-top: Dr. Dong Suk Han, Dr. Leena Al-Sulaiti, Dr. Zubair Ahmad, Dr. Sifani Zavahir.

From left-bottom: Prof. Ho Kyong Shon, Prof. Yuan Zhen, Eng. Guillermo Hijós Gago, Ms. Tasneem Elmakki.

In a world where the demand for clean and sustainable energy is on the rise, lithium has emerged as a modern-day “White Gold.” This precious metal, essential for energy storage solutions, is at the heart of the booming electric vehicle and electronics industries. With the price of lithium skyrocketing due to its ever-increasing demand, researchers are on a quest to find innovative and accessible ways to extract this valuable resource. One such groundbreaking method involves tapping into the Earth’s most abundant source – Seawater.

Lithium is an essential component of energy storage materials; when paired with renewable energy sources, it can potentially reduce dependence on hydrocarbon-based energy fuels, thus contributing to the fight against climate change. In addition, countries like Qatar, which have seawater reverse osmosis (SWRO) desalination plants but lack other lithium resources, have great potential to extract lithium from high-salinity SWRO brine. The National Priorities Research Program (NPRP), Graduate Sponsorship Research Award (GSRA), and other QU student projects aimed at lithium recovery also support the circular economy of lithium by designing a capacitive electrochemical system that uses spent lithium battery materials to recover lithium from various liquid sources.

For these research projects, researchers from multiple institutions (see Figure 1), including Qatar University, University of Technology Sydney, and University of Sydney in Australia, have developed

an electrochemical system for capturing lithium from seawater.

The widespread utilization of lithium in static and mobile electrical systems has led to a shortage of the metal, resulting in a significant price increase from \$7,000 to \$70,000 per ton over the past two years. Traditionally, lithium is obtained from solar evaporation ponds, a process that takes a significant amount of time and involves using large quantities of chemicals that may harm the environment. The electrochemical lithium capturing system developed by the research team has shown that lithium can be recovered from seawater in an environment-friendly manner, as evidenced by the results published in the scientific research journals (*Desalination*, Vol. 500, 2021, p. 114883-114914; *Nanomaterials*, Vol. 13, 2023, p.895-909) (See Figure 1).

Given the abundance of precious metals - including lithium ions - in seawater, the challenge is to extract these trace elements effectively, where the project aims to enrich lithium ions in seawater using concentrated solar power (CSP) technology. Its extraction requires an energy-efficient method with low-carbon emissions. The research team employed a solar-concentrated thermoelectric device to allow seawater to serve as a coolant, which is then processed through a membrane distillation unit to enrich the lithium ions in the seawater further. The generated power can then be used to run an electrochemical lithium-capturing system that requires minimal power consumption.

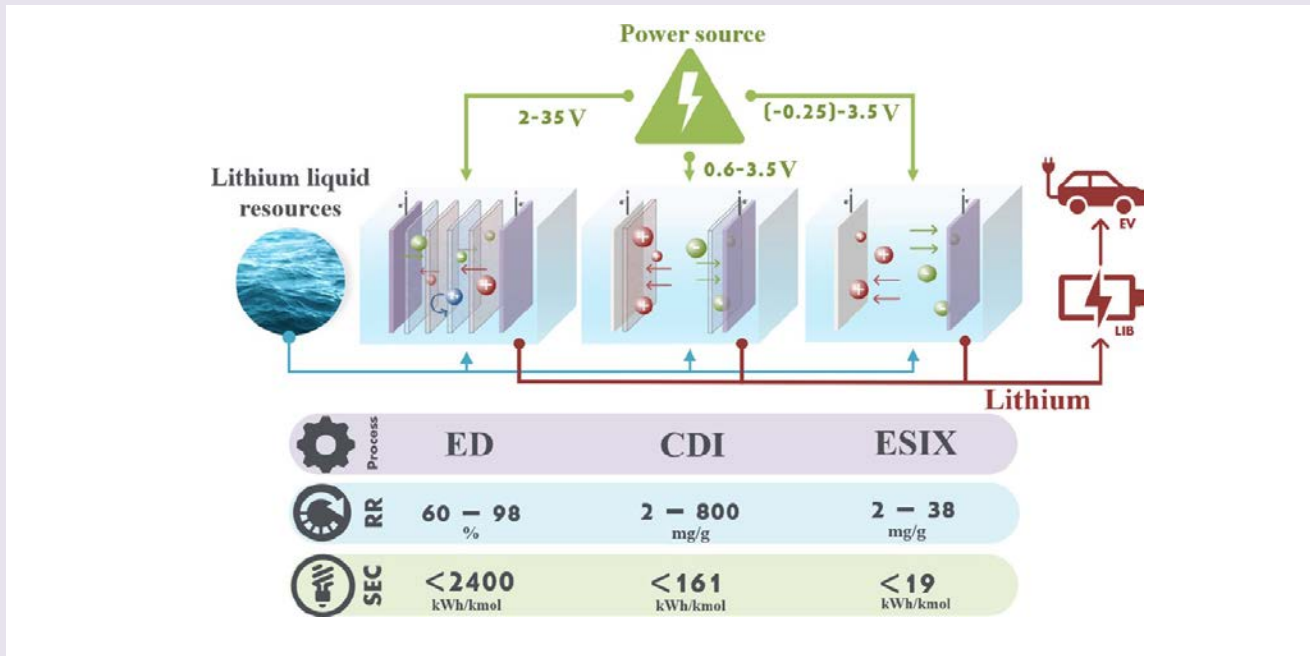


Figure 1. Schematic of lithium (Li) capturing from seawater using various electrochemical methods and comparison of energy consumption and Li recovery rate (%) for each method.

Resource recovery, including the mining of seawater lithium, is a hot topic in the desalination technology market. Developing an electrochemical system for the selective capture of lithium in RO brine, which has a salinity twice that of seawater, from seawater reverse osmosis (SWRO) desalination plants that contain various salt ions is a challenging task. However, this project demonstrates high selectivity using capacitive electrodes. Further studies on this technique could provide a basis for continuously capturing lithium ions from SWRO brine energy-efficiently. The project successfully developed a thermally-assisted electrochemical lithium-capturing system, which has demonstrated a rapid ($36.8 \text{ mg g}^{-1}\text{day}^{-1}$) and selective (51.8 % purity) lithium extraction from simulated seawater with an extremely high Na^+/Li^+ molar ratio of 20,000 (Water Research, Vol. 223, 2022, p.118969-118980).

Acciona Agua Company has installed SWRO plants in Abu Pontas and Umm Alhoul, Qatar, with the intention of developing technologies that enhance the value of SWRO brine. This, in turn, will further contribute to the growth of the SWRO desalination market.

Finally, repurposing SWRO brine into a lithium resource hub by using spent Li-ion battery materials as electrodes and partially reducing the energy needed for extraction through coupling with concentrated solar-powered thermoelectric technology addressed is a good example of promoting circular economy (See Figure 2) and sustainable development goals (SDGs 2030).

It is essential to mention that part of this NPRP project is also linked to the GSRA project entitled, “Lithium Capture in Seawater Using Spent Lithium-Ion Battery (SLIB) Materials-based Membrane Capacitive Deionization (MCDI) System” (see Figure 2). The project highlights the significance of establishing a sustainable and long-lasting circular economy of lithium to secure its constant supply.

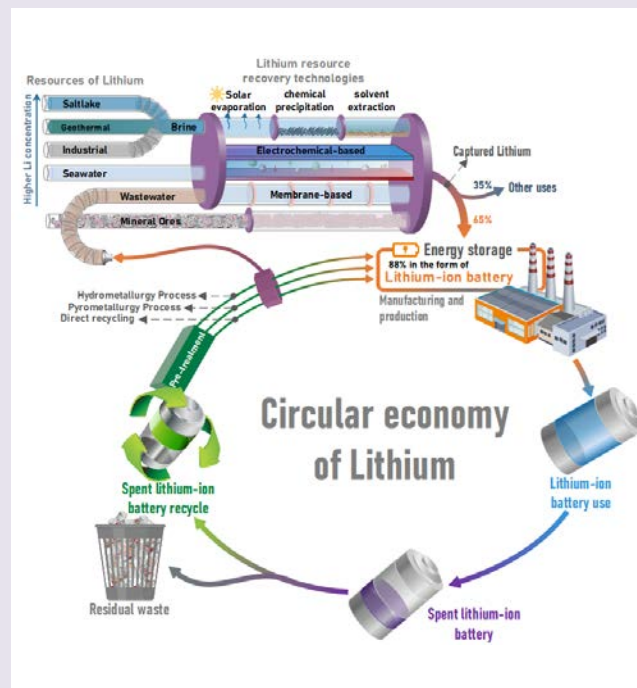


Figure 2. Schematic representation of the circular economy of lithium from resource to reuse.



Islamic-Christian Dialogue: **Historical Memory**

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Introduction

Muslims and Christians have lived through periods of history that have left some positive and negative effects. Advocates and Rejectionists of Islamic-Christian dialogue build their arguments on many religious, historical, and sometimes social points of view. The Advocates of Interfaith dialogue are based on a positive historical memory that brought the two religions together. On the other hand, the Rejectionists of the said dialogue recall dark patterns from such memory to use them as a basis for their views on the benefit and value of establishing an Islamic-Christian dialogue in our time.

This research aims to discuss one of the essential and hindering factors of Islamic-Christian dialogue, which is the "Historical Memory" and its existence in Christian thought, and analyzes the related perceptions of Islam and Muslims. One of the controversial issues is the "Islamic Conquests" which is deemed as a case study or as an applied model for this matter. The research deals with the most prominent images of this matter, namely: the points that manifest themselves in indulgence and recall, the points of regret or pride, and finally the points that oscillate between illusion and truth.

A Spotlight on the Existence of Historical Memory in Islamic-Christian Dialogue

The historical memory has formed an influential background in the Islamic-Christian dialogue. This background influences researchers to emphasize that one of the burdens that prevent the establishment of a fruitful Islamic-Christian dialogue is the "Burden of History," or what they called the "Aftermath of Past." Consequently, to present a new vision for the Islamic-Christian dialogue, the person shall not be drawn behind the distorted images that fuel our historical memory.

In view of that importance, this research seeks to extract the Islamic conquests out of their historical context and indicate their presence in Christian memory and awareness, and link the conquests with the issues of dialogue, as this obstacle is highlighted in a few texts only. Hence, the research aims to analyze the perceptions and perspectives related to the historical event in which Muslims met Christians, besides the judgments and assessments that are still in living memory.

Historical Memory and its Significance

Historical memory in this context means the mental/cognitive heritage associated with historical events shared between two religions or nations. Two levels are considered while writing research related to memory: The first is the individual level, and the second is

the collective level. The first level is of interest to psychologists and biologists, while the second level in which memory is revived is the collective level. Memory has the same aforementioned definition.

To talk about the significance of historical memory, it is necessary that the matter be addressed by dialogue. Does dialogue deal with the historical event, the historical narrative, or the historical memory? We believe that the interest in religions of researchers and those engaged in dialogue is related to historical memory. The historical event and narrative are closer to the work of the historian rather than the work of the interlocutor or researcher in religion. However, the religious scholar may be interested in the historical narrative to the extent that it may affect the historical memory so he checks its validity or lack thereof. The research in historical memory is not concerned with tracking the historical event altogether, but rather with highlighting the perceptions and perspectives related to that event, besides the judgments and assessments that are still in living memory.

In general, the historical memory of the Christians depicts Muslims as 'pagan, heretical, anti-Jesus, erotic, oppressing women, extremist, and savage invaders,' while the historical memory of the Muslims depicts the Christians as 'colonial, malevolent, and crusader.' These images formed in the consciousness of both parties affect the dialogue negatively. Charles Kimball highlighted this idea by stating that these conceptual and theological images are an obstacle to dialogue, as they are deeply ingrained in the consciousness, and the possibility of correcting the same is either impossible or undesirable. Features of historical memory arise in any Islamic-Christian dialogue; therefore, attention should be paid to the historical events that contributed to and strengthened the formation and consolidation of these images.

The Indulgence and Recall of the Historical Memory Image

In this part, the research aims to indicate the extent of the indulgence that a historical memory can achieve. The most prominent example of this indulgence is the history of Christian-Jewish relations, and the researcher who deeply thinks about the extent of the theological and historical differences between them will effortlessly realize the extent of the indulgence that occurred in the history of those relations.

We made a historical presentation of the nature of Christian-Jewish relations since the period of Christ (peace be upon him), the emergence of Christianity, and the multiple narratives that chronicled the beginnings of the change in the Christian-Jewish memory with the emergence of Protestantism in the sixteenth century, or the Holocaust. Until the



Prof. Ahmed Zayed

Catholic memory in the Modern Era, specifically in the Declaration of the Second Vatican Council in 1965, which marked the beginning of accelerated series of transformations towards Jews. Besides, we find many paradoxes in the Christian memory towards Islam and Muslims, as the intensive efforts made by the Popes after the Second Vatican Council to reconstruct the historical memory related to the Jews did not meet with parallel endeavors regarding the memory of the Muslims. Since it is possible to change the inherent hostility into brotherhood and loyalty, and improve relations with a religion that has been marked for decades by hostility to Christ, then, why forgiveness does not take place with a religion that believes in Christ and his call– “Islam”?

One of our conclusions is that the indulgence that occurred in the Christian-Jewish memory was built on an unconscious basis, as evidenced by the abandonment of the two religions of some of their beliefs, and the elimination of basic theological pillars to reach this level of understanding and rapprochement.

Pride and Regret in the Historical Memory

In this part, we present the disparity of tone in talking about the Islamic conquests among historians, thinkers, and philosophers. Some historians saw it, as one of the proudest achievements of Islamic history, and others would like to be allowed to erase this page from history.

One of our conclusions is that this difference between pride and apology is found in the various points that make up any historical memory. An event may be seen by some people as a defeat and by others as

a victory, and the same event is depicted by some people as a conquest and others as an occupation. The difference in the assessment of the Islamic conquests as being a conquest or occupation reveals the perspective related thereto, whether they are deemed as a source of pride or regret. Whoever considers them conquests feels proud of them, and whoever considers them occupations feels regret towards them. The second group usually tries to repudiate their historical memory, because they see it as reactionary and uncivilized behavior, while the first group considers their historical memory a source of pride and glory, the thing that explains the difference in view of the same event or historical points.

