

منظومة البحر الابتكار

The University of Tabuk Research, and Innovation Ecosystem



Table of Contents



Background

Introduction	3
Academic Excellence & Research Impact	4
Graduate Programs	5
Research Priorities	7
UT Partnerships	8
Key Stakeholders	10
Research Entities	11

Research and Innovation Entities

Innovation and Entrepreneurship Center	12
The National Alliance for Innovation District	14
Innovation Bridge	15

Impactful Projects

Community and Regional Impact	21
Supporting Innovation with Patentability Analysis	22
Major Joint Projects	23
Join us on our Journey	32



Research and Innovation

Research and innovation are fundamental pillars in achieving the goals of Saudi Vision 2030, which aims to build an integrated ecosystem that supports entrepreneurship and innovation while enhancing sustainable development. The Ministry of Education, represented by the Research and Innovation Agency, is committed to providing a comprehensive environment to realize these ambitions through policy formulation, legislative development, and diverse forms of support. These efforts aim to ensure excellence in scientific research and innovation and position the Kingdom among the top ten countries globally in competitiveness rankings.

The Research, Development, and Innovation Authority (RDI) also strives to create a stimulating environment for creativity by supporting researchers and innovators, linking scientific research with industry, and strengthening partnerships with the private sector. The Authority supports the establishment of knowledge centers and high-impact initiatives that contribute to the development of industrial models serving the national economy. It also seeks to achieve the ambitious goal of having at least five Saudi universities ranked among the top 200 global universities by 2030.

Achieving this objective depends on the quality of research output, patents, enhanced collaboration between researchers and research centers, strong university-industry linkages, and effective intellectual property management.

Inspired by these national directions, the University of Tabuk has adopted an ambitious initiative to build an integrated research and innovation ecosystem focused on investing in human capital and infrastructure development. This ecosystem aims to improve research quality, increase collaboration among research centers, and stimulate innovation by turning ideas into practical projects. It also supports economic development through research commercialization, fosters entrepreneurship, and builds human capabilities.

Through this comprehensive approach, the University of Tabuk continues its journey toward global recognition and actively contributes to enhancing the Kingdom's competitiveness and advancing its path toward a sustainable and knowledge-based economy.



Background

University of Tabuk



Founded in 2006, the University of Tabuk (UT) is one of the leading public universities in the Kingdom of Saudi Arabia, located in the northwestern region of the country. Strategically positioned near NEOM and the Red Sea Project, the university plays a vital role in supporting national and regional development initiatives.

With over 35,000 enrolled students and more than 1,600 faculty members, the University of Tabuk offers a wide range of academic programs across various colleges, including engineering, science, medicine, pharmacy, education, computer science, and business. The university is committed to academic excellence, innovation, and community engagement.

As part of its mission to contribute to a knowledge-based economy, the University of Tabuk has developed a vibrant research and innovation ecosystem, supported by specialized research centers, strategic partnerships, and programs aligned with Vision 2030. The university continuously invests in infrastructure, talent, and technology to enhance creativity, interdisciplinary collaboration, and impactful solutions for societal and global challenges.

Through its dedication to quality education, research excellence, and innovation leadership, the University of Tabuk aims to be a model institution in the region and an active contributor to the Kingdom's transformation journey.

The University of Tabuk contributes to national and international sustainability goals by addressing key challenges in agriculture, water management, and environmental conservation. Our work emphasizes research, innovation, and community engagement to achieve impactful outcomes.

The University of Tabuk is located in the northwestern region of Saudi Arabia, at the crossroads of the Red Sea and major global trade routes. As part of the growing Tabuk region, UT contributes to national and regional projects such as NEOM and The Red Sea Project, leveraging its geographic advantages to focus on environmental conservation and renewable energy.



UT's identity has always been fundamentally shaped by its partnerships. On the other hand, the current complex issues have underscored and intensified the importance of alliances, thereby elevating them to a top priority for UT. Corporations, government agencies, communities, or universities are incapable of addressing numerous contemporary challenges with their own initiatives, but these obstacles could be effectively addressed by coordinating resources and initiating collaborative endeavors. Consequently, enterprises are consistently seeking assistance from universities to enhance their competitiveness in the knowledge-driven global economy. Lawmakers and influential members of the community anticipate that universities will collaborate in exploring and resolving the complex issues confronting local communities. The faculty and students are actively seeking fresh prospects for education, investigation, and job opportunities, while the management of UT views collaborations as crucial for implementing the university's strategic objectives.



