

KNOWLEDGE SOCIETY



Issue - 14

Periodical Newsletter

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Issued by the Vice Deanship of Research Chairs

Signing the Agreement of Arab National Bank **Chair for Ophthalmic Diseases»**



Dr. Yazid Al-Sheikh, University Vice President for Graduate Studies and Scientific Research, signed at the university headquarters the agreement to support the Arab National Bank Chair for Ophthalmic Research, in the presence of Mr. Khalid Al-Rashed, CEO of the Retail Banking Group at Arab National Bank, along with the Dean of Scientific Research and the Vice Dean of Scientific Research for Research Chairs.

Joint study by COMSATS University and Princess Nourah University explores a novel voice classification approach using the (AVPD) database

In a scientific achievement highlighting the importance of international collaboration in advancing medical research, a joint research team from COMSATS University in Pakistan and Princess Nourah University in Saudi Arabia published an advanced study in voice disorders field. The study utilized the Arabic version of the Arab Voice Pathology Database (AVPD), established by the Voice, Swallowing, and Speech Disorders Research. demonstrating that the Transfer Learning model significantly outperformed other models, achieving the highest classification accuracy.

The Secretary-General of « Mawhiba» Foundation Visits the Electrochemical **Science Research Chair**



Mr. Abdulaziz Al-Kuraidis, Secretary-General of the King Abdulaziz and His Companions Foundation for Giftedness and Creativity "Mawhiba," visited the Electrochemical Science Research Chair at the College of Science, where he was briefed on the progress of scientific research activities of the Chair in the fields of energy and green hydrogen.

The visit included a meeting with a number of researchers and students participating in research projects, during which Mr. Al-Kuraidis praised the Chair's efforts in supporting innovation and advancing scientific research in strategic areas aligned with sustainability and the goals of Saudi Vision 2030.

Application is still open for the 'Research **Excellence Award' in Environmental Development** in collaboration with the Environment Fund



The Climate Change, Environmental Development, and Vegetation Cover Research Chair, in collaboration with the Environment Fund, announced the continuation of applications for the Research Excellence Award in Environmental Development. The award aims to promote scientific research in environmental development and vegetation cover in the Kingdom fields, encouraging researchers to contribute practical and implementable solutions to address the environmental challenges posed by climate change.

"The Prince Naif bin Abdulaziz Chair for Crime Research has Signed five New Research Contracts."



On Thursday, July 10, 2025, Dr. Ahmed bin Mohammed Aseeri, Supervisor of Prince Naif bin Abdulaziz Chair for the Development of Crime Prevention Methods, signed five new research contracts at the headquarters of the Deanship of Scientific Research Chairs, within the framework of the Chair's strategic efforts to advance scientific research and address societal and security-related issues.























The Secretary-General of « Mawhiba» Foundation Visits the Electrochemical Science Research Chair

In this context, the Electrochemical Science Research Chair hosted students from "Mawhiba" Academic Enrichment Program 2025 to conduct advanced research on the production of green hydrogen and ammonia, providing them with a unique opportunity for hands-on application in an advanced research environment.

The Chair had previously hosted talented students who achieved remarkable accomplishments both locally and internationally, most notably student Hazem Al-Otaibi, winner of the gold medal at the "ISEF 2025".

The Chair's hosting of Mawhiba program students comes as part of its efforts to empower students and equip them with scientific and research skills, thereby contributing to the preparation of a generation capable of building the Kingdom's future innovation.



In this context, the Electrochemical Science Research Chair hosted participants from Mawhiba Academic Enrichment Program 2025 to undertake advanced research on the production of green hydrogen and ammonia, affording them a distinctive opportunity to gain practical experience within a state-of-the-art research environment.

The Chair has a history of mentoring exceptionally talented students who have attained significant achievements at both national and international levels, most notably Hazem Al-Otaibi, recipient of the gold medal at the 2025 International Science and Engineering Fair (ISEF). This initiative exemplifies the Chair's commitment to fostering scientific and research competencies among students, thereby contributing to the development of a generation capable of driving the Kingdom's advancement in the domains of innovation and sustainable technology.