Truth and Illusion in the Historical Memory

In this issue, we have highlighted a picture of the work of historical memory, which is based on the dimensions of “imagined and realistic.” Historical memory may be loaded with images from the past, but it produces an image that is still present in the consciousness. One example of this duality in the Christian memory of the Islamic conquest is the incident of the burning of the Library of Alexandria by the Muslims. Although this incident has been transmitted to Christian historians for a period of time, it is considered a fantasy in the Islamic memory and we have seen enough testimonies from historians in this context.

One of the conclusions mentioned herein is that both Christian and Islamic memories have been filled with a mixture of the real facts of history and imaginary representations of the “other and his” image, but “the proportion of imaginary representations was and remains higher among Christians.”

STEM Education: Building National Capacities

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Dr. Fatma Kayan Fadlelmula and Dr. Abdellatif Sellami.

Do you recall how you were taught mathematics or science years ago? If you were in school some decades ago, you could think of sitting in a row quietly and watching the teacher solving a number of questions on the board until s/he thinks that the targeted learning outcomes are attained. The question that poses itself remains: What is the state of affairs nowadays? With increased knowledge of how students learn and the availability of new educational technologies, teacher-centered approaches are neither common nor desired practices in Science, Technology, Engineering and Mathematics (STEM) instruction. Indeed, even though earlier studies support the view that STEM teaching is mostly traditional, the literature suggests that STEM teachers are more likely to implement non-traditional approaches, encouraging student engagement, peer collaboration, and scientific discourse structured around well-designed authentic activities. Specifically, student-centered approaches with open-ended problems, think-pair-share activities, Socratic questioning, interactive games, online tools and challenging tasks that include observation, testing, and verification are of high importance in promoting

scientific thinking, conceptual understanding, and academic performance in students.

The recent COVID-19 pandemic has unraveled the compelling need for STEM more than ever before. After witnessing the agility of STEM professionals at the forefront of the battle against the pandemic in an effort to alleviate the impacts of the health crisis, world nations now realize that equipping citizens with STEM knowledge and skills is invaluable for readiness in case of unpredictable emergencies.

With nearly half of Qatar's local population under the age of 20 and the need for skilled young professionals, education reforms articulate a great emphasis on STEM education as a fundamental asset for the country's sustainable development and its transformation into a "knowledge society." However, multiple education reforms, national and international, indicators still demonstrate that students are underperforming in terms of academic achievement, college attendance, and their participation in STEM-related fields.

Results from standardized international tests, such as Trends in International Mathematics

and Science Study (TIMSS) and Programme for International Student Assessment (PISA), reveal that students in Qatar are lagging behind in mathematics and science at all levels. As such, there is a growing concern among educators, policymakers, and industry leaders that the quality of STEM education on offer does not produce enough qualified graduates who possess critical STEM skills and knowledge.

Challenges

A recent review of STEM research in the Gulf Cooperation Council (GCC) has shown that cultural (stereotypes), contextual factors (role models and family), school level factors (instruction, teachers, and pedagogy) and student level factors (students' attitudes, motivation and aptitude) act as significant barriers to students' participation in STEM fields.

In particular, regarding challenges related to students, results highlight numerous obstacles related to both inner and external conditions. The inner conditions encompass cognitive, affective, and motivational factors, including lack of interest, poor motivation, negative attitudes towards learning mathematics, and negative beliefs about an individual's ability and potential. By contrast, external conditions comprise teacher-related factors, such as poor experience, subject knowledge, qualification, negative attitudes, interest, motivation, and efficacy beliefs about teaching. In addition, external factors consist of contextual factors, including under-resourced and large sized classes, and negative attitudes of family members, friends, and society.

With regards to school-level factors, non-traditional teaching approaches were reported to have a positive impact on student learning. However, they were also found to be time-consuming and created a noisy and disruptive environment, greatly affecting students who preferred to work independently. As for collaborative work, results suggest that, while some group formations are supportive and inspirational in nature, others are highly unproductive, transforming even the most hard-working students into passive observers.

Previous findings underline the importance of the type, and the quality of teacher guidance, in particular, learning contexts. For instance, research shows that too much help can detract

from the problem-solving process, with an original problem becoming a mere standard exercise, ensuring that the lesson duration is appropriate for students' attention span and preventing disruptive behavior during lessons. Indeed, not every teacher is a fan of student-centric pedagogies. Further, some teachers may be more hesitant when it comes to making a change in their teaching methods due to a fear of failure.

In the context of Qatar, research on the impact of COVID-19 on students' learning shows that students' and teachers' demographic factors (gender, school type, grade level, and majors) were disruptive to students' STEM learning during the pandemic. Specifically, both students and teachers perceived keeping up with the coursework, being physically isolated from classmates, and keeping a regular schedule at home to be key barriers to teaching and learning. Results also reveal that neither students nor teachers viewed communication with staff and teachers during the crisis, or accessing and using technology as barriers. Moreover, school type and gender emerged as important predictors of how students and teachers perceived STEM learning during the pandemic.

Future directions

At the heart of a series of successive educational policy reforms in Qatar, STEM education has taken the center stage. A key element underlying these reforms is the need to build a national capacity, hence the importance of STEM and the demand for funding and promoting STEM-focused research. Such research has the potential to inform classroom teaching and learning, and enrich learners' experiences inside and outside school. To build on and contribute to the existing literature, further research is required to investigate various aspects of STEM education in Qatar and the broader GCC countries, particularly in areas to do with the use of cross- and multi-disciplinary approaches to STEM teaching, including teachers' and students' personal and demographic attributes and contextual and socio-cultural characteristics. Future research could also garner more information about how to provide quality STEM education, even in the time of crisis, and assess the long-term impact of the pandemic on students' STEM learning.

From Traditional to Modern Medicine: An Eye on Qatar's Health and Medical Renaissance

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This article deals with an attempt to monitor the development that occurred in the way the Qatari society deals with modern medical institutions and the development that occurred in these institutions from the end of the nineteenth until the twentieth century.

Until the end of the nineteenth century, Qatari society, like most societies in the Arabian Gulf, possessed a healthy culture inherited from folk remedies, where the popular sage carried out the incantation, herbal treatment, cauterization with cupping, etc. They used to bring herbal medicines and treatment materials from the apothecary's shops, so a number of apothecaries also had experience with these folk remedies. Most of these medical practices were carried out by the "*mutawa*" in addition to their well-known tasks related to books and mosques, while the "barbers" practiced some medical tasks such as circumcision, cauterization, cupping, and tooth extraction, while women performed obstetrics at home.

As a result of the difficult economic conditions, ignorance, and superstition, and with the lack of modern medical services, people believed in the efficacy of these types of inherited Arab folk medicine, more than their belief in modern medicine. That is why common diseases such as smallpox, measles, cholera, plague, whooping cough, trachoma, tuberculosis, and malaria killed them, in addition to intestinal and reproductive diseases, eye diseases, and skin and respiratory diseases resulting from the practice of the diving profession.

Colonial Britain, despite its interests in the Gulf region, did not pay attention to the epidemics that decimated the population and did not work to resist them. It opposed the establishment of an Ottoman Health Center in Qatar, as it was a state belonging to the Ottoman Caliphate, in the context of the struggle over sovereignty between Britain and the Ottoman Empire in the region.

Modern medical services in the Gulf region have been associated with American missionaries in particular, as medical hospitals were one of the Christian missionary tools. In 1910, the American-Arab Mission opened its headquarters in Bahrain, Kuwait, and Muscat. In Manama, it established its largest hospital, the Mason Memorial Hospital, in reference to the Mason family that funded the construction of this hospital. Medical campaigns were launched from Manama to Riyadh, Hofuf, Qatif, the emirates of the Omani coast, and Qatar to treat the people.

Until 1934, there was no resident doctor in Doha, when Sheikh Abdullah bin Jassim brought in a

doctor from Bahrain, named Muhammad Mahmoud Behzad, to be his personal physician and to provide his services to citizens as well. In 1945, Sheikh Abdullah also brought in a foreign consultant doctor to supervise his health condition, and to provide his services to citizens through a small clinic in Doha.

With the advent of the oil Exploration Company, came up with its own hospital in the late thirties of the twentieth century. It was not under the supervision of the government but was allocated to the employees of the company, and it provided its medical services to citizens.

In general, the Qatari people did not enjoy a Qatari medical institution until the forties of the twentieth century. This is what prompted Sheikh Abdullah bin Jassim, during the Second World War, in order to meet the needs of the people to build a medical hospital, even if it was a humble initiative at first, and had prospects to be expanded in the future. The American Hospital in Manama provided a helping hand, as the hospital's chief physician, Dr. Storm was sent to Doha to choose the location of the hospital and the required medical supplies. During the fall of 1947, Doha Hospital was completed as the first Qatari hospital in Doha.

Within the years (1949-1960), oil resources flowed to the State of Qatar, Sheikh Ali bin Abdullah Al Thani began to develop economic and social conditions of the country. In addition, the increase in oil export operations required bringing in a number of technical workers to Qatar, and a number of citizens flocked to work and seek livelihood, which constituted a burden on civil services, including the only hospital in Qatar that was founded by Sheikh Abdullah, known as "Al-Jasra Hospital," or Old Doha Hospital. The plan was to develop the Old Doha Hospital. During the year 1950, a medical team of experts in radiography arrived in Doha, for installing x-ray machines in the hospital. For this reason, it was ensured that the hospital specialized in chest diseases.

In 1951, the "Department of Medical Services" was formed, and it was the first government agency responsible for healthcare in the country. During that period, the staff of the doctors of the American missionaries who came to Doha in the Old Doha Hospital was in constant conflict because some of them had reached retirement age, or because a number of them had died due to tuberculosis and other diseases. In February 1952, the hospital was handed over to the Qatari government.

However, with this, there was an urgent need for a new government hospital, and during February 1957, the new government hospital was opened, which was called "Rumaila Hospital." It was equipped



Prof. Youssef Ibrahim Al-Abdullah

with the latest medical equipment and doctors' residences. Meanwhile, the Old Doha Hospital in Al-Jasra was transformed into a hospital for maternity and childhood care, chest and chronic diseases. However, during the year 1959, the government considered building a new hospital for tuberculosis, but after the completion of the construction, the officials decided to convert it into a maternity hospital, and it started to be known as "Hamda Hospital."

During the reign of Sheikh Ahmed bin Ali Al Thani (1960-1972), a law was issued regulating medical services and facilities, according to which a new department was created, which became known as the Department of Medical Services and Public Health. In 1964, Qatar joined the World Health Organization, and Qatari children participated in nursing and management training programs.

During the reign of Sheikh Khalifa bin Hamad Al Thani (1972-1995), the Hamad General Hospital was established by an Emiri decree in 1979, with a capacity of 660 beds for patients, and a unit for integrated care and emergency. It was equipped with the latest medical equipment. In 1982, the three major hospitals (Hamad General Hospital, Rumaila Hospital, and Maternity Hospital) were merged, in addition to other medical units, under one administrative umbrella.

During the reign of Prince Hamad bin Khalifa (1995-2013), the Supreme Council of Health was established by virtue of Emiri Resolution No. (13) of 2009. The Council, as the supreme authority concerned with the affairs of healthcare in the country, aims to provide the best healthcare; also preventive/curative health services in a manner that is at par with the international standards and global appreciation, within the framework of the State's general policy

During the reign of His Highness Emir Tamim bin Hamad Al Thani, there has been an unprecedented boom in the medical services provided to citizens, in terms of the quality and quantity of these services, through a clear strategy to build a global healthcare system, and cooperation with international medical institutions holding high medical reputations, which in-turn helps to achieve the Qatar National Vision 2030. This strategy has seven objectives, including, "an integrated and advanced healthcare system that provides services to all members of society, the provision of preventive healthcare, and a skilled national staff capable of providing health services at the best, combined with a national health policy that sets and monitors quality standards."

Thus, the health and medical renaissance covered all parts of Qatar, and keeps getting better at the international level in the era of His Highness Emir Tamim bin Hamad Al Thani.

The Importance of the Quranic Research in Deducting the Provisions in the Islamic legal Politics: Issue of Mu'aahadun¹

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This research is about the significance of scholarly research in the Holy Qur'an in the field of Islamic politics especially addressing the issue of treaties in Islam. This research is aimed at discussing the said issue based on the Islamic vision for the humanitarian political Islamic gathering that is affecting that vision and hence affected by it. The issue occupies a critical position in building a concept of the international relationship between the Muslim and non-Muslim bodies. The purpose of this research is to study this topic in order to reveal the Islamic point of view regarding treaties as well as the Islamic approach to establish justice, freedom and maintain the dignity of all parties.

After exploring the Quranic verses addressing "treaty" and parties involved in treaties, the term "treaty" can be defined as a binding political agreement between two parties for a specified period. To guard against other agreements concluded in fields other than the political field, the phrases "political agreement" and "binding" were chosen to clarify that it is not one of the non-binding agreements that enable the parties to withdraw from the agreement without prior notification, but this agreement is binding for both parties. The treaty is not concluded endlessly, but its duration shall be specified and may be renewed as long as the parties are committed to its clauses.

However, the Quranic discourse refers to the non-Muslim party of the treaty (Mu'aahad) as the person with whom Muslims have a treaty of mutual alliance and is living outside the Islamic State.

This definition necessitates that the Mu'aahad is a non-Muslim, outside the Islamic State and he must be committed to the covenant. This is understood from the concept and implication of the Quranic verse in which Allah, the Almighty, says: ***(How can there be for the polytheists a treaty in the sight of Allah and with His Messenger, except for those with whom you made a treaty at al-Masjid al-Haram? So as long as they are upright toward you, be upright toward them. Indeed, Allah loves the righteous [who fear Him])*** [Surah Al-Tawba: 7].

The holy Quran provided clear parameters that help in identifying the types of Mu'aahadun in the Quran which can be divided into three categories:

A group called **Committed Mu'aahadun**, this description was given to them because they respect their commitments with Muslims in that they did not breach their agreements, and they did not help anyone against Muslims i.e. there was no harm from their part to the Muslims. The Quranic verses, in other contexts, unveil the attributes of those mu'aahidin who did not fight the Muslims, nor did they expel them from their homes, the Quran urged Muslims to deal with them kindly and justly.