In this context,

The Tabuk region is rich in natural resources, with opportunities for advancing:

1. Renewable energy technologies, such as solar and wind power.
2. Sustainable land use and desert farming systems.
3. Marine biodiversity studies along the Red Sea coast.



Academic Excellence & Research Impact

As part of its strategic vision to support national development, the University of Tabuk is aiming to be a leading institution in higher education and research excellence in the Kingdom of Saudi Arabia. With a thriving academic community of over 35,000 students and a growing number of accomplished faculty members and researchers, the university is committed to create a knowledge-driven environment that advances innovation, interdisciplinary collaboration, and societal impact.

The University of Tabuk offers a comprehensive portfolio of graduate and postgraduate academic programs that are closely aligned with national priorities and global scientific trends. These programs are designed to prepare future leaders and specialists in critical fields such as renewable energy, artificial intelligence, cybersecurity, biotechnology, medical sciences, and environmental sustainability.

In the last three years, the university has demonstrated remarkable growth in its research productivity and innovation capacity—achieving over 6,000 peer-reviewed publications, securing 36 granted patents, and submitting numerous others. These outcomes reflect a strategic commitment to promoting impactful research, leveraging national and international partnerships, and contributing meaningfully to the goals of Saudi Arabia's Vision 2030.

Through its dedication to academic distinction and transformative research, the University of Tabuk continues to elevate its position as a regional hub for scientific discovery and a key contributor to the global academic community.



Graduate Programs

The University of Tabuk offers a comprehensive portfolio of graduate programs at the doctoral and master's levels, designed to advance scientific knowledge, support research excellence, and prepare highly qualified professionals across a wide range of disciplines. These programs reflect the university's commitment to academic quality, innovation, and alignment with the national priorities of the Kingdom of Saudi Arabia, particularly the objectives of Saudi Vision 2030.

Delivered through several academic colleges—including Computer and Information Technology, Applied Medical Sciences, Science, Engineering, Business Administration, Education and Arts, and Sharia and Law—these programs combine advanced coursework with research and practical applications to address emerging scientific, technological, and societal challenges.

The table below presents an overview of the graduate programs currently offered at the University of Tabuk, including the academic degree, program specialization, and the corresponding college.

College	Academic Degree	Program	Credit Hours
Faculty of Computer & Information Technology	PhD	Computer Science	48
College of Applied Medical Sciences	PhD	Medical Laboratories (Molecular Medicine)	45
Faculty of Education & Arts	Master	Education in Foundations of Education	46
Faculty of Education & Arts	Master	Arts in Arabic Language & Literature (Linguistics Track)	43
Faculty of Education & Arts	Master	Arts in Arabic Language & Literature (Literature & Rhetoric Track)	43
College of Sharia and Law	Master	Hadith and Its Sciences	32
College of Sharia and Law	Master	Quran Interpretation and Sciences	44
College of Sharia and Law	Master	Fiqh	50
Faculty of Science	Master	Mathematics	43
Faculty of Education & Arts	Master	Special Education (Intellectual Disability)	36
Faculty of Education & Arts	Master	Special Education (Learning Disabilities)	36
Faculty of Education & Arts	Master	Special Education (Autism)	36
Faculty of Education & Arts	Master	Education in Measurement & Evaluation	43
Faculty of Education & Arts	Master	Early Childhood & Early Intervention	12
Faculty of Education & Arts	Master	Arts in English Language & Linguistics	30
Faculty of Science	Master	Applied Statistics	48
Faculty of Science	Master	Chemistry	47
Faculty of Science	Master	Materials Physics	48
Faculty of Business Administration	Master	Financial Sciences	51
College of Applied Medical Sciences	Master	Medical Laboratories (Clinical Chemistry)	48
College of Applied Medical Sciences	Master	Medical Laboratories (Hematology and Blood Transfusion)	47
College of Sharia and Law	Master	Public Law	45
Faculty of Engineering	Master	Engineering Management	42
College of Applied Medical Sciences	Master	Medical Laboratories (Molecular Medicine)	47
Faculty of Computer & Information Technology	Master	Information Security	43

Graduate Programs

The University of Tabuk offers a comprehensive portfolio of graduate programs at the doctoral and master's levels, designed to advance scientific knowledge, support research excellence, and prepare highly qualified professionals across a wide range of disciplines. These programs reflect the university's commitment to academic quality, innovation, and alignment with the national priorities of the Kingdom of Saudi Arabia, particularly the objectives of Saudi Vision 2030.

