77 RESEARCH CHAIRS

KNOWLEDGE SOCIETY

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King Saud University

Issue - 19

Periodical Newsletter

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Issued by the Vice Deanship of Research Chairs

The Chair of the Voice, Swallowing, and Communication participates in the 16th Pan-European Voice Conference (PEVOC16)

Prof. Khaled Al-Malki, Supervisor of the Research Chair of Voice, Swallowing, and Communication, presented a specialized workshop addressing the challenges associated with the "hallucinations" in generative AI tools at the 16th Pan-European Voice Conference, Prof. Khalid Al-Maliki reviewed key methodologies and modern techniques for mitigating this issue, thereby enhancing the reliability of AI-generated outputs in medical and research applications.

Prof. Al-Malki also organized and chaired a round table discussion focused on exploring AI applications in the diagnosis and treatment of voice disorders, with the participation of several international experts.

The discussion outcomes highlighted the promising potential of AI technologies in advancing healthcare practices related to voice, improving diagnostic accuracy and treatment efficiency, and supporting scientific research in this field. The recommendations also emphasized the importance of adhering to scientific and methodological standards, as well as fostering integration between human expertise and intelligent technologies to ensure responsible and effective use.

The conference lasted four days, with activities distributed across six parallel sessions, bringing together leading international experts and researchers to discuss the latest scientific and applied developments in voice disorders, including diagnosis, treatment, and related modern technologies.

Participation of the Chair Supervisor in this conference reflects ongoing efforts to strengthen the international scientific presence of research chairs, promote knowledge exchange, and keep pace with rapid advancements in research and innovation.

"Energy Bridges" Concludes Its Activities with Training 32 Saudi Trainees in Energy Media

The "Energy Bridges" program, hosted by King Saud University, concluded its activities in Riyadh by honoring its graduates through the "Dr. Ibrahim Al-Muhanna Chair for Energy and Specialized Media," as part of a strategic initiative in collaboration with the Energy Media Association and supported by "Misk" Foundation.

The event was attended by several officials and specialists, including the Dean of Scientific Research, Dr. Saleh Al-Wasel, the Advisor to the Minister of Energy, Dr. Ibrahim Al-Muhanna, and a number of experts in the fields of media and energy.

Dr. Mutlaq Al-Mutairi, supervisor of the chair, explained that the project was launched in 2024 with funding from Dr. Ibrahim Al-Muhanna. It aims to develop specialized energy media by bridging the knowledge gap, improving the quality of media content, and linking academia with labor market needs.

Bandar Al-Harbi, Executive Director of the Energy Media Professionals Association, stated that the program seeks to enhance the skills of media professionals according to international standards, contributing to the development of a specialized media community that supports Saudi Arabia's leading position in the global energy sector.

Program Director Dr. Talal Al-Shathri noted that the program ran from October 2025 to February 2026, with 32 trainees selected out of 114 applicants. It included 18 intensive training modules totaling 80 training hours. Seventeen trainees completed the full program and received certificates, while the remaining 15 benefited from separate training courses. This initiative supports Saudi Vision 2030 by building nationally competitive capabilities, including in the field of energy media.

A Novel Engineering Innovation Enhancing the Stiffness of Steel Structures

A Novel Engineering Innovation Enhancing the Stiffness of Steel Structures

Researchers from the Chair for Research and Studies in Strengthening and Rehabilitation of Structures have registered a patent with the United States Patent and Trademark Office for a new moment connection for steel-framed buildings, aimed at improving structural safety and performance under dynamic loads such as earthquakes and strong winds.

Core of the Invention:

The patent addresses one of the major challenges in structural engineering. The innovation introduces an improved design for the connection between steel beams and columns by enhancing stress distribution, reducing the likelihood of local failure, and improving structural performance under high and repeated loads.

How the Technology Works:

The concept is based on a geometric modification of the connection region by incorporating additional elements and optimized shapes. This enhances the connection's ability to transfer moments, reduces stress concentration at critical points, and improves ductility while maintaining stiffness, which is essential in the design of earthquake-resistant structures.