According to this mutual commitment between the two parties (in a treaty), there are certain rights and duties that should be adhered to. The Mu'aahadun enjoy six rights that Muslims should fulfill: Muslims shall adhere to the duration of the treaty; they should not attack their allies; they are not allowed to fight them as long as they (Mu'aahadun) are neutral; not to help their enemies; deal with them kindly and justly; and Muslims have to pay the blood money (diyya) as a compensation for the Mu'aahad who was killed unintentionally by a Muslim.

As for the Mu'aahadun duties towards Muslims, they have to be mutually committed to the clauses of the agreement; not to help the enemies of the Muslims; not to expel the Muslims from their homes; and not to attack the Muslims' allies.

On the other hand, any breach of the above by the Mu'aahadun results in violating the clauses of the agreement, i.e. termination of the agreement, so they will be transferred from being committed Mu'aahadun to become uncommitted Mu'aahadun. This description complies with the Quranic parameters which clarified their entitlement to this description because they do not comply with the agreement and they repeatedly breach the treaty, whether by fighting the Muslims or by distorting Islam, attacking the Muslims' allies, and helping the enemies of the Muslims. All the previously mentioned are good reasons/justifications for fighting the covenant breachers. Consequently, they must be fought and not to be supported.

The third type of Mu'aahadun are those whose covenant is untrusted. In this research, they are called **Untrusted**

Mu'aahadun. The distrust of them results from considering their acts that represent a breach of their agreement and betraying the Muslims. The mechanism of addressing this group is shown by the holy Quran and reaffirmed by the Messenger of Allah (Peace be upon Him). If we notice some signs or doubts indicating their betrayal, their agreement must be breached. Allah Almighty says: ***(If you [have reason to] fear from a people betrayal, throw [their treaty] back to them, [putting you] on equal terms. Indeed, Allah does not like traitors)*** [Surah Al-Anfal: 58].

Throwback means breaching the agreement, without which the Muslims cannot embark upon any action towards those untrusted treaties. Therefore, Allah allowed the breach of the covenant, in this case, to enable the Muslims to take care, so they can avoid two things the first is to avoid betrayal because they cannot proceed to fight during the agreement; the second thing is protecting themselves from the betrayal of their enemies. The Islamic view on deterring the enemies is not to wage a preemptive war, but to depend on the balance of forces, and to get ready to deter the enemies as Allah Almighty said: ***(And prepare against them whatever you are able of power and of steeds of war by which you may terrify the enemy of Allah and your enemy)*** [Surah Al-Anfal: 60].

The Quranic verses that discussed this group organized the mechanism to deal with them by expressing the wish to terminate the agreement with whom you are afraid of their betrayal. Fear of betrayal is not only doubt, but also the appearance of first signs of betrayal, and seeking to verify it. Consequently, they must be informed of the wish to breach the agreement. Then, the phase of preparing starts to face any danger that requires preparation of the deterrent force, which means not using the force but the force must exist to deter the enemies and prevent their attack. This does not end here, but there is a return line, which is accepting peace from those we fear their betrayal if they wish, Allah says: ***(And if they incline to peace, then incline to it [also] and rely upon Allah. Indeed, it is He who is the Hearing, the Knowing)*** [Surah Al-Anfal: 61].

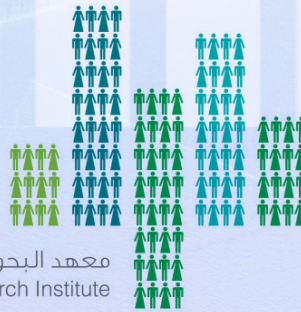
In conclusion, the research highlights the importance of the Quranic research in deducting the provisions in general, and the Islamic legal politics provisions in particular. This means that the holy Quran is comprehensive regarding the political field, which organizes peoples' life, establishing the principle of justice. The holy Quran maintained the rights of the Committed Mu'aahadun as well as the mechanism of dealing with non-committed and Untrusted Mu'aahadun, which is based on kindness and justice. At the same time, the holy Quran maintained the rights of Muslims and secured the Islamic State against any acts of betrayal or exposure to betrayal. The Quran also established a great rule for securing the Islamic State's borders; and maintain the force balance rule.

¹This research was published in the Journal of Islamic Studies and Thought for Specialized Research, Malaysia, Volume 7, Issue 4, pp. 46-74, October 2021.

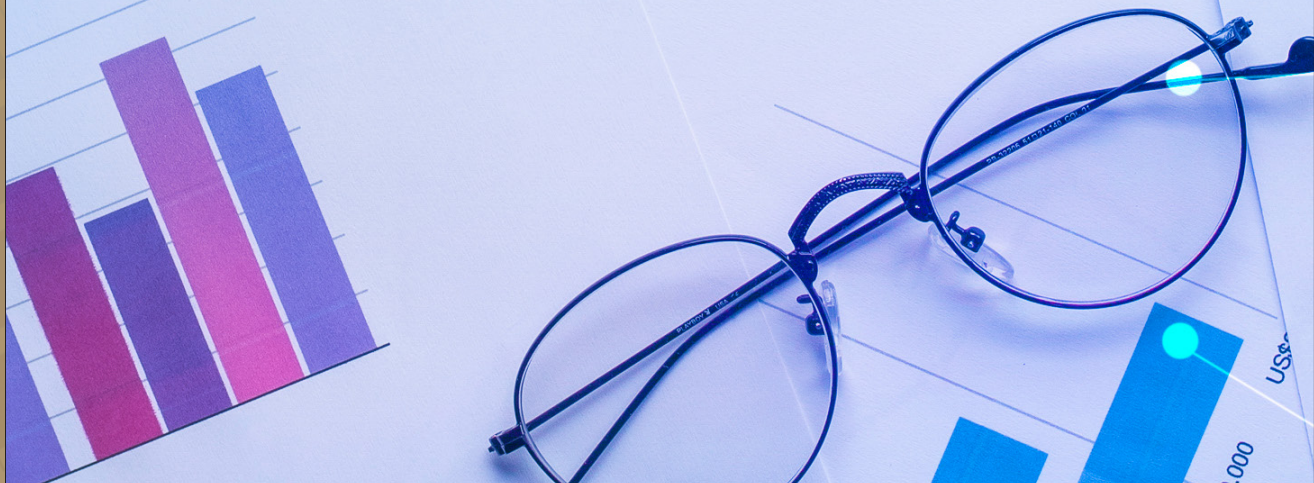
Story of a Knowledge Platform:

The Social and Economic Survey Research Institute (SESRI) Qatar University

SESRI



معهد البحوث الاجتماعية والاقتصادية المسحية
The Social & Economic Survey Research Institute



The Social and Economic Survey Research Institute (SESRI) at Qatar University (QU) adopts a methodology that focuses on promoting the role of measurable survey research to face contemporary challenges. SESRI provides researchers with high-quality research technologies and contributes to designing research that is connected to national needs, which supports the plans and needs of institutions and communities with scientific outcomes through the development and organization of their abilities. We are meeting Prof. Kaltham Ali Al-Ghanim, Director of SESRI at QU, to learn about the Institute and its mission and services.



Prof. Kaltham Al-Ghanim, attending the activities of the Social and Economic Survey Research Institute (SESRI).

Prof. Kaltham, Please tell us when was SESRI established? What are the Institute’s mission and goals?

The Institute was established in 2008, supported by QU administration. SESRI seeks to contribute to achieving national development through advancing the empirical social sciences and survey research, as well as strengthening the awareness of the community on the main challenges and issues that State of Qatar faces in order to achieve the vision of QU. SESRI aims to contribute to the development and improvement of the community by providing high-quality data deduced from survey studies to support the process of policymaking, setting priorities, supporting data-based planning, and conducting research in the social and economic sectors.

The Institute adopts survey research; how is it applied, and what are the factors that decide the need to conduct this kind of research on a certain issue or problem?

The necessity of conducting survey research is determined by society and the current issues or modern phenomena that deserve to be studied. All research applied by the Institute goes through specific stages. These stages start from identifying the social and economic concepts and considering the range of available options for achieving the results, along with their requirements in addition to the resources required. This is followed by the development of a plan regarding the scope and schedule of the project. Next, the research team is allocated, and the agreed-upon goals and procedures are achieved. Afterwards, the calendar plan, which includes improving the survey and collecting and analyzing data, is applied to the achievement of the results, recommendations, and the end of the project.

The latest developments at the Institute:

- The Urbanization Development Desk was established in the Policy Department to conduct survey research on the indicators of the quality of urban life.
- Establishing economic development projects in the Policy Department through conducting the Consumption Indicators Project under the Economic Development Desk at the Policy Department
- In the last three years, SESRI has passed the internationally recognized ISO 9001: 2015 Quality Management Standards from Beru Veritas.

Please mention some crucial research papers and projects going on at the Institute for 2023.

The Institute has several existing projects; we will mention some of them:

- Open Government Data, through which we attempt to support the Open Government Data Initiative in the State of Qatar and the usage of the displayed data; we also evaluate the awareness level of the availability of government data.
- Qatari Youth Survey, which aims to elucidate the attitudes of the youth towards a number of issues, such as the educational, functional, and social changes that occur in the lives of the Qatari youth from the age of 18 to 29.
- Qatar Semi-Annual Survey Project (QSAS).
- Environmental Impacts of Camping.
- The FIFA World Cup Qatar 2022™ Survey Perceptions and Attitudes of Qatari citizens and residents pre and post games.
- The National Identity Project.
- Agriculture census, Productivity and Planting cost survey.

- Completing the National Study of Mental Health in Qatar implemented in 2021-2022 in cooperation with Harvard University, University of Michigan and Hamad medical Cooperation.
- The family Cohesion Indicators Project.
- A research entitled “Qatari Attitudes toward University Education” in cooperation with Waseda University, Japan.

The Institute provides some services in the Survey Clinic; what is the objective of the establishment of this Clinic?

The main objective of the Survey Clinic is to build the capabilities related to data through the development of research capabilities and skills of the members of the QU community. Consultation is provided in the fields related to the theoretical and methodological phases and parts of the survey project management. On the theoretical side, this is accomplished by designing and developing questionnaires, designing and selecting samples, and adjusting data. On the other hand, field consultation is provided by setting up data entry, improving and coding data, developing analysis plans using statistical software such as SPSS or STATA, and finally presenting the results.

How does the Institute support individuals and institutions in the community?

Public opinion is considered an integral part throughout the research process. Research outcomes are published in different forms, such as press statements, official reports, political briefings, conferences, seminars – both in-person and remotely – and charts, to ensure that it is available to individuals and institutions. In addition, to the cooperation and partnerships existing between SESRI, the institutions, and different ministries of the State, which aim to implement several new projects and address contemporary issues.

Would you tell us about the national and international partnerships of the Institute?

The Institute is distinguished by its close partnerships with international universities, such as Waseda University in Japan, as well as other universities in the United Kingdom and Europe. Nationally, we have several projects with the stakeholders and collaborators, such as the Ministry of Social Development and Family, the Ministry of Municipality, the Ministry of Environment and Climate Change, the Supreme Committee for Delivery and Legacy, and the Doha International Family Institute. These partnerships result in several outcomes and recommendations through which we aim to influence the creation of policies and decisions related to the Qatari community.

What role did the Institute play in the World Cup, whose success we experience today?

SESRI carried out several studies related to the World Cup 2022, including a survey on the perceptions and attitudes of the citizens and residents that was completed in two stages – pre and post the World Cup, in addition to a survey on the perceptions and attitudes towards the Supreme Committee of Delivery and Legacy.

Furthermore, SESRI adopted projects related to the rights of workers in cooperation with the Ministry of Administrative Development, Labor and Social Affairs, and the ILO. These studies are surveys that provide objective, reliable indicators that reflect reality and its changes that can be measured over time.

Would you tell us about the training offered by SESRI to employees and students in the Research and Policy Departments?

Building research capabilities that are instrumental in producing a sound evidence base for policymakers in line with Qatar National Vision 2030 and Qatar National Research Strategy is one of the most significant foundations on which the Institute is based. Every year, SESRI manages a training program for students. Because the Institute has a university research nature, we are able to reach faculty members in different colleges. The Institute consists of multidisciplinary academic staff, which allows students to have a “practical” empirical educational experience.

What is your evaluation of the outcomes of the Institute’s efforts? Are there any new orientations in the future?

The Institute paid significant attention to following survey standards. All of its studies and projects are based on scientific surveys. This indicates that the samples are carefully selected and that they represent the targeted population. The academic staff of the Institute are members of the American Association for Public Opinion Research (AAPOR) and the World Association for Public Opinion (WAPOR). These associations set the survey standards with the best practices carried out, which enabled the Institute to successfully obtain ISO-9001:2015 over the last three years.