Delivered through several academic colleges—including Computer and Information Technology, Applied Medical Sciences, Science, Engineering, Business Administration, Education and Arts, and Sharia and Law—these programs combine advanced coursework with research and practical applications to address emerging scientific, technological, and societal challenges.

The table below presents an overview of the graduate programs currently offered at the University of Tabuk, including the academic degree, program specialization, and the corresponding college.

College	Academic Degree	Program	Credit Hours
Faculty of Computer & Information Technology	Master	Artificial Intelligence	46
Faculty of Computer & Information Technology	Master	Data Science	45
Faculty of Business Administration	Master	Executive Master of Business Administration	48
Faculty of Business Administration	Master	Human Resource Management	48
Faculty of Business Administration	Master	Digital Marketing	48
Faculty of Business Administration	Master	Executive Master of Forensic Accounting	48
Faculty of Science	Master	Master of Science in Biodiversity	48
Faculty of Science	Master	Medical Physics	62
Faculty of Education & Arts	Master	Educational Administration & Planning	46
Faculty of Education & Arts	Master	Curriculum & Instruction	45

The University of Tabuk's Research Priorities

Environmental Technology



Medical Technology



Partnerships with National and International Institutions

- The University of Tabuk actively collaborates with leading national and international institutions to address key scientific and environmental challenges and to advance innovation-driven research.
- Through strategic partnerships with organizations such as RDI, Saudi Water Authority, Environment Fund, NEOM, and Red Sea Global, the university contributes to high-impact projects supporting sustainability, environmental protection, and technological advancement.
- International collaborations with universities including University of British Columbia, University of Nottingham, University of Sheffield, University of Murcia, Teesside University, and the Chinese Academy of Sciences further strengthen research capabilities and global knowledge exchange.
- These partnerships support a growing research ecosystem with more than 1,000 active researchers and over 180 research groups, enabling interdisciplinary collaboration and impactful research aligned with national priorities.



صندوق البيئة
Environment Fund
المملكة العربية السعودية



وزارة البيئة والمياه والزراعة
Ministry of Environment, Water & Agriculture



منشآت
monshaat



نيوم, NEOM



الهيئة السعودية للمياه
Saudi Water Authority



University of Murcia



البحر الأحمر العالمية
Red Sea Global



الهيئة السعودية للمواصفات والمقاييس والجودة
Saudi Standards, Metrology and Quality Org.



إدارة منطقة تبوك
Municipality Of Tabuk



The University of Nottingham



OneWeb



وقاية
Weqaya



مزارع أسترا
ASTRA FARMS



مخبة الملك عبدالعزيز
للتعليم والتكنولوجيا KACST



المركز الوطني
للتحقيق الجزيئية
المملكة العربية السعودية



وزارة الصحة
Ministry of Health



مخبة الأمير
للصحة والتغذية
Saudi Food & Drug Authority



مخبة الملك سلمان بن عبدالعزيز
للصحة والتغذية
Saudi Food & Drug Authority



استدامة
Estidamah



المركز الوطني
للتحقيق الجزيئية
المملكة العربية السعودية



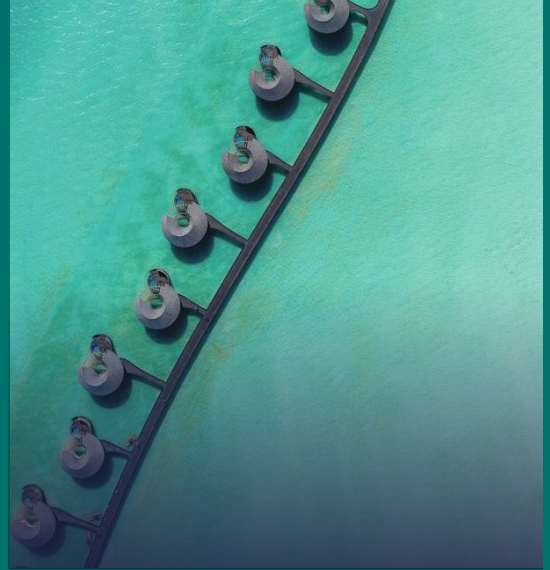
وزارة الصحة
Ministry of Health



مخبة الأمير
للصحة والتغذية
Saudi Food & Drug Authority



مخبة الملك سلمان بن عبدالعزيز
للصحة والتغذية
Saudi Food & Drug Authority



Key Stakeholders and Partners

Prominent entities from the university's partners and various community sectors actively participate in defining the research priorities and activities of the University of Tabuk, particularly in shaping the focus areas for funding programs.





Research Entities



**TDI Fund, Approximately