Scientific and Engineering Implications:

The innovation follows modern structural engineering trends that focus on developing "smarter connections, improving performance efficiency without increasing material costs, extending structural lifespan and reducing maintenance requirements.

Significance of the Innovation:

If proven effective in practical applications, this design could:

- Reduce structural collapse risks during disasters.
- Lower construction costs through more efficient use of materials.
- Improve safety standards in large-scale structures such as buildings and bridges.

Patent

Advanced Materials Research Chair Wins Gold Medal at the Geneva International Exhibition of Inventions 2026

The Advanced Materials Research Chair has achieved a prestigious international milestone by winning the Gold Medal at the Geneva International Exhibition of Inventions 2026 for an innovation presented by Prof. Dr. Mohammed Abdelati Habila in the field of nanoscale control of silica for enhanced lead adsorption, water purification, and radioisotope separation.


DIPLÔME
Inventions Geneva
SALON INTERNATIONAL DES INVENTIONS
GENÈVE
Après examen, le Jury International a décidé
de remettre à : Prof. Dr. Mohamed Abdelaty Habila
Mr. Ahmad Saud Abdullah Alobaysi
Prof. Dr. Ibrahim Aljammaz
Prof. Dr. Zeid Abdullah Alothman
pour l'invention : Nanoparticules de silice fonctionnalisées pour l'adsorption du plomb
MÉDAILLE D'OR GOLD MEDAL GOLDMEDAILLE
Genève, le 14 mars 2026

The innovation is based on the patent "US 12,311,337 B1 , Functionalized silica nanoparticles for lead adsorption." The USPTO record lists Mohamed Abdelaty Habila, Ahmad Saud Abdullah Alobaysi, Ibrahim Aljammaz, and Zeid Abdullah Alothman.

The developed materials demonstrated superior efficiency and faster performance compared to conventional methods. In addition, the innovation contributes to supporting environmental sustainability and advancing the objectives of Saudi Vision 2030 in the field of water purification.The innovation was developed with the participation of: Prof. Mohammed Abdelati Habila, Prof. Ahmed Al-Obaisi, Prof. Ibrahim Al-Jammaz, and Prof. Zaid bin Abdullah Al-Othman. Professor Zaid bin Abdullah Al-Othman, Supervisor of the Advanced Materials Research Chair and Dean of the College of Science, extended his appreciation to all contributors, as well as to the Department of Chemistry at the College of Science, the Innovation Center, and the Vice Deanship of Scientific Research for their continuous support of creativity and innovation.

Cyber-Security Research Chair: A Specialized Research Platform Contributing to Building a Safer Digital Environment

- 54 scientific papers published in peer-reviewed journals.
- Two registered patents in encryption technologies (ECC).
- Support for master's and PhD theses in cyber-security fields.

Introduction: (Cyber-security at the Heart of Digital Transformation)

At a time when digital systems have become the backbone of government and economic services, cyber-security is no longer a technical option but a strategic necessity to ensure the stability and sustainability of these systems. As smart technologies continue to advance rapidly, cyber threats are increasing in pace, creating a need for advanced solutions built on scientific research and innovation.

In this context, the role of the university emerges through the Cyber-security Research Chair, which serves as a specialized research platform dedicated to advancing knowledge, fostering innovation, and contributing to the creation of a more secure digital environment.

Scientific Output Reflecting Depth of Expertise: (Advanced research addressing a wide spectrum of cyber-security challenges)

Scientific output is one of the most prominent indicators of the Chair's activity, having contributed to the publication of 54 research papers in peer-reviewed journals, addressing advanced topics in the field of cyber-security.

Talent Development and Capacity Building: (Investing in Minds to Meet Future Challenges)

The Chair's role extends beyond academic publishing to include building human capacities in the field of cyber-security by engaging graduate students in advanced research projects. The Chair has also supported several academic theses addressing contemporary topics. This approach reflects the Chair's commitment to preparing a new generation of specialized researchers capable of addressing rapidly evolving technological challenges and contributing to the development of innovative solutions in this vital field.