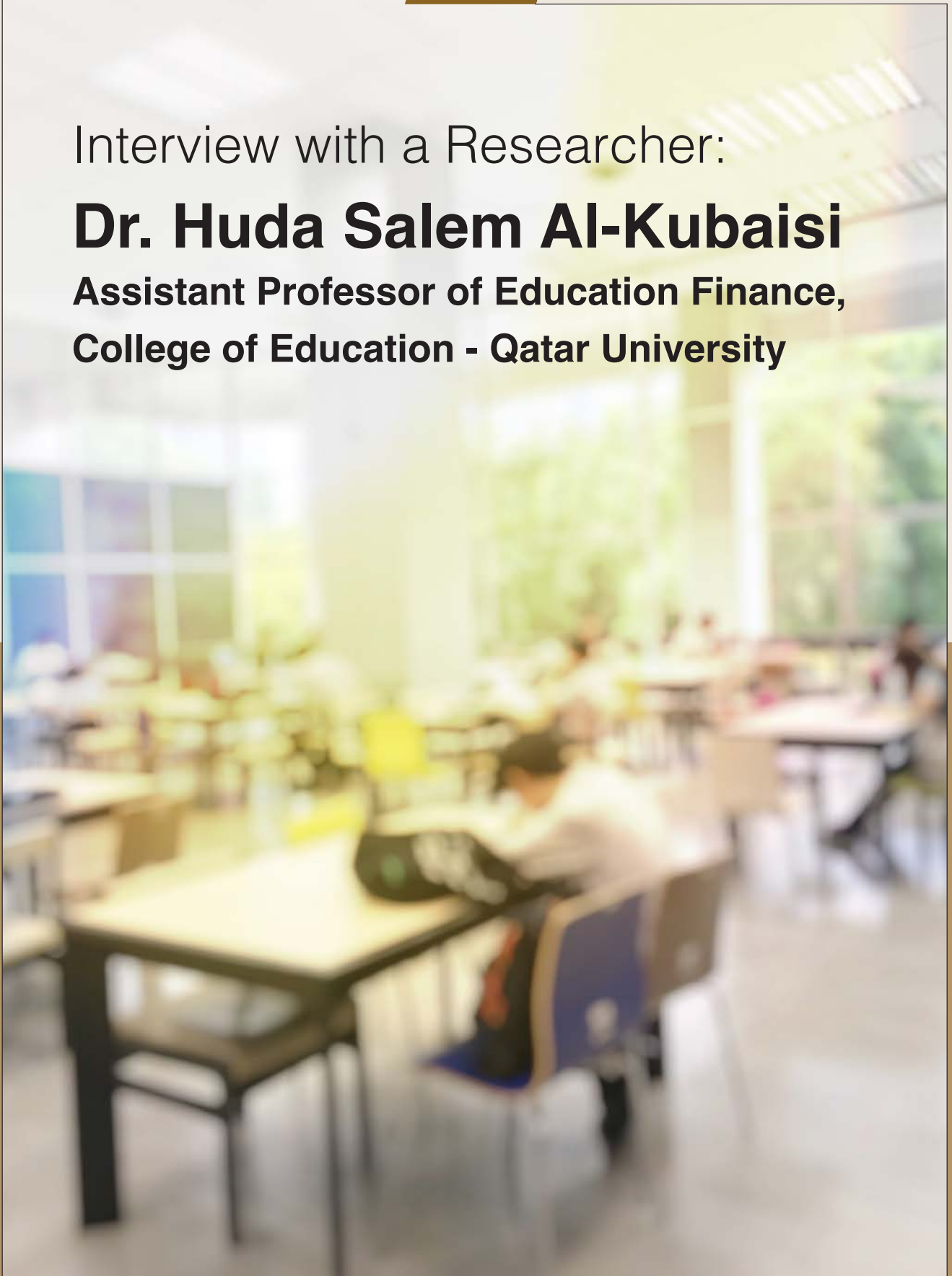
The Institute will continue doing surveys because we aim to attract decision-makers in the State of Qatar who depend on evidence-based data. It undertakes to provide sound and reliable data to guide policy formulation and set priorities in both the social and economic sectors through the collection and analysis of data, followed by the presentation of this data in the form of recommendations and deductions.

Year after year, SESRI focuses on producing studies and projects that are significant to the State of Qatar, as well as attracting related experiences and making effective and successful recommendations and policies.

Interview with a Researcher:

Dr. Huda Salem Al-Kubaisi

**Assistant Professor of Education Finance,
College of Education - Qatar University**



The Qatar University's College of Education is characterized by its distinguished position in preparing specialists in the field of education by promoting both learning and teaching as well as strengthening research and social partnership. The College is committed to providing its members with a motivated educational environment that supports both learning and teaching in a manner that combines modernity and tradition, and creates a balance between them to preserve the Arab and Islamic identity. Moreover, the College provides highly qualified specialists in the field of education and continuous professional development through supporting scientific activities and effective partnerships. Hence, Qatar University Research Magazine is pleased to meet Dr. Huda Al-Kubaisi; one of the distinguished cadres of the College of Education, Assistant Professor of Education Finance, and the former director of the National Center for Educational Development.

Dr. Huda, how would you make yourself known to the University community?

I am Huda Al-Kubaisi, Assistant Professor of Education Finance at the College of Education. It was at Qatar University that I studied before becoming a faculty member, and it was here that I earned my bachelor's degree in Business and Economics as well as began my career as a teaching assistant. I obtained my PhD from University College London in the United Kingdom; I then re-joined the Department of Educational Sciences at Qatar University. I had also an advanced specialized certificate, the "Certificate in Education Finance" from Georgetown University in the United States. Further, I was appointed, in 2021 as Director of the National Center for Educational Development (NCED) at Qatar University until this semester when I took a sabbatical leave. My research interests are focused on the fields of Education Finance, Leadership, Resources Management, Education Reform, and Institutional Accreditation. Currently, my duties include teaching, research, community service, and services at Qatar University. At present, I am on a sabbatical leave at the University of Sharjah and have been involved in several research projects and activities there.

What motivated you to specialize in Education Finance? And what does it mean?

Let me reverse your question a bit and talk first about Education Finance, it is then I will explain the reasons behind my interest in this combined specialization. Nowadays, education is considered a long-term investment made by countries. A large portion of the governments' budget is dedicated to education and health. For example, Qatar allocated 20% of the 2023 budget for both sectors. To illustrate, 21.1 billion Riyals (11%) and 18.1 billion Riyals (9%) to health and education, respectively. Moreover, funds for education

usually come from several resources such as public funding (the greater portion), private contributions from families, national or external donor funding or a combination of them. Studies indicate that securing the financial expenses to provide and extend, not to mention develop education is one of the most significant existing problems facing the educational systems. Thus, the demand is that education must be funded in a manner that is commensurate with its importance as well as its economic and social returns. It has become increasingly popular for countries where the private sector is the most prominent source of financing to seek additional sources. HE the Minister of Education and Higher Education addressed this issue in the recent UN international summit on Transforming Education held in New York in September 2022.

Education finance is an integral part of educational economics, which focuses on both financial and non-financial resources allocated to education. It is defined as "getting the financial resources necessary to implement the education plan within a specified timeframe based on budgetary constraints." It entails ways of allocating and utilizing fiscal and in-kind resources to achieve sustainable and good education for those of school age. Now, having an economic background as a graduate of Economy and Business and my passion for Finance, along with my sense of belonging to the College of Education and the novelty of this specialty, motivated me to join this specialization and be unique in it.

Reviewing your biography, which includes several publications, books, and conferences, what are your most significant research achievements?

In my current research projects, I work across several specializations, in part because my specialization is the combination of several sciences with a variety of applications. In one of these studies, a colleague from Kuwait and I conducted a Delphi study on "the perceptions of school directors regarding diversifying school financing resources." Another project examines higher education financing in Arab countries, taking into account challenges and obstacles and proposing solutions, and that was funded by Georgetown University. As a specialist, I recognized that I had a responsibility to contribute to the discussion of this topic, so I published a book in 2022 entitled "Education Economies: Cost and Return." Further, under the guidance of an Australian professor, we have obtained final approval for our upcoming journal to be published by Brill International Publishers in January 2024. I will also have the privilege of serving on this journal's International Consultative Council.

As an educational leader, reveal to us, how does educational leadership serve the Qatari Society?

Educational leadership has a crucial role to play in



...serving the nation and society by providing visions and developing scientific perceptions that are effectively and efficiently applicable to achieving the society's goals, including preserving its identity and religion as well as achieving sustainable development and wellbeing. To accomplish this, we must provide high-quality education that contributes to building a skilled workforce that meets the needs of the fast-growing economy. Leadership should also participate in research, innovation, and finding solutions to society's problems. In addition, it should contribute to the development of future leaders by offering opportunities for students to develop leadership skills and civic involvement. Developing social partnerships is considered important because it facilitates economic growth and fosters social responsibility.

Qatar University students are readers of the Magazine, what advice would you like to give them through your academic and research experience?

The enthusiasm of QU students as researchers is encouraging and could be a sign that they will be able to produce distinctive researchers in the future, given the funding opportunities the University provides and the annual Student Research Poster Exhibition. In my capacity as a researcher, I would like to encourage students to pursue their passions and interests, choosing a field of study that encourages them to learn, ask questions, and seek answers. Furthermore, they should read and take advantage of their association with the University, and they should remember that research is a slow and difficult process, so they should be patient, persistent, and hardworking.

What are the challenges that you face as a researcher?

As far as I am concerned, it is difficult to find researchers around who have a similar or closely related specialty, or at least share the same passion or interest for working together. At QU, everyone strives to publish their research in their field of expertise. I excuse them because, when it comes to academic promotion, researchers must publish their research in the same field of specialization. Thus, I may study fields of joint interest or conduct my own research.

Further, time management is a major challenge for researchers. For example, the teaching burden and administrative work that I actually experienced during my term as the director of NCED weighed heavily on me as a member of the faculty. Financing research and obtaining ethical permissions often involve extensive paperwork and take a considerable amount of time for researchers, especially those with rare specializations. Finally, it is considered a significant challenge in research to obtain high-quality or sensitive data, such as fiscal or limited allocations.

What are your research plans for the academic year 2022-2023?

The research that I am conducting aims to examine the perceptions of higher education students in GCC countries regarding accreditation. Students from different higher education institutions in the region are included in the sample. Furthermore, I have submitted the final version of my upcoming book entitled "Modern patterns for managing educational institutions" to Qatar University Press. I anticipate that it will be published within the next few months, with Allah's permission.

Researcher Business Card

Dr. Maryam, how do you introduce yourself to the University community?

My name is Maryam Al-Ejji, I graduated from the Physics department at Qatar University. I worked in the material technology unit before it was promoted to the Center for Advanced Materials (CAM) in 2010 as a research assistant. After that, I obtained my master's in Material Science and Engineering from the University of Sheffield (UK) and became a researcher. Then, I had my PhD from the Imperial College of London (UK) with a thesis titled the "Bioavailability of Engineered Nanoparticles."

What are your main research interests in Materials Science and Engineering?

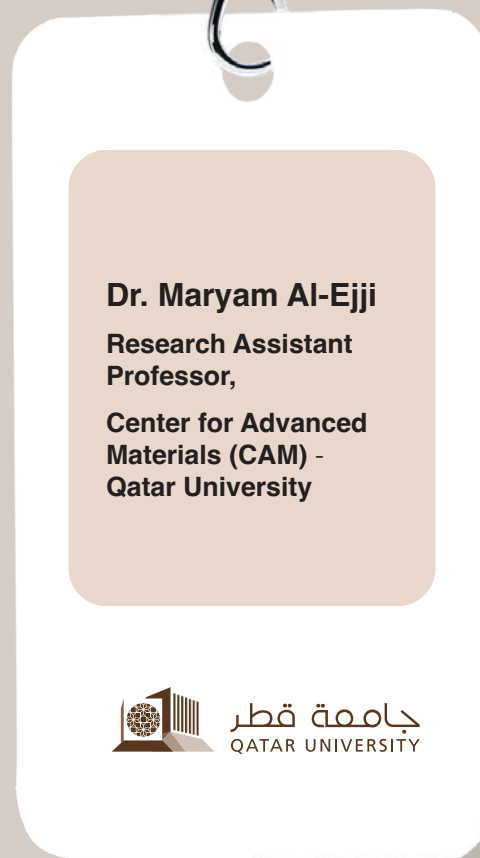
Mainly, I am focusing on the material characterization, transformation of nanomaterials in the environment, and fabrication of polymeric films and composites.

How does this major serve the environment in Qatar?

I have a project on fabricating a pretreatment membrane for treated sewage effluent (TSE) wastewater for irrigation purposes. The idea is to encourage a water reuse program in Qatar with an incentive to reduce the adverse environmental impacts of desalination and TSE treatments. In addition, I am involved in a project that will start soon, related to sustainable agriculture in an arid climate, focusing on reducing the impact of climate change and the depletion of natural resources in Qatar. Recently, our team had an opportunity to analyze nanomaterials specimens in the Helmholtz-Zentrum Berlin facility in Germany to identify the chemical and electronic bonding structures. These nanomaterial applications are monoxide reduction, hydrogen storage, and dye degradation.

What is your message to students for achieving research excellence?

Researchers with skills and confidence would be more reachable to academia and scientific communities. Therefore, students must establish a framework with time management for their research; they can also consult someone more experienced in



the field. Achieving excellence in research requires hard work, commitment, patience, and remaining updated with recent publications.

You obtained your PhD in 2020, how did Qatar University support you on this journey?

Qatar University believes that academic staff can play a role in the University's performance and the society's development. Therefore, I was encouraged to step forward to obtain a PhD degree. To add, since I am working at the Center for Advanced Materials, the equipment was accessible, and assistance was provided when demanded.

"A day in the lab," how would you describe it?

I describe it as an adventure, and it begins with planning, which is the main factor in the work of the laboratory that it is fully equipped for experiment. Then the journey of achieving results begins accurately and continues with enthusiasm.

Interview with Student:

Salwa Al-Maraghi

A third-year student, College of Medicine - Qatar University



Under the guidance of the national leadership and a strategic partnership with the health sector in the country, the College of Medicine was established in 2014. The College focuses on the special needs of the healthcare sector in the State of Qatar, as well as being in line with national strategies and priorities in the field of education and healthcare. Qatar University is working to consolidate a powerful medical college that provides the community with qualified doctors who are an integral part of the health system and the Qatari society. Salwa Al-Maraghi, a third-year student at the College of Medicine in Qatar University, joins us in this issue.

Salwa, introduce yourself and tell us why you enrolled in the College of Medicine?

I am Salwa Al-Maraghi, a third-year medical student. Since high school, I have been studying about the human body; it has been the most interesting topic for me. I enjoyed learning how the human body works, its normal functions and the abnormalities that can happen in it. Nevertheless, applying to medicine required a lot of thinking from me because I wanted to make sure that medicine is the right path for me, since I was well aware that medicine is not an easy major and that it is going to require dedication and motivation in order to continue in this path. Fortunately, after 3 years in medical school I can say that it was the right choice because as we progress through the years we get more into the clinical aspects of medicine and we start getting exposed to hospital settings and we try to help patients even if it is with the bare minimum, like comforting them and this always makes me content. As a student, I always liked how different healthcare professionals gather and try to work on the best possible treatment plans for a patient, which made me even more passionate about the medical school.

Since you joined the University until this moment, how has the College been supporting you in your studies?