Joint study by COMSATS University and Princess Nourah University explores a novel voice classification approach using the(AVPD) database

This collaborative research reflects the pioneering role of the Voice, Swallowing, and Speech Disorders Research Chair at King Saud University, which established and provided access to the Arabic version of (AVPD). This database has become a scientific reference for national and international researchers that underscores King Saud University's status as an advanced research platform through its specialized research chairs. The study exemplifies a practical model of the impact that international academic partnerships can have in advancing the scientific and medical community.





"The Prince Naif bin Abdulaziz Chair for Crime Research has Signed five New Research Contracts."

The contracts cover the following research projects:

- · Classification of inmates based on risk levels within correctional institutions to achieve security sustainability – supervised by Prof. Noura Nasser Al-Qahtani.
- · Developing a harm index for the most commonly used drugs, assessing their effects, and identifying effective methods for their prevention and control- supervised by Dr. Abdulsalam Wael Al-Sulaiman.
- · The reality and effectiveness of surveillance cameras in enhancing security and reducing crime: An applied study on Riyadh - supervised by Dr. Abdullah Faza'a Al-Qarni.
- Prevention and control of harassment crimes supervised by Prof. Dheeb Mohammed Al-Dosari.
- Child Sexual exploitation: prevention and control mechanisms supervised by Dr. Khalid Omar Al-Rudayan.

The Chair emphasized that these contracts represent a qualitative addition to its research endeavors and an extension of its ongoing efforts to support scientific projects that serve society.

Signing the Agreement of Arab National Bank Chair for Ophthalmic Diseases»



Mr. Khalid Al-Rashed explained that the Arab National Bank's initiative to support the Ophthalmic Research Chair at King Saud University comes as part of the bank's commitment to supporting national research that serves the community, in addition to strengthening the partnership between the bank and the university. This initiative aims to contribute to a qualitative leap towards excellence and innovation, particularly in scientific research field.

For his part, Prof. Ahmed Abu Al-Asrar, Consultant of Ophthalmology and Supervisor of the Chair, stated that the Arab National Bank Chair for Ophthalmic Research seeks to collaborate with distinguished local and international researchers specialized in ophthalmic research, and to maximize the benefits of their expertise by supporting programs for training and qualifying various national talents through scientific research and encouraging students to invest in their outstanding knowledge. The Chair also undertakes in-depth studies and research, and promotes scientific publishing, particularly in high-impact international journals in the field of ophthalmic research. Dr. Abu Al-Asrar noted that the Chair's activities include a variety of programs, initiatives, and events, such as organizing workshops, seminars, and conferences addressing the latest developments in ophthalmic research.



Application is still open for the 'Research **Excellence Award' in Environmental** Development in collaboration with the **Environment Fund**

The award focuses on encouraging high-impact research that contributes to innovative and sustainable solutions to environmental issues, while fostering research and knowledge excellence. It targets faculty members, researchers, and postgraduate students, and is divided into three main categories:

- · Award for Research Productivity in Environmental Development.
- · Award for Research Quality in Envi-

ronmental Development.

• Award for Research Excellence for Postgraduate Students in Environmental Development.

The Chair encouraged interested researchers and students to apply by the 15 September 2025 deadline, highlighting that the award is part of its ongoing efforts to promote scientific research and utilize its outcomes to support sustainable development and advance the goals of Saudi Vision 2030.

Artificial intelligence and Scientific Research



In a time of rapid technological transformation, generative AI is transforming scientific research globally and in Saudi Arabia. In this special Knowledge Society interview, Prof. Khaled Al-Malki, supervisor of the Voice, Swallowing, and Communication Disorders Chair, discusses AI's growing role in research, its opportunities, challenges, and his vision for the future of science in the next decade.

prof. Al-Malki: «We need to develop specialized Arabic and English models to fully benefit from the advanced capabilities of artificial intelligence

Prof.Khalid Almalki

Dr. Khaled, how do you view AI's role in advancing research, particularly in specialized medical fields like voice and communication disorders?

AI especially generative AI—is accelerating the research process from idea to publication. In speech-language pathology, it assists with literature review, vocal feature extraction, and video analysis. When used ethically and with real data, it can also help draft content, which researchers then refine for accuracy.