Innovation and Technical Development: (Patents Strengthening the Transition from Research to Application)

The Chair has registered two patents in elliptic curve cryptography (ECC), a modern approach for data protection and secure digital communications. This achievement represents an important step in transforming scientific research into practical applications, supporting innovation and the development of advanced security solutions, thereby contributing to the digital economy.

Specialized Workshops: (A Scientific Platform for Advancing Network Security)

The Chair continues to organize specialized network security (NetSec) workshops to keep pace with the latest developments in the field. The 2025 workshop focused on artificial intelligence applications; the 2024 workshop discussed Information-Centric Networking (ICN), while the 2023 workshop reviewed global best practices in network security with participation from international experts.

Future-Oriented Research Areas: (Research Diversity Reflecting a Comprehensive Vision)

The Chair focuses on key modern cyber-security research areas, including AI in cyber-security, Internet of Things (IoT) security, secure cloud computing, cryptography, data protection, and critical infrastructure security. This diversity reflects the Chair's ability to deliver integrated solutions for today's digital security challenges.

Partnerships Supporting Research Integration: (Collaboration with Academic and Applied Entities)

The Chair strengthens partnerships with academic and applied institutions to conduct joint research projects, develop practical technological solutions, and support knowledge transfer from academia to real-world applications. This collaboration enhances the impact of research and expands its practical value.

Conclusion: (Towards a More Secure and Sustainable Digital Ecosystem)

The Cyber-security Research Chair represents an integrated model combining scientific research, innovation, and capacity building. It has contributed to publishing 54 research papers, registering two patents in cryptography, supporting researchers and postgraduate students, and organizing specialized scientific events.

International Days

May 5 — World Asthma Day

• In 2023 asthma affected more than 363 million people, and caused 442,000 deaths worldwide, most of which are preventable.
• Controller inhalers containing inhaled corticosteroids help reduce airway inflammation and prevent attacks. Use all inhalers as prescribed by your doctor.
• Know your asthma triggers. Common triggers include house dust mites, pollen, pet dander, air pollution, cold air, and cigarette smoke. Identifying and avoiding these triggers can significantly reduce attacks.
• Asthma is not just a childhood disease. It can develop at any age. Adult-onset asthma is more severe if not properly diagnosed and treated.
• Exercise is allowed—and encouraged—with proper medical management, as it strengthens the lungs and improves respiratory function.
• Do not confuse relief with control. A rescue inhaler relieves symptoms immediately, while a controller inhaler prevents them. Most patients need both, so always consult your doctor.
• Secondhand smoke and asthma do not mix. Exposure to cigarette smoke is one of the strongest asthma triggers, especially in children. Keep indoor spaces smoke-free.
• Asthma may be misdiagnosed. It is sometimes confused with pneumonia or tuberculosis, leading to inappropriate treatment. Always seek a confirmed diagnosis from a qualified healthcare professional.

Prof. Abdulaziz Al-Odhayani, Supervisor of Awareness and Health Education Research Chair.

May 17 — World Hypertension Day

• Hypertension is the 'silent killer' that can lead to life-threatening complications such as heart attacks, stroke, renal failure, and vision loss. According to the World Health Organization (WHO), an estimated 1.4 billion adults aged 30-79 years worldwide had hypertension, (44%) are unaware that they have the condition. (44%) are diagnosed and treated.
• Normal blood pressure is below 120/80 mmHg. ACC/AHA defines normal blood pressure as less than120/80 mm Hg, and hypertension as 130/80 mm Hg or higher.
• Measure accurately. Use a validated automatic cuff on your upper arm while sitting calmly, with your arm at heart level. Take repeated readings and average them for accuracy. Inaccurate measurement can lead to misdiagnosis.
• Reduce salt intake. Cutting down on salt is a simple and effective way to lower blood pressure and improve overall health. The World Health Organization recommends no more than 5 grams (one teaspoon) per day.
• Stay physically active. Regular physical activity—at least 30 minutes of moderate exercise five days a week—helps lower blood pressure, reduce stress, and protect the heart.
• A healthy diet protects your heart. Eat more fruits, vegetables, whole grains, and lean proteins. Reduce processed foods, saturated fats, and sugary drinks. The DASH diet is scientifically proven to lower blood pressure.
• Manage stress. Chronic stress can raise blood pressure over time. Practice relaxation techniques such as deep breathing, meditation, and regular physical activity to keep stress under control.
• Family history matters. High blood pressure often runs in families. If a close relative has it, your risk is higher. Start early screening if you have a family history.