Any kind of support throughout the course is very important for us as students; the source of support can be your family, friends, and professors at the college. The College of Medicine at Qatar University provides a very healthy environment for students, which has a positive impact on our educational journey. Moreover, having supportive faculty members at the College, who are always aiming to get the best out of us as students and make sure that we develop full understanding of various topics in medicine has always been a source of support for me.

Nevertheless, Dr. Michail Nominkos the Head of Research and Graduate Studies at Qatar University–College of Medicine, built a “mentor–mentee program,” which is where each student at the College is assigned with a mentor. This program’s main aim is to support and guide us as students throughout our academic journey.

How do you describe the demand of students in the faculties of health specialties such as medicine, dentistry, health sciences, pharmacy and nursing?

Overall, the demand of students in healthcare majors in Qatar is increasing. There are many factors that contribute to that, but I believe that the main reason students are willing to enter the health sector is because of the various activities that are organized for high school students by QU Health. These activities are helpful in ensuring that students have full knowledge of the healthcare professions and what the role of each member of the healthcare team is, which plays an important role in ensuring that students have full knowledge of the various health sector programs at Qatar University.

Do you have published scientific research to your name?

I haven’t yet published a paper but I am very motivated

to, because I was awarded by Dr. Michail Nominkos, an Undergraduate Research Experience Program (UREP) grant from Qatar foundation and we are currently working on a very important project that aims to unravel the “molecular and biochemical mechanisms of how pathogenic missense mutations in BRCA1 gene that have been identified in patients in MENA region alter the function of this important protein leading to breast and ovarian cancer.” Since there is an absence of a functional assay for the BRCA1 protein, our project’s main goal is to establish a multidisciplinary approach to distinguish pathogenic and non-pathogenic missense mutations and to classify novel or existing missense mutations with unknown clinical significance, to provide better care and genetic counseling for patients with predisposing genetic mutations of breast cancer.

The College is a driving force for innovation in Qatar’s healthcare sector. What are you trying to achieve?

I am aiming to be one of the innovators in future, because you need innovation to come up with new ideas and find solutions to challenging issues. For example, in medicine nowadays they are doing robotic surgeries, which is also known as robot-assisted surgery, it enables medical professionals to carry out a variety of complex treatments with greater control, precision, and flexibility than is possible with traditional methods. So being part of an innovation team is very important for me to ensure adequate patient care in the future.

What is your assessment of the availability of references in the Qatar University Library, especially with regards to health and medical specialties?

The resources provided for medical students in Qatar University’s library are very helpful. Many resources are provided that are really beneficial for us as medical students, because we base our knowledge on evidence-based medicine (EBM), which is in-turn based on recent studies that are done, as every day new treatments are being discovered for multiple diseases. Having access to websites such as UpToDate and PubMed is crucial for having better understanding of these treatments and not only this, these websites provide a summary of various diseases that aids in our learning process.

After obtaining your Bachelor of General Medicine, in which field of medical specialty will you complete graduate studies?

So far, I am interested in cardiology; therefore, if I get the opportunity, I would be going to complete my PhD in cardiovascular science during my residency.

Salwa, where do you see yourself 5 years from now?

Five years from now, I would look for chances to increase my expertise through training and educational programs to complement my profession. If the chance arises, I would be thrilled to take part in at least one initiative focused on cardiology or cardiothoracic surgery, since this is where I find my main interest so far. I am also aware that the HMC has a dedicated group of volunteers providing healthcare services to various countries that are in need for medical care, I would like to participate in this team.

Student Business Card:

Toka, how do you introduce yourself to the University community?

My name is Toka Mohamed. I am a graduate of Qatar University's PhD program in Business Administration with a specialization in Finance. I hold an MSc in Islamic Finance from Hamad Bin Khalifa University and a BSFS in International Economics from Georgetown University in Qatar.

What motivated you to choose finance as a specialization in your PhD program?

I have always been interested in finance, economics and business. In particular, I think Islamic finance and its moral, ethical and practical facets are quite captivating and very topical in the contemporary world, especially here in the Middle East. The PhD program at Qatar University allowed me to develop my research skills and delve into the topics I am passionate about, such as the role of financial institutions in improving social welfare.

Tell us about your main research accomplishments and any published research articles?

My research mainly focuses on the comparisons in performance between Islamic and conventional microfinance institutions, as well as the impact of microfinance on disadvantaged populations. Three research articles have been published out of my dissertation with Dr. Mohammed Elgammal, Section Head of Case Study and Community Engagement, College of Business and Economics. The first is titled "Credit Risk in Islamic Microfinance Institutions: The Role of Women, Groups, and Rural Borrowers" and is published in Emerging Markets Review. The title of the second published paper is "Are Donor Funds Used Effectively? An Examination of Islamic and Conventional Microfinance Institutions", and the third published in Applied Economics is titled, "Does the Extent of Branchless Banking Adoption Enhance the Social and Financial Performance of Microfinance Institutions?" I have presented my research in multiple international conferences. Currently I am working on completing a number of additional papers for publishing in relevant fields of interest.

How would you describe the Graduate Studies Community in Qatar University and what is your evaluation of the support it provides for students?



Toka Mohamed

**PhD in Business Administration
- Finance,**

**College of Business and
Economics - Qatar University**



جامعة قطر
QATAR UNIVERSITY

I had a very positive experience with the Graduate Studies Community at Qatar University. The Graduate Studies Office at QU regularly offers a wide range of educational opportunities that contribute to developing the research skills of students as well as learning opportunities extending beyond the scope of our major. My supervisor, professors, classmates and the Graduate Studies Office at the College of Business and Economics have also played a supportive role in my PhD experience and I am sincerely grateful to them all.

Based on your experience, what advice would you share with new graduate students?

Take advantage of the wealth of opportunities available on campus, reach out for help when you need it, choose a research topic you are passionate about, and try to make a positive impact through your work.

What was the topic of your PhD dissertation and what value does it add to you moving forward?

My dissertation focused on credit risk in Islamic and conventional microfinance institutions and examined a set of important factors that influence the quality of their credit portfolios as well as their social and financial performance, under the supervision of Dr. Mohammed Elgammal. I plan to continue developing my work in this field, as I believe in the important role of microfinance in enhancing the financial inclusion of economically disadvantaged communities.

Interview with HE Dr. Hamad bin Abdulaziz Al-Kuwari, About his book,

“The Debate over Conflicts and Settlements behind the Scenes of the Security Council: The Iraq-Iran War 1980-1988,” recently published by Qatar University Press. HE Dr. Hamad is **Minister of State, President of Qatar National Library.**



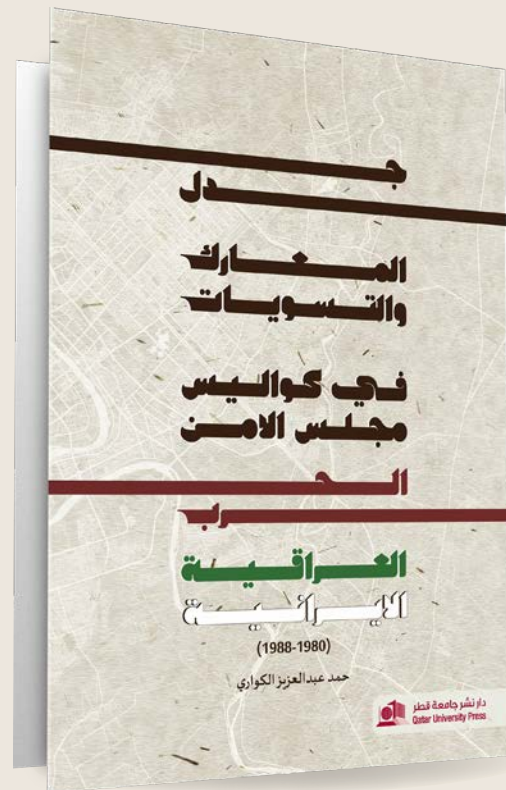
"In the history of countries and the world, wars are an important milestone that could constitute the start of new stages and the end of others. Like other regions, conflicts and wars arose in the Gulf region, forming an important element in shaping its history and future. In this context, the Iran-Iraq War, known as the eight-year war (1980-1988), broke out between two neighboring countries, brought together by both geographical proximity and a shared history of over 1400 years. The war constituted a watershed moment in the history of the Arab Levant region, including the Gulf region, as it completely reshaped the relationship between Iran and its Arab neighborhood." This was part of the abstract of Dr. Hamad's book, which this interesting dialogue is about.

Your Excellency Dr. Hamad Al-Kuwari, you need no introduction, but allow me to ask you how would you introduce yourself to the Qatar University community?

I am glad to have this opportunity to speak to the professors and students of Qatar University, despite not having been a student of this University, my association with this esteemed institution is of a devoted disciple, learning and growing with each visit. I hold in high regard the exalted position that Qatar University occupies among its peers worldwide, and the invaluable contributions it makes to the advancement of our nation. It is with great pride and appreciation that I commence any project within the distinguished halls of Qatar University, recognizing the vital roles it plays in shaping and enriching our National, Arab, Islamic, and Global heritage. I fondly recollect, and shall never forget, that my first lecture, after being nominated for UNESCO, was delivered at Qatar University.

Can you elaborate on the central theme of the book that originated from your doctoral dissertation on the Iran-Iraq War, also called the eight-year war?

This started in Damascus when I was an ambassador. What a difficult profession! It is a very arduous position that requires a wealth of knowledge of diplomacy and needs experience to deal with ambassadors and the country that you are assigned to work with. I was presented with two options: the first option, which may appear to be convenient and luxurious, entailed enjoying the benefits of my current position, including comfortable housing, servants, an excellent salary, social status, etc., without truly fulfilling its duties. However, I was well aware that this path would ultimately lead to failure, as I would not be equipped to handle the responsibilities required of me. The second option, while challenging, was a more viable one. It demanded from me to diligently prepare and train myself to undertake the tasks and responsibilities of my position. As such, I chose learning as a path. In Damascus, I made my first decision to pursue postgraduate studies. There, I obtained a Master's degree in Oriental and Arabic studies, and decided to pursue Doctorate. I thought that the doctoral dissertation must be related to my work, i.e. diplomacy, as long as I work in the diplomatic corps. I contacted several universities and settled on New York State University in Stony Brook, about 6 hours away



To learn more about the book, please visit the following link:

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QU Press website link:

<https://www.qu.edu.qa/qupress>



from where I live. They responded and understood my circumstances as an ambassador and a student at the same time. As a result, I started studying and completed all the required courses, and I came to the bottom line, which is choosing a topic for my doctoral dissertation. After conducting research and engaging in extensive deliberation with my supervisor, who was fully aware of my circumstances, we agreed to choose a topic related to my daily work at the United Nations. This would allow me to include my work diaries in my doctoral dissertation. At that time, the Iran-Iraq War was at its most intense and was the central concern of the Gulf countries, as it was between the two largest countries in the region and no one knew how it would end or where it would bring the region. I agreed with the supervisor to write my doctoral dissertation on the issue of decision-making in the Security Council, including a practical part that explores the Iran-Iraq War and the corresponding actions taken by the Security Council throughout the duration of the war, and that its title will be "**Security Council decision-making: A Case Study of the Iran-Iraq War.**" Thus, I combined my academic pursuits with my professional endeavors by creating a doctoral dissertation that fulfilled the necessary scientific, documentation, and reference criteria, while also serving as a chronicle of



A commemorative photo during the launch of the book "The Debate over Conflicts and Settlements..." at the Qatar University Book Fair, by HE Dr. Hamad bin Abdulaziz Al-Kuwari, with Prof. Mariam Al-Maadeed, Vice President for Research and Graduate Studies, and Prof. Fatma Al-Sowaidi, Director of Qatar University Press and Dr. Talal Al-Emadi, Dean of the College of Law.

my ongoing political work, which spanned a period of no less than four years. This is the tale of my doctoral journey, as well as how I arrived at the decision to tackle this particular topic.

Since your book starts as a doctoral dissertation, what do you say to QU postgraduate students about the importance of the scientific research methodology in developing a writer who produces high-quality content?

I was not a writer when I started preparing my doctoral dissertation; I was just a student and political practitioner through my position as an ambassador. In this regard, I recall that my teacher Dr. Jamal Badr, who was seventy years old at that time; taught me a lot and helped me to a great extent in the research process, because I was not well-organized in view of the daily responsibilities that I had to fulfill towards my government and my work at the United Nations, besides from being a member of several groups (the Arab Group, the Non-aligned Group, the Islamic Group) and other issues that the United Nations discusses through its six committees. My advice to young people is to link their dissertations as much as possible to the reality in which they live to obtain, in addition to the scientific value of the research, a practical aspect that reflects on their mission, whatever their specialization is.

Based on your journey with the book and experience, what is your opinion regarding the role of Security Council in solving disputes and promoting global peace?

Long before the present time, World War II produced several results, most notably the Security Council, whose charter and roles were determined by the victorious powers. Despite significant changes that have occurred in the world since then, the composition of the Security Council remains largely unchanged, with the five permanent members still representing the same victorious powers. Despite regional conflicts, economic and political shifts, this pattern persisted. In the light, my doctoral dissertation explored the recent proposal to review the composition and role of the Security Council in detail. I highly recommend reading the chapter on the

Security Council in my book, as it offers insights that are highly relevant to the present-day context.

If we asked you to choose chapters from your book that you advise students to read carefully, what would they be, and why?

I advise them to read the **consultations chapter**. When holding meetings, organizing conferences, or making decisions, what does not occur in announced meetings takes place in consultations. Consultations are very essential to reach specific wording, decision, etc. with respect to any issue, whether big or small, procedural or operational. I remember when I raised the subject of consultations with Dr. Jamal, I did not find an academic reference that I could rely on, because consultations were a recent phenomenon in the world of politics. Therefore, this chapter, despite being brief, is the first reference on consultations, their role and importance in the Security Council and in all meetings. It is based on real consultations, because I did not find references for it. Further, I recommend reading the chapter that sheds light in detail on **decision-making** in Iran and Iraq at that time. It is true that I dominated the academic side when I wrote it, because my political position as an ambassador for my country requires me to be extremely cautious and delicate in my approach. Hence, this puts on record the firm Qatari position, which found resonance and gained respect, namely, "the State of Qatar's endeavor to cease-fire and end the war," believing that there is no gain in war, everyone loses, Iraq loses, Iran loses, all Arab countries lose, the whole region loses, the whole world loses, the energy market loses, and so on.