Can we consider AI merely a tool, or has it become a research partner?

Generative AI is a powerful assistant—it can suggest alternative hypotheses and rapidly compare models, but human researchers remain responsible for decisions, methods, and results.

Based on your experience as supervisor, what are some notable examples of AI reducing months of research work to days or even hours?

Sorting through thousands of published research papers, preparing summaries in survey studies in days instead of weeks, and preparing preliminary charts and detailed explanations of tables and graphs in one data file are examples of time savings, provided that the results are manually verified by a human author.

Saving time by quickly summarizing thousands of studies, generating charts, and detailed explaining data is possible with AI—if results are manually verified by researchers.

Some argue that over-reliance on Al could weaken a researcher's analytical skills. How do you respond to this viewpoint?

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 $\log_a x = \log_b x$

 $\log_b(x') = r \log_b x$

 $\log_b(xy) = \log_b x + \log_b y$

 $\log_b \left(\frac{X}{V} \right) = \log_b x - \log_b y$

The issue is not AI itself, but misuse. Avoid "copy and paste" without critical thinking. There must be manual verification and analysis by the researcher to preserve genuine insight.

What are the most significant opportunities that artificial intelligence offers to researchers in universities and research centers, particularly in Saudi Arabia?

There is still much to be done. We need to create specialized Arabic and English AI models in the health sector, establish national voice and communication disorder registries, accelerate multi-center research, and develop advanced digital educational and therapeutic tools that leverage the evolving capabilities of generative AI.

On the other hand, what challenges or risks of using Al in research, whether in terms of accuracy or scientific ethics?

The main challenges include

poor data quality, bias, privacy violations, and ethical concerns. Addressing them requires clear governance, ethical oversight, transparency, and researcher training.

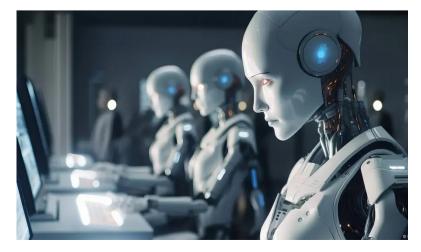
How do you view the undergoing transformation scientific research in the age of artificial intelligence compared to previous decades in terms of research methodology, access to sources, and data analysis?

We've shifted from slow, manual research to a fast, trackable digital workflow. Access to sources has become much easier, and data analysis is now interactive and multi-modal. However, the core principles of research remain unchanged: a strong research question, systematic design, external validation, and transparent publication.

In the medical and health sciences fields, how can Al help maintain the quality and precision of research outcomes?

This can be ensured through a pre-registered research protocol with clear criteria, systematic data cleaning, external validation, and error analysis. Improving language models will enhance accuracy, but the

Prof. Al-Malki: Generative AI is a Powerful Research Assistant, But Not a True Author



human author's role remains essential.

Dr. Khaled, if we asked you to outline a roadmap for a researcher who wants to benefit from Al, what tools and approaches should they start with?

In my view, the ideal roadmap is a "tighten-loosen-tighten" approach: start with strict adherence to AI use policies and proper training, followed by flexible experimentation with tools, then return to disciplined application and careful review to ensure quality.

How will AI shape the future of scientific research in the next decade with the continued advancement of artificial intelligence?

We're likely to see highly capable AI assistants, multi-modal models, and rapid validation. Yet, human researchers will still lead ethically and scientifically. The core of research will evolve—but not disappear.

As a supervisor of a specialized research chair, do you believe that integrating Al into research can open up new avenues for collaboration between medical, engineering, and technical fields?

Absolutely, fields like otolaryngology and speech-language pathology can integrate seamlessly with disciplines such as electrical engineering and computer science. These interdisciplinary partnerships have the potential to significantly shorten the path from the lab to the clinic.

What advice do you have to young researchers using AI?

Use AI responsibly—treat it as a tool, not a decision-maker. Verify outputs, compare tools, respect ethics, and focus on reproducible, high-quality research.

And finally, do you have a message for those using AI in research?