Prof. Abdulaziz Al-Odhayani, Supervisor of Awareness and Health Education Research Chair.

May 28 – International Day of Action for Women's Health

The Research Chair for Women's Health organizes an annual awareness campaign in conjunction with the International Day of Action for Women's Health, marked annually on May 28th. This year's campaign will be held under the title: "Women's Mental Health During Pregnancy and Postpartum"
The campaign will be conducted in several charitable associations, with the participation of distinguished faculty members from King Saud University and the Saudi Electronic University.
The campaign includes the following themes:
• Raising awareness about women's mental health during pregnancy and the postpartum period.
• Educating women about preparing for childbirth and new responsibilities.
• Identifying psychological disorders that may accompany pregnancy and childbirth.
• Discussing ways to cope with psychological changes and when to seek medical help.
For more details about the campaign visit the Women's Health Research Chair's X account: @WomenHealthRC.

Dr. Lamis Al-Wotban – Supervisor of the Women's Health Research Chair.

Skin Cancer Awareness Month

In our daily lives, we are closely connected to the sun; it is a source of light, In our daily lives, the sun provides light, warmth, and energy. However, many people may not realize that sunlight contains ultraviolet (UV) radiation, which is one of the leading causes of skin cancer.
Ultraviolet radiation is divided into three main types:
• UVA and UVB: Both damage the skin and can contribute to skin cancer. UVB directly damages DNA and causes sunburn, while UVA contributes to aging and indirect DNA damage.
• UVC: The most dangerous type; however, it is almost completely absorbed by the atmosphere.
Although UV rays are invisible, they have a direct impact on skin cells. Prolonged exposure, especially during peak hours, can damage skin cells and gradually damage the DNA, potentially leading to tumors. Darker skin contains more melanin, which provides partial protection by absorbing some harmful UV radiation and reducing the risk of skin cancer. In contrast, fair skin is more susceptible to damage. However, this protection is not complete, and skin cancer can affect people of all skin tones.
Prevention is simple but essential: limit sun exposure during midday hours, use sunscreen, and wear protective clothing. Early detection of unusual skin changes can greatly improve treatment outcomes.
In conclusion, the sun is a great blessing, but safe exposure is key to protecting our health.

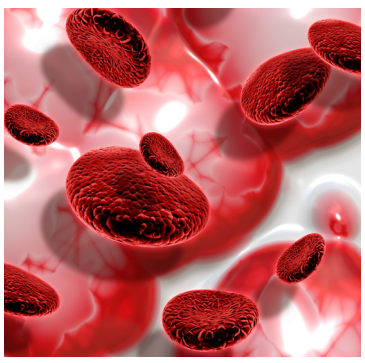
Prof. Khalid Al-Zahrani, Supervisor of Chair for diagnosing cancer diseases using laser.

Celiac Awareness Month

Is the disease common?
Like many diseases in developing countries, celiac disease may initially appear to be a new condition. This perception is mainly due to increased awareness among both patients and physicians, as well as the advancement and ease of diagnostic methods compared to the past.
What is celiac disease?
Celiac disease is an acquired autoimmune disorder that affects the small intestine in genetically predisposed individuals. It is caused by a permanent sensitivity to gluten, a protein found primarily in wheat, barley, and rye. Oats do not contain the same gluten protein, but they may be contaminated with wheat, barley, or rye, and they contain another protein called avenin, which some patients may not tolerate.
Celiac disease can affect any age group, from early childhood to late adulthood. Certain medical conditions such as Down syndrome, Turner syndrome, type 1 diabetes mellitus, and autoimmune thyroiditis are associated with a higher risk of developing the disease.
Treatment
The only treatment for celiac disease is a lifelong gluten-free diet. There is currently no alternative treatment that prevents intestinal inflammation other than complete elimination of gluten from the diet. Adhering to this diet can be challenging and costly, and many patients struggle to maintain it due to the widespread presence of gluten in many food products. In addition, patients may require supplementation with vitamins and iron in cases of deficiency, along with clear guidance on allowed and prohibited foods.