The role of the State of Qatar in conflict resolutions is deeply rooted. How would you describe the position of Qatar regarding the cease-fire?

To illustrate Qatar's firm position on the cease-fire, I refer to this nice and meaningful story. In the days leading up to the critical resolution to end the war, the Secretary-General at the time, Javier de Cuellar, wanted to visit the region to hear the opinion of the leaders of the region on how to end the war that cost Iraq, Iran and the region dearly. I was an ambassador to the United

Nations, and I came to Doha to attend the meetings of the Secretary General with His Highness Sheikh Khalifa bin Hamad Al Thani, may Allah have mercy on him, the Amir of Qatar at that time. In this historic meeting, I remember that the late Sheikh Khalifa asked Javier de Cuellar, 'Where are you going. What countries will you visit?' He said, 'I would visit the Arab countries, the Kingdom of Saudi Arabia and the State of Qatar, after that I will consider the matter further.' Sheikh Khalifa said to him, 'why don't you visit Iran and Iraq?' He replied 'this is very difficult.' Sheikh Khalifa said to him, 'Your visit is of no value if you do not visit Iran and Iraq! The decision is in the hands of these two countries.' He replied, 'This requires arrangements to cease-fire while I am in Iraq and Iran and to get a Qatari plane.' After that, the cease-fire was concluded, and this visit was decisive in the cease-fire process.

Based on your research experience, what would you advise the younger generation of Qatar University students about the security and prosperity of the Gulf region?

With regards to research, I advise students to always be realistic and relate their work to their daily lives, society, economy, values, civilization, culture, literature, without being carried away with imagination. Imagination is beautiful, but only if it is linked to reality! My advice to students is to ensure that their research sheds light on and discusses problems and issues that are relevant to their society, region, and the world at large. It is important for their research to treat these issues thoroughly and provide meaningful contributions towards addressing them.

Noting that the second edition of your book was published by Qatar University Press, what do you think of the academic and societal role of Qatar University Press?

I am very happy with the liveliness, Qatar University Press is witnessing, I receive all its up-to-date publications, through its former director, currently Dean of Law College, Dr. Talal Abdullah Al-Emadi, and I read and follow what the media writes and says about it. I am very happy that Qatar University has a publisher with distinctive features of diversity, richness, and a high level of printing. I applaud this publisher, hoping that it will carry on playing this valuable role.

In terms of prospects for cooperation between Qatar National Library and Qatar University, what could be the common areas of such a cooperation between the two institutions?

We seek for the Qatar National Library to have a role for all Qatari institutions, especially with universities. Moreover, to talk about universities-with all due respect to all universities that are of a very high level-Qatar University comes at the forefront. For this, we need a brain storming session with the associate staff of Qatar University to discuss how Qatar National Library and Qatar University can serve knowledge, culture, and academic education through their cooperation. It was decided to hold a monthly Cultural Salon at the Qatar National Library, which will discuss each time on a specific topic in the

presence of the public. In parallel with this Salon, a special gallery will be dedicated for the academic and scientific elite and individuals with experience and knowledge. Therefore, we need a brainstorming session with the brothers and workers at Qatar University to explore how we can serve knowledge, culture, and academics through cooperation between Qatar University Library and us. Hence, we need to convene a brainstorming session with the esteemed colleagues and diligent staff of Qatar University to explore, identify and innovative ways in which we can collaborate with Qatar University Library to serve the cause of knowledge, culture, and academics.

Your Excellency, what would you like to say to the readers of this magazine at the local and international levels?

Qatar is living a prosperous era, as it was able to unveil other aspects of the FIFA 2022 World Cup, including its cultural role and its ability to create interaction between cultures through sports, even cultural diplomacy changed after the World Cup. It is true that the National Office bears a large part of the documentation task, but academic institutions, including Qatar University, must bear its responsibility as well. The mission of our nation towards the world did not end with the conclusion of the World Cup. Qatar boasts of cultural institutions that are unrivaled, such as the Cultural Village, museums, the Qatar National Library, Education City, Qatar University, and others. These cultural and scientific establishments should be invested in Qatar's cultural diplomacy to operate in a balanced line and to enhance our country's status, highlighting it as a bastion of success and innovation.



HE Dr. Hamad bin Abdulaziz Al-Kuwari is gifting copies of his book at the Qatar University Book Fair.

Environmental Science Center Holds International Conference on Sabkha in Qatar



HE Dr. Hassan bin Rashid Al Derham, President of Qatar University, toured the exhibition accompanying the First International Conference on Sabkha in Qatar.



Part of the attendance in the opening of the first International Conference on Sabkha in Qatar.

The Environmental Science Center at Qatar University (QU) held the International Conference on Sabkha in Qatar on 16-18 January, which was sponsored by Qatar National Research Fund (QNRF), ExxonMobil Qatar and Qatar Airways.

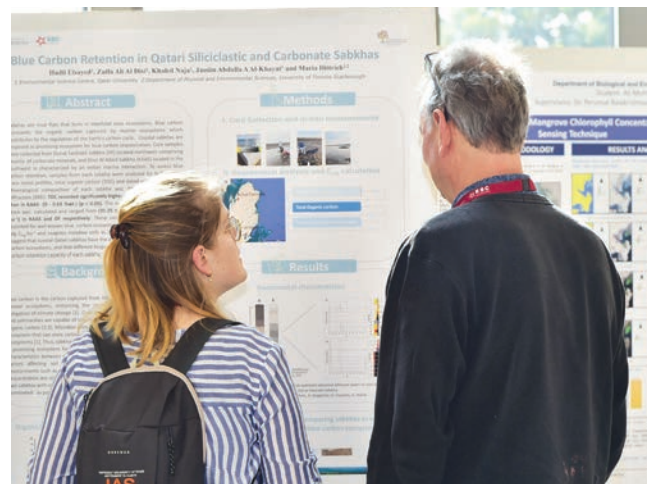
The conference provided an overview on the importance of sabkhas as a natural resource and the urgency of protecting and preserving them. The conference was attended by Dr. Hassan Al Derham, QU President, and gathered international scholars from the US, Europe, Australia, South America, and the Middle East to share the current state of knowledge on the topic and provide a historical background about the pioneering research on the sabkha sediments that started during the sixties of the last century when the first recent dolomite (calcium magnesium carbonate) in the Dohat Al-Faishakh Sabkha was discovered in the State of Qatar in 1961. The dolomite mineral acquires its importance as it represents the main oil and gas reservoir in the State of Qatar (the gaseous formation) and other GCC countries. Therefore, the discovery of the method of its formation represents an important breakthrough in understanding the way in which these hydrocarbon reservoirs were formed in the region during the ancient geological ages.

The conference was held for three days and offered different sessions that were dedicated to the physical and chemical characteristics of the sabkha ecosystem, and one session dealt with its biological components, including the microbial mats. Microbial dolomite was addressed since dolomite is a very important reservoir in Qatar (the Khuff Formation), forming the main reservoir of the supergiant north gas field of Qatar. In addition, sessions on other bio-minerals, such as clay minerals, and the use of the biological components in soil remediation and archaeological site preservation are held. As well as the study of “the sabkhas of Qatar as Terrestrial analogues for the search of life on Mars”

in its early stages of formation and other research related to the sabkhas.

The conference concluded with a round table discussion by researchers and key decision-making representatives, talking about the future of sabkha research and ways to develop the interdisciplinary nature of such research considering the importance of Qatar’s sabkha as the only remaining well-preserved site in the world. The conference also included a field trip to the main sabkha sites in Qatar, including the historic Khor Al-Adaid Sabkha.

Prof. Mariam Al-Ali Al-Maadeed, Vice President for Research and Graduate Studies at QU, praised the devoted efforts towards organizing the conference that combines the expertise of international scholars on sabkhas and encourages interdisciplinary research on this matter. Prof. Al-Maadeed added, “The organization of this conference reflects the commitment of Qatar University to study and protect the natural heritage of the country through innovative scientific research.”



Visiting researchers in the exhibition accompanying the conference.



Qatar University Organizes Orientation Day for Graduate Students of Spring 2023



On Saturday 28 January 2023, the Graduate Studies Office in the Research and Graduate Studies Sector held the Orientation Day for graduate students of spring 2023 aiming to introduce them to the distinguished academic journey of graduate studies. This event is considered among one of the important initial steps students take to begin their academic journey, which in turn enhances the students' ability to resume their academic and practical life in a proper way with steady steps. The session took place in Qatar University, Research Complex (H10) building, in the presence of Prof. Mariam Al-Maadeed, Vice President for Research and Graduate Studies.



Dr. Ahmad Al-Own, Dean of Graduate Studies, during the introductory meeting for postgraduate students, Spring 2023.

The academic admission to Spring 2023 semester was available for several programs including masters and PhD programs in the College of Engineering, some programs in the College of Arts and Sciences, PhD programs in the Health Cluster Colleges, and PhD programs in the College of Sharia and Islamic Studies. Approximately 200 students along with college representatives of Qatar University have attended this event. The Orientation Day began with a welcoming speech by Dr. Ahmad Al Own, Dean of Graduate Studies, in which he discussed the graduate studies and what distinguishes it from undergraduate studies. In addition, Dr. Al Own gave an overview of the Graduate Studies Office and the services provided to students. He also mentioned some useful activities and websites that in turn facilitate the learning process for students. Concluding his speech, Dr. Ahmad Al Own shed light on research grants and its importance to graduate students, and emphasized upon diligence and hard work.

Ms. Ghada Al-Kuwari, Assistant Dean of Graduate Studies for Student Affairs in the Graduate Studies Office, explained thoroughly some important policies for graduate students, as well as important dates that should be taken into consideration for spring 2023 semester such as the deadlines of the add/drop period and withdrawal period from course or semester and the submission of postponement of admission.

The session also included a talk given by Dr. Mary Newsome, Assistant Dean of Graduate Learning Support, where she clarified the services provided by the Graduate Learning Support including thesis-writing workshops. Additionally, she also gave her inputs on some events such as tad Bootcamp for thesis-writing training along with tad's effective discussions which shares the diverse experiences of graduate students, and other group workshops and individual support sessions.

Furthermore, Qatar University Library participated in this event; Mr Abdul Hakim Bishawi, Acting Head of Research and Instruction Department (information

awareness), gave a brief overview on the usage of electronic library resources to support students in research by providing research articles and theses as references with the possibility of searching for them in both Arabic and English.

Two graduate students were invited to attend the orientation session; Ms. Amna Al Sayed, Masters student at the College of Engineering, and Muneera Al Kubaisi, PhD student in Gulf Studies at the College of Arts and Science, who were accepted in the Fall 2022 semester. They shared their anecdotes and experiences in the first semester with their colleagues during the orientation session. Moreover, they explained what obstacles might be faced during this semester, how to overcome them, and who to approach to receive support and assistance. Additionally, they provided advices that aid in success and tips to enjoy this challenging experience. Last, the Dean and Assistant Deans of Graduates Studies office gave an open panel discussion to answer students' questions and inquiries and by which the event was concluded. Please visit the [Graduate Learning Support \(GLS\)](#).

It is worth mentioning that Qatar University supports the exceptional Graduate Program and has several interconnections with the industry and the local community. It also offers a variety of internal research grants for students to contribute to nationally prioritized objectives while graduate students own significant parts of these grants such as student scholarships and postgraduate scholarships. <http://www.qu.edu.qa/ar/research/research-resources/grants-and-funding>

Qatar University always seeks to instill a spirit of competitiveness and distinction among its students. In this context, graduate students are encouraged to excel in research in order to enhance scientific publications in which the University offers various awards for distinctive studies in Masters and PhD degrees such as the distinctive postgraduate research award. <http://www.qu.edu.qa/research/graduate-studies/research-distinguishing-standards-for-graduate-students>



Graduate Studies Office Hosts tadTalks 2023



The Graduate Studies Office at Qatar University (QU) organized its fifth annual tadTalks 2023 on Wednesday 17 May 2023 in the presence of a number of VIPs, Ambassadors, members of diplomatic bodies and interested parties from various fields.



Research presentations for graduate students participating in the tadTalks 2023.

tadTalks provides a unique platform to showcase impactful graduate research that addresses global challenges and brings graduate researchers together from around the world to coalesce in a spirit of inquiry.

This year, the event included various sessions and panel discussions on the most important challenges facing the world today, in addition to proposing appropriate solutions presented by invited guests, as well as open discussions presented by graduate researchers from Qatar University, Doha Institute for Graduate Studies, Hamad Bin Khalifa University, Texas A&M University at Qatar, and researchers from Argentina, Canada, Brazil, Morocco, Palestine, and Ghana. This year's event was made more unique through its "Junior tadTalks," featuring promising researchers from Qatar University.

The keynote address was delivered by the Director of Development, Arab Youth Climate Movement Qatar, Hessa Al Noaimi, who spoke about her journey in research, innovation and education, furthermore to touching on the Arab Youth Climate Movement and the story of its establishment. The Arab Youth Climate Movement focuses on environmental awareness,

climate policy and in bringing more people into the environmental movement.

tadTalks engrossed the Council for Graduate School (CGS), USA, to participate in the event. It was presented by Professor Suzanne Ortega, President of the Council and Heidi Shank, Senior Director of Meetings at the Council. CGS is the only national organization in the United States that is dedicated solely to the advancement of graduate education and research.

The tadTalks program was first initiated in 2019 as part of Qatar University's commitment to building a strong sense of graduate community, enhancing the graduate experience and supporting graduate research. Universities from countries all over the world have participated in this unique international graduate event and it contributed to encouraging current and prospective students to target impactful research and ensuring that international perspectives on graduate research are considered, in addition to, addressing the challenges and needs faced by graduate students to inform decision-makers in higher education, and Qatar University's keenness to build a strong graduate community.



A memorative photo of the organizers of the tadTalks from the Office of Graduate Studies, and the students participating in the event.

QU Young Scientists Center Concludes the Fifth Youth Research Forum 2023



HE Dr. Hassan bin Rashid Al Derham, President of Qatar University and HE Buthaina bint Ali Al Jabr Al Nuaimi, Minister of Education and Higher Education, honoring the winning students of the Fifth Youth Research Forum 2023.