Simply, generative AI is an opportunity to enhance research quality and accelerate its impact but only if we remain precise, transparent, in control, and scientifically honest. That is the way I trust.

KNOWLEDGE - SOCIETY-

A study by the Research Chair for Biomarkers of Chronic Diseases Reveals: The health effects of pesticide residues «.in fruits sold in markets in the Kingdom of Saudi Arabia

This study evaluated the pesticide residues in some fruits collected from different markets in Saudi Arabia and determined potential health risks associated with them. 12 types of fruits from local markets in SA from 2020 2022 were collected and evaluated. Multiple residue extraction method QuEChERS followed by LC-MS/MS and GC-MS/MS, were used to analyze 161 samples.

The results showed that 6.2% of the samples were free of pesticide residues. About 132 samples (87.4%) were below (MRLs), while 19 samples (12%) exceeded these limits. The detected residues belonged to various chemical classes, including organophosphates, Chlorpyrifos, pyrethroids, organochlorines,



exposure to pesticides via the intake of the fruit types was performed. Hazard index (HI) formostfruittypeswerefound to be less than 1. Oranges, grapes and pomegranates were the most consumed fruit types and were contaminated with pesticide residues. Fluopyram, Imazalil, Fenamiphos, Indoxacarb, showed and neonicotinoids, and fungicides. high risk index suggesting the SA community.

Risk assessment of human risk for systemic toxicity in consumers dependent on the amount of consumption In summary, the study highlights a high detection rate of pesticide residues in fruits sold in local Saudi markets. It recommends implementing regular monitoring programs for food crops, particularly in identified crops with His >1 to increase food safety within



Patent titled



Imidazolium ionic liquids made using cardanol extracted from cashew nutshell oil to enhance crude oil recovery in oilfields

on April 30, 2024, the Surfactant Research Chair, represented by a group of researchers, was granted a U.S. patent titled:

" Imidazolium ionic liquids made using cardanol extracted from cashew nutshell oil to enhance crude oil recovery in oilfields" This invention relates to the field of advanced chemical materials used in oil industry, particularly the development of ionic liquids and multifunctional nanoparticles for improving oil recovery and enhancing crude oil properties.

The invention is based on modifying chemical structures of cardanol extracted from cashew nut shell oil, to prepare imidazolium ionic liquids. The IILs can be used to prepare different types of silica, magnetite and calcium carbonate nanoparticles (NPs) as multifunctional oilfield chemicals for use in various oil spill collection, de-emulsification, viscosity improvement, asphaltene dispersant, and enhanced oil recovery applications.

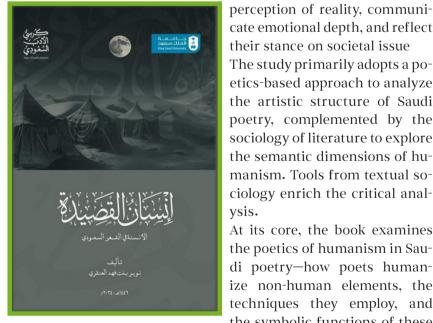
Book Publications:

The Human of the Poem: Humanization in Saudi Poetry»

The Saudi Literature Chair has published a book entitled The Human of the Poem: "Humanization in Saudi Poetry" by Noura bint Fahd Al-Anqari.

This book addresses the concept of humanism in Saudi poetry, examining how poets reflect human values and emotions by attributing human characteristics to non-human elements in their verse. The study adopts a poetic (constructivist) approach to ana lyze the aesthetic components of poetic discourse, alongside tools from sociology of literature, to understand the social meanings embedded in poetic humanism.

Through selected examples from published Saudi poetry collections, the book highlights how poets humanize inanimate elements to express their



cate emotional depth, and reflect their stance on societal issue The study primarily adopts a poetics-based approach to analyze the artistic structure of Saudi poetry, complemented by the sociology of literature to explore the semantic dimensions of humanism. Tools from textual sociology enrich the critical anal-

At its core, the book examines the poetics of humanism in Saudi poetry-how poets humanize non-human elements, the techniques they employ, and the symbolic functions of these

images in expressing reality and the poet's perspective, based on selected works from published Saudi poetry collections.



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