Prof. Asaad Mohammed Asiri, Supervisor of Research Chair for Celiac Disease.

A study by the Rehabilitation Research Chair revealed: Preventive Practices Toward Iron Deficiency Anemia are Suboptimal Among Students and Faculty Members at the College of Applied Medical Sciences



Iron deficiency anemia (IDA) can cause cognitive impairment, fatigue, weakened immunity, and pregnancy complications.

It results from poor diet, iron malabsorption, blood loss, or increased demands. Assessing the knowledge, attitudes, and dietary behaviors, particularly among those in the medical field, is essential for promoting preventive strategies against IDA.

This study aimed to assess the knowledge, attitudes, and practices towards IDA among paramedical college staff and students in a Saudi university.

This online cross-sectional survey included 204 respondents (60 staff and 144 students) from a paramedical college at King Saud University, using a non-probability sampling method. A self-administered, English, pre-tested questionnaire was used for the data collection via institutional email. It included sections on respondents' demographics, knowledge, attitudes, and practices towards IDA. Respondents submitted completed forms within two weeks, and responses were screened based on predefined eligibility criteria. Descriptive statistics summarized the data, and Chi-square tests were used to examine associations between demographic variables and IDA-related knowledge, attitudes, and practices.

Results: Of 204 respondents (60 staff, 144 students), 35% of staff and 22% of students reported being diagnosed with IDA in the past 2-3 years before the survey, with significantly higher prevalence among females. Among students, a significant association between gender and IDA occurrence was observed. While 98% of staff and 96% of students showed adequate knowledge of IDA, attitudes were generally favorable.

However, most with prior IDA did not adopt special diets or take supplements. Physician consultations were reported by 50% of staff and 33% of students, and dietitian visits by 10% and 22%, respectively, with a significant gender-based difference among students. Dietary practices towards IDA were suboptimal. Only 13% of staff and 10 % of students followed a special diet, and less than one-third used iron supplements. High intake of tea/coffee and low consumption of iron-rich foods were common in both groups.

Book Publications

Political Communication and New Media

The Dr. Ibrahim Al-Muhanna Chair for Energy and Specialized Media has published a book titled Political Communication and New Media by Dr. Mutlaq Saud Almutairi.

Political communication is considered one of the academic and intellectual fields that has increasingly attracted the attention of thinkers and researchers worldwide in recent years, due to its significant role in the political environment. It examines the interaction between communication, the political system, and the political process, emphasizing the fundamental relationship between them.

Recent studies confirm that media outlets have become a powerful force in society, influencing public opinion and political decision-making through the content they transmit. Political communication also addresses the dynamic relationship between political actors, media, and the public, and how media interpret political agendas and convey them to society, while politicians use media to promote their image.

The book is divided into nine chapters covering key concepts, influencing factors, and the role of new media.

Scientific Inspiring Quote

Thomas Edison

"Genius is one percent inspiration, ninety-nine percent perspiration"

As:

Ideas alone are not enough to achieve greatness. Inspiration represents only (1%) of success, while hard work and daily dedication make up the vast majority (99%) that turns a vision into reality.

Why?

It inspires scientists and students to prioritize persistence and discipline over waiting for inspiration.

The Idea that Changed the World

The Development of Multi-Touch Technology

Bill Buxton's timeline identifies Nimish Mehta's 1982 University of Toronto work as the first documented multi-touch device for human-computer interaction, specifically a touch-tablet.

Why did it change the world?

Led to the development of multi-touch screens used in smartphones and tablets.

Made interaction with digital devices smoother and more natural, such as pinching to zoom and dragging items, and drag-and-drop actions.

Opened the door for innovative applications in gaming, design, and productivity.

Became a foundational technology in the modern smartphone revolution, beginning with Apple's iPhone, and subsequently spreading across smartphones, tablets, and a wide range of contemporary digital devices.

In short, a technological breakthrough has completely transformed the way we interact with digital devices and made our daily lives easier and more interactive.

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