Qatar's National Vision is to achieve a sustainable, diversified, and knowledge-based economy, with the aim of addressing challenges. The Vision aims for human development and stipulates the establishment of an infrastructure and an educational system comparable to the highest educational systems in the world, to prepare students as innovators and to take the initiative, which will lead to having a greater role in all sectors of the country's economy in the future. Therefore, the Qatar University Young Scientists center seeks to provide opportunities to develop scientific research skills for young researchers from the State of Qatar and all over the world to enrich their careers and put them at the beginning of the path of research creativity. Therefore, the center organized the Fifth Youth Research Forum 2023. This forum aims to develop a culture of scientific research among young people and confirm their role in leading change and creating opportunities for development and progress through scientific research and innovation. This will be achieved by linking research to the needs of society, and emphasizing the synergy of science and the integration of human knowledge in order to increase the ability of societies to sustain development opportunities.

On the 8th and 9th of March 2023, many researchers from several countries presented their research contributions in the form of research papers and scientific posters at the Fifth Youth Research Forum 2023 to be evaluated by an evaluation committee specialized in various fields from Qatar University and the Ministry of Education and Higher Education. It is worth noting that the center has started receiving research abstracts since June 2022, and it has received approximately 280 abstracts. Only 186 were accepted, and 36 were nominated to be presented at the forum from 16 different countries. This cycle of the Youth Research Forum is distinguished by the diversity of research to expand the areas of participation.



The jury of research posts in the Fifth Youth Research Forum 2023.

The themes were as follows:

- The quality of higher education as one of the sustainable development goals and a way to consolidate its concepts.
- The theme of legal legislation aimed at consolidating the concepts of sustainable development and achieving its goals.
- The scientific research theme as a means to consolidate concepts and achieve the sustainable development goals.

Prof. Mariam Al-Maadeed, Vice President for Research and Graduate Studies, stated, “Higher education institutions have the most important and largest role in leading development and the movement of scientific research and development, being the highest educational institutions with capabilities and resources from strong infrastructure, researchers and experts in various fields. Qatar University is keen to support all initiatives that contribute effectively to achieving strategies that put Qatar at the forefront of countries in many aspects.” She added, “The Youth Research Forum highlights Qatar University as a pioneer in the field of research and encourages young people to keep pace with world trends in research, and to create effective solutions to major challenges.”

Prof. Noora Al-Thani, Director of Qatar University Young Scientists Center, said, “The Center always seeks to provide opportunities and support students from all over the world to share their research and findings with experts and researchers at Qatar University. This is of great benefit to them as it provides them with experience, develops their skills, and expands creativity.” She added, “Through the forum, we aim to encourage young people to research, innovate and compete with each other. I am always proud of our students access to local and international platforms

and their participation in many research and innovation conferences and exhibitions. I hope that students will continue to achieve excellence and success in their scientific and practical career.” Finally, she thanked Qatar National Commission for Education, Culture and Science, the partner and supporter of the Fifth Youth Research Forum and all other sponsors.

Dr. Hassan Al-Derham, President of Qatar University, honored first place winners for best poster. They are a group from the QU College of Dental Medicine, who were awarded for their research named ‘Association between Oral Health and Gastric Cancer: A Systematic Review.’ The winner for second place for best poster was awarded to a group from the QU College of Engineering, and College of Education, for their research entitled ‘Assessment Models used in Informal STEM Learning.’ In third place for best poster was Maria Nazir, from the Department of Electrical Engineering, Institute of Space Technology (IST) Islamabad, Pakistan for her research ‘Brain Tumor Analysis of Gliomas with Uncertainty Estimation in MRI Images.’

The winner for best research was awarded to Tasneem El-Sayed from Suez Canal University, Egypt, and her research ‘Design, Synthesis and Molecular Modeling of Quinazoline Derivatives as a Dual Kinase Inhibitors Targeting EGFR and VEGFR-2.’ Second place winner for best research was Zahra Al-Mahrooqi, College of Science, Sultan Qaboos University, Muscat, Oman, for her research ‘Effects of Microplastic on the Intestinal and Liver Tissues and Gut Microbiome in Rats.’ In third place for best research was Elyas Al-Subhi, Omar Al-Salmi and Aahid Al-Hadrami from the Mechanical and Industrial Engineering Department, Sultan Qaboos University, Muscat, Oman, for the research entitled ‘Innovative Approach for Recovering Waste Heat of Vehicle Exhaust Gases into Power for Cooling Applications.’

QU Hosts First International Biomaterials Conference Titled “Biomaterial, Biosensor and Microfluidics Technologies for Medical Applications”



A picture of researchers participating in the first International Conference on Biological Materials in the State of Qatar.

Qatar University's (QU) Biomedical Research Center (BRC) conducted the First International Biomaterials Conference in Qatar, titled “Biomaterial, Biosensor and Microfluidics Technologies for Medical Applications.” The event lasted for two days on 6 and 7 May 2023 at Qatar University's Research Complex.

Biomaterials is a very popular research area that covers variety of topics such as tissue engineering, implants, nano-medicine, biosensors, and lab-on-a-chip/organ-on-a-chip applications. The conference was funded through Conference and Workshop Sponsorship (CWSP) program from Qatar National Research Fund (QNRF) under Qatar Research Development and Innovation (QRDI) Council. In addition, to the generous support from Qatar University. The event was organized in collaboration with Qatar University's scientific journal, Emergent Materials published by Springer, in which the conference was accredited for health professionals under Continuous Professional Development (CPD) - QU Health with 13 credit hours.

The objective of this conference was to enhance biomaterial research and entrepreneurship in critically important areas by bringing world-class academicians, scientists, and clinicians to the

nation to present their cutting-edge biomaterials research. The event successfully drew many attendees among Qatar University students, researchers, and faculty as well as other education and research institutions in the nation such as Hamad bin Khalifa University and Texas A&M in Qatar. In addition, several healthcare professionals from Hamad Medical Corporation and Sidra Medicine also attended the event. There were 34 presentations from local institutions as well as from prestigious international institutions from the US, Germany, UK, UAE, Turkey, Thailand, India, Egypt, North Macedonia, and Iran.

Prof. Mariam Al Maadeed, Qatar University Vice President for Research and Graduate Studies, and the co-chief editor for Qatar University's Emergent Material Journal, announced that a special Biomaterials Issue is planned for conference lectures and high quality Biomaterials papers to the journal are always welcomed.

Please find more information about the conference on the link below:

<https://www.qu.edu.qa/conference/biomaterial-conference>

Qatar University's scientific journal Emergent Materials can be accessed from the link below:

<https://www.springer.com/journal/42247>

QU Participates in Qatar International Agriculture Exhibition 2023



Part of the participation of the Agricultural Research Station at Qatar University in the Qatar International Agricultural Exhibition 2023.



Qatar University Pavilion at the Qatar International Agricultural Exhibition 2023.

Qatar University participated in a pavilion at the Qatar International Agricultural Exhibition 2023 held at Doha Exhibition and Convention Center from the 15th to 19th of March. The number of companies that took part in this exhibition was 675, from 55 countries. Qatar University's participation aimed to shed light on its efforts of providing innovations that contribute to food and water security in the State of Qatar. The Pavilion of the University included the participation of the Agriculture Research Station (ARS), Central Laboratories Unit (CLU), Environmental Science Center (ESC) and Social and Economic Survey Research Institute (SESRI) from the Research and Graduate Studies Sector, and the Biological and Environmental Sciences Department at the College of Arts and Sciences and Social and Economic Survey Research Institute (SESRI) in order to present the most significant achievements, research and, solutions, which serve the agriculture research sector and sustainable development.

The Agriculture Research Station presented its most significant contributions and projects for promoting food security and sustainability. The Station also presented to the visitors some of its products such as Sidr honey and the "blue tea." It is worth mentioning that the Station works on creating and developing innovative agricultural techniques in order to provide the optimal ways of using available natural resources and to face the challenges of dry-land farming which includes advanced irrigation systems, application of integrated agricultural pest management, and plant disease control. Moreover, it aims to develop and innovate organic sustainable farming such as crop rotation, and apply sustainable organic fertilizers on farms to increase and preserve agricultural soil fertility. The Biological and Environmental Sciences Department

explained and presented the QU Herbarium, the oldest herbarium in the State of Qatar, which contains 3200 plant samples. The department aspires to bring in and use modern biotechnology in research that serves agriculture in the State of Qatar. It also focuses on studying the genetic factors responsible for the genetic biodiversity in Qatar's original plants, in addition to studying their adaptation to the Qatari environment. These studies are very useful in the fields of agricultural sustainability and food security in the State of Qatar. Furthermore, the department aims to establish a seed bank specialized in the original Qatari plants and deposit their DNA fingerprinting to preserve and document them internationally as well as use them for agricultural sustainability and food security.

Social and Economic Survey Research Institute (SESRI) participated in presenting the results of the research study—cost estimation, productivity and net return for agricultural production, for plant and livestock agriculture sector. The results were presented by issuing the book of the executive report of the study; the participation also included the presentation of the agricultural census statistics book in Qatar 2021, and a lecture at the conference accompanying the exhibition on the most important results of the agricultural census and the study of costs and productivity.

At the pavilion, QU displayed projects of the students in the agricultural and environmental field. Some of the projects presented included the use of gelatinous material to support food security project, a robot for preserving the landscape project, artificial coral reefs project, the future development by cultivating alga project, a smoke-proof tube project and a project to prolong fruit life. In addition to that, some models of the partnerships between QU and the Ministry of Municipality were presented.

QU Organizes International Day of Girls and Women in Science 2023 under the Theme “Success Stories towards Society 5.0”



Qatar University in cooperation with UNESCO Office in Doha and the Qatar National Commission for Education, Sciences and Culture, organized an event celebrating the International Day of Women and Girls in Science 2023 on Sunday 12th of February 2023.

The theme of the event revolved around the “Success Stories towards Society 5.0” celebrating the achievements and recognizing the critical role that women and girls play in science, technology, engineering and mathematics (STEM). It also encouraged an interest in women and girls to participate in scientific disciplines. It promoted attention to the career opportunities and to advance gender equality and the empowerment of women and girls.



From left: Iman Al Obaidi, Head of Public Relations and Social Media, Qatar Scientific Club, Dr. Saeed Hashem Al Meer, Director of Research Support (Grants and Contracts) (QU), Prof. Bassim Hammadi, Director of Research Planning and Development Department (QU), Mr. Ali Marafi, Secretary General of Qatar National Commission for Education, Culture and Science, Prof. Mariam Al-Maadeed, Vice President for Research & Graduate Studies (QU), Mr. Salah Khaled, Director of UNESCO Doha Office for Gulf States and Yemen, Ms. Hayfa Al-Abdulla, Innovation Director at QSTP, Dr. Noora Fetais, Associate Professor of Computer Science, College of Engineering (QU).

The event started with a welcoming speech by Prof. Mariam Al-Maadeed, Vice President for Research and Graduate Studies, in which she stated that, “this event brings together the strategies to empower women in the State of Qatar’s digital transformation, which has made great strides in this field and has become one of the world’s most advanced countries in digitization and the use of modern technology. Qatar University, seeks to integrate its members and students into digital programs and activities, as well as provide them with knowledge and technological skills capable of meeting society’s requirements and facing its challenges, through a variety of initiatives. We concentrate on youth in particular, as the Qatar University Young Scientists Center plays an important role in this regard.”

Mr. Ali Marafi, Acting Secretary-General of the Qatar National Commission for Education, Culture and Science added, “the State of Qatar devotes significant attention and support to improving the status of Qatari women and girls in science and scientific research, as well as consolidating the foundations of constructive scientific thinking, through the provision of numerous specialized scientific programs and grants to study the most recent technological developments and to stand on the best scientific developments, in addition to awarding prizes; to highlight female students’ research projects, to organize and host many leading international conferences, forums, and initiatives aimed at spreading scientific culture among girls, and to send many Qatari female students to study scientific disciplines at the world’s most prestigious universities at the state’s expense.”

The event included a panel discussion titled “Success Stories towards Society 5.0,” which was moderated by

Mr. Chaker Ayadi, Lecturer of Mass Communication, College of Arts and Sciences, Qatar University, with the participation of Mr. Salah Khaled, the Director of the UNESCO Regional Office in Doha and UNESCO Representative in the Arab States of the Gulf and Yemen, Dr. Noora Fetais, Associate Professor of Computer Science, College of Engineering–Qatar University, Iman Al Obaidi, Head of Public Relations and Social Media–Qatar Scientific Club (QSC) and Hessa Al-Kuwari, student from College of Engineering–Qatar University, representing Qatar University Young Scientist Center (QUYSC).

Mr. Salah Khaled highlighted that harnessing all talent possible is crucial for achieving some of the greatest challenges of the 2030 Agenda for Sustainable Development, from improving health to combating climate change. Diversity in research expands the pool of talents, brings in fresh perspectives and more creativity. “This Day is a reminder that the participation of women and girls in sciences should be strengthened,” he said.

By the end of the event, a group of students were honored for their win in the “December Al-Adaam” competition and a tour was held of the Scientific Photo Gallery in partnership with Qatar University Young Scientist Center (QUYSC).

Since 2015, the International Day of Women and Girls in Science has aimed at raising awareness on the issue and recognizing the role that women and girls play in science and technology communities and that their participation should be strengthened as drivers to address major global challenges and achieve all the sustainable development goals and targets of the 2030 Agenda.

Defining and Enhancing Private Sectors: The Role of Qatar University in World Sustainable Development Report 2023



A picture of experts, specialists and academics from the participating parties in the proceedings of the regional conference for the Arab region for the World Sustainable Development Report 2023.

The United Nations Regional Conference for the Arab Region Global Sustainable Development Report 2023 was held on January 24-25, 2023. This conference was organized by the United Nations (UN) and the German Agency for International Cooperation (GIZ), in collaboration with Qatar University, represented by the Social and Economic Survey Research Institute (SESRI).

UN drafted a sustainable development plan intended to be achieved by 2030, which includes 17 goals aiming at guiding countries towards more prosperous, equitable, and environmentally cautious societies. In order to monitor the evolution of achieving these goals, progress reports are projected to be released every four years.

This year, UN selected an independent group of scientists and experts to write the report. The group was led by Professor Kaltham Al-Ghanim, Director of SESRI, whose main role focused on defining and enhancing the private sector's contribution to sustainable development. Despite the increasing potential of the private sector to achieve the sustainable development goals, its contribution to sustainable development in the Middle East and Gulf region is yet to be well determined, understood and documented.

With the objective of attaining a holistic outlook of the progress, challenges and recommendations related to accomplishing the sustainable development goals, the conference's agenda focused on consulting

specialists from the Arab region with expertise in energy, quality of life, food security, economic diversity, circular economy, communications, youth empowerment, and other sectors of relevance to sustainable development goals. UN identified three main topics that are considered to be of utmost importance in the Arab world. These topics are 1) quality of life and human development, 2) effective management of shared resources, and 3) the provision and easy accessibility of renewable energy. To explore these topics, the conference was attended by a number of experts and academic stakeholders, including local and regional private sector representatives, to exchange knowledge, ideas, experiences, and expectations towards the creation of more sustainable communities. The conference shed light on various sustainable development topics and successful models of sustainable economic development led by the private sector in the Arab region, in addition to suggesting methods to incorporate the best practices developed in other parts of the world.

Qatar University, represented by SESRI, played an important role in highlighting the role of the private sector in driving sustainable development in the Middle East. The outcomes of the meaningful discussions and fruitful workshop sessions of the conference will be presented in the Sustainable Development Report 2023, which is anticipated to be released in September 2023.

SESRI Hosts Two-day International Workshop on Sustainability and Quality of Urban Life in Qatar and the Gulf Region

The Social and Economic Survey Research Institute (SESRI) in Qatar University hosted a two-day international “Workshop on Sustainability and Quality of Urban Life in Qatar” on 28-29 May 2023. The workshop was co-sponsored by Qatar National Research Foundation (QNRF).

The two-day deliberations included five panel sessions and three concurrent working group sessions with over 20 distinguished panellists across the world from multidisciplinary subject background including urban studies, psychology, social sciences, engineering, sustainable development, health and methodological sciences. Over 75 researchers, including young researchers and policy stakeholders participated in the workshop. His Excellency Dr. Abdallah bin Abdulaziz Al Subaiey, the Minister of Municipality delivered keynote address and the Honourable President of Qatar University HE Dr. Hassan Al Derham delivered the inaugural address.

The workshop provided an exciting opportunity for academia, researchers, policy makers and stakeholders to deliberate and develop globally comparable and quantifiable methods and metrics on the dimensions of sustainability, behavioural urbanism, quality of urban life and human wellbeing that are unique to Qatar and the Gulf region.

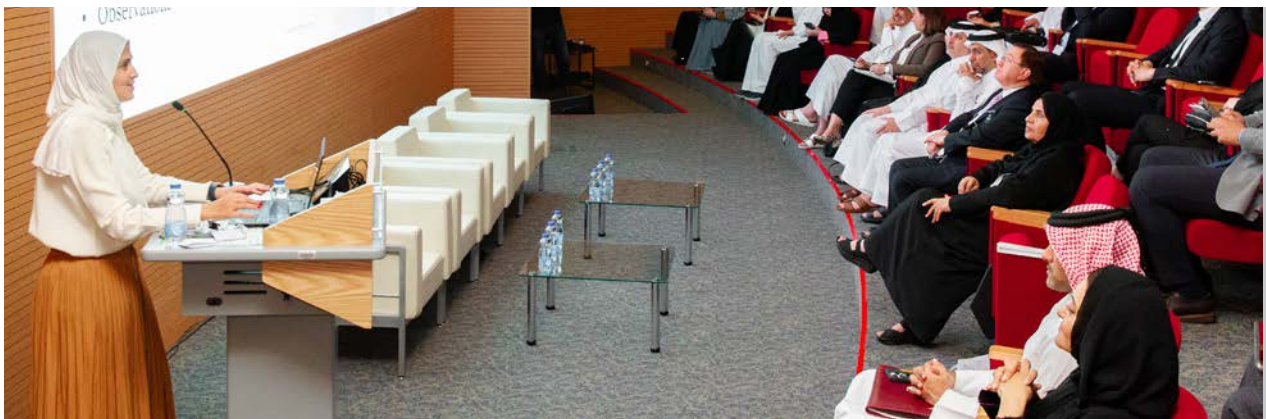
The two main aims of the workshop were: a) To develop a methodological framework for a multidimensional



Speech of HE Dr. Abdullah bin Abdulaziz Al-Subaiey, Minister of Municipality, at the opening of the workshop.

construct of UQoL and human well-being, which is important for evaluating the efficiency of the urban development policies and their impact on people. b) To establish a ‘researchers-policy stakeholders’ collaboration’ to continuously work on innovative methods and metrics involving partnership in Qatar, the Gulf countries, and international experts.

The workshop delegates agreed to work together with SESRI Urban Development Research team on several actionable areas including a) develop model tools and metrics, b) implement a national study on sustainability and quality of urban life in Qatar and c) work on public policy driven Dashboard of Indicators across the four key domains of urban quality of life.



HE Sheikha Dr. Hessa Al-Thani, Dean of College of Education, Qatar University, during her introduction of the first discussion session in the workshop.

Qatar University's Center for
Advanced Materials Hosts Its First
Open Day under the Theme

“Connecting Innovative Minds”



A tour of HE Dr. Hassan bin Rashid Al-Derham, President of Qatar University, and invited guests, at the Open Day event of the Center for Advanced Materials (CAM).

Qatar University's Center for Advanced Materials (CAM) hosted the CAM Open Day 2023 on Monday, 22 May 2023. This event aims to strengthen academic collaborations and partnerships with industry, government and academic businesses, in line with the organization's strategies. The event witnessed the attendance of Dr. Hassan Al-Derham, QU President, Prof. Mariam Al Maadeed, Vice President for Research and Graduate Studies, alongside a number of CEOs of industrial institutions, government members, directors of research centers, educational institutions, academics and interested students attended.

The Open Day brought together experts from various disciplines to promote dialogue and exchange of ideas, as well as to identify and address prospects for future interdisciplinary collaborations. One of the key highlights of the event was the panel discussion on "Key to Successful Industry-Academia-Government Partnerships," where experts from academia, industry and government shared their insights and experiences on the topic. The participants shared their experiences on significant trends and shifts in the industry, challenges and opportunities for academia, and the role of industry in supporting and collaborating with academic institutions and researchers. The discussion also mentioned how academia and industry can better collaborate to drive innovation. The panelists provided advice to those starting anew in the industry and discussed what they wished they knew earlier in their careers.

The program included a tour of the Center for Advanced Materials to explore the facilities and learn about the patents and CAM Innovation, in addition, to a special tour of the Water Technology Unit (WTU),



Part of the CAM activities in the open day.

which is instrumental in measuring the quality of drinking water in Qatar. It is expected to become a center for meeting the needs of industry and the local community.

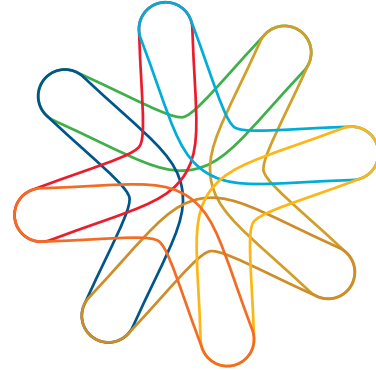
It is worth mentioning, that the Open Day event comes within the context of the marketing campaign for the research centers in Qatar University that are supervised by the Research and Graduate Studies Office. The commencement of the campaign started with the Center for Advanced Materials, which is a center for conducting research in materials science, and covers major research areas including Nanotechnology, Sustainable Materials, Polymers, Composite Materials, Corrosion Studies, Metallurgy, Renewable Energy Methods and others.



A memorial photo of the dignitaries invited to the CAM Open Day event.

ANDD Holds Its Third Annual Meeting on QU Campus under the Theme

“Success Stories in Incorporating SDGs in Education, Research, and Practice”



ANDD



One of the discussion sessions at the third annual meeting of the Academic Network for Development Dialogue, which brought together a group of speakers from inside and outside the State of Qatar.

The Third Meeting of the Academic Network for Development Dialogue (ANDD) organized by Qatar University in collaboration with the United Nations Economic and Social Commission for Western Asia (ESCWA) and Al-Quds University was concluded on 18 May 2023. The meeting came under the umbrella of the ANDD initiatives, and it aimed at discussing and encouraging topics/trends, and fresh perspectives on regional organizations and policy concerns from an academic point of view, as well as highlighting the gaps in regional strategies for achieving sustainable development goals.



From left: Dr. Amer bin Saif Al-Hinai, Vice President for Postgraduate Studies and Scientific Research at Sultan Qaboos University in the Sultanate of Oman, Dr. Mohammad Zaid Al-Otaibi, President of the Kuwaiti Association for Graduate Studies, Mr. Khalifa bin Jassim Al-Kuwari, Director General of the Qatar Fund for Development, Dr. Salim Al-Malik, Director of the Islamic World Educational, Scientific and Cultural Organization (ICESCO), Prof. Mariam Al-Maadeed, Vice President of the University Qatar for Research and Graduate Studies, Dr. Ahmed bin Hamad Al Hassan Al-Mohannadi, member of the Qatari Shura Council, Dr. Ibrahim Ibrahim, Vice-Chairman of the Board of Trustees of the Al-Attiyah Foundation, and Mr. Fahad bin Hamad Al-Mohannadi, member of the Board of Trustees of the Al-Attiyah Foundation.

The meeting was held under the title “Success Stories in Incorporating SDGs in Education, Research, and Practice.” Through this meeting, in its third edition, the ANDD seeks to involve different categories of researchers, students, United Nations staff, and the relevant parties to discuss various aspects of the research topics. Discussion is considered an effective tool for addressing issues and topics from various perspectives, opening a rich field for the exchange of ideas, visions, and solutions, particularly with regard to selected topics that were built in accordance with regional challenges and programs of the United Nations system, which leads to influencing decision-making in addition to supporting academic research production.

The meeting witnessed many speeches, official gatherings and panel discussions with the participation of a group of speakers from the State of Qatar and abroad, who dealt with various topics included in the conference agenda such as education, research, practice, and its connection to the sustainable development goals. In addition, the role of the private sector in implementing the sustainable development goals, as well as how the governmental and non-governmental organizations serve these goals also came under discussion.

By the end of the meeting, stories from reality have been reviewed, and a summary of the first edition of the ANDD paper series was presented, as well as the

announcement of the paper series’ second edition.

It is noteworthy that the Academic Network for Development Dialogue (ANDD), which was launched in 2020 with the support of the Academic Council of the United Nations (ACUNS) currently includes 36 members from universities and educational institutions from around the Arab region and the globe, including Qatar University and the United Nations Economic and Social Commission for Western Asia (ESCWA) with the support of the Academic Council of the United Nations (ACUNS).

The ANDD focuses on creating an intellectual sharing process with the aim of bridging the knowledge gap and devoting academic expertise and scientific results to support progress towards sustainable development at the national and regional levels in the Arab world.



A commemorative photo of the participants and attendees at the third annual meeting of the Academic Network for Development Dialogue (ANDD).

Qatar University to Embrace Introductory Seminar of “ARID” Scientific Platform

On February 7, 2023, the Research and Graduate Studies Sector at Qatar University (QU) organized an Introductory Seminar with the ARID (Arabic Researcher ID) Platform for Arabic-speaking scientists, experts, and researchers. ARID is considered first international scientific platform for researchers that was established by several researchers and experts interested in developing the capabilities, potentials, and capacities of scientific research to achieve multifaceted scientific goals.

Prof. Mariam Al-Maadeed, Vice President for Research and Graduate Studies at QU attended this cultural gathering and referred to the University's research attribute in implementing sustainable development projects, and providing the requirements of research and innovations to enhance the community's development, in addition to proclaiming the significance of ARID and the sustainability of its scientific and research programs as a platform for Arab researchers. Sixty members from ARID attended the gathering along with several faculty members from QU and a number of researchers from different institutions in Qatar, Sultanate of Oman, Kuwait, and the Association of Arab Universities. The gathering aimed at presenting the significance of the scientific and research programs of ARID which satisfies QU's goals and vision

The Program of the Introductory Seminar included a discussion titled “Creating Scientific Identity for Scientists, Experts, and Researchers via Digital Platforms.” In this session, Dr. Saif Youssef Alsewaidi, the Founder and CEO of the ARID Scientific Platform, presented part of the platform including its scientific and research program, statistics about its achievements, and the proportion of its Arab members.

Dr. Muna Ahmed Al-Shawi, Assistant Professor of English Language, Ministry of Education and Higher Education emphasized on the significance of using a proper language in writing scientific research. Dr. Muna also highlighted the importance of proofreading which reflects the quality and solemnity of the research papers published in the ARID International Journals such as ARID International Journal for Science and Technology, ARID International Journal for



Dr. Saif Youssef Alsewaidi, the Founder and CEO of the ARID Scientific Platform, during his presentation.

Social Sciences and Humanities, ARID International Journal of Media Studies and Communication Sciences, ARID International Journal of Educational and Psychological Sciences and ARID International Journal of Informatics and Scholarly Communication.

Dr. Yahya Mohammed Al-Mahdi, Lecturer of Arabic Language at QU, College of Arts and Sciences, discussed the role of the researchers in the platform and scientific journals, praising the provided services and instruments, which harmonize with the international orientations in scientific research. He asserted the necessity of the integration between the peer-reviewed scientific journals and the research priorities at the University aiming to increase the research production by the Qatar University's members on a wider scale and in a record time to benefit both sides in the prestigious global rankings. The session was led by Professor Dr. Salwan Kamal Al-Ani, an international expert in the State of Qatar and a member of the ARID General Secretariat where he illustrated ARID International Journal for Sciences and Technology, as a template of ARID Journals since its launch in 2018. He discussed about the publication grounds and advantages, the organizational structure of the Journal, the scientific advisory committee, and the board of editing which consists of members among the most cited researchers worldwide. Dr Salwan indicated that the Journal has been approved within the database of Peer-Reviewed Journals in the QU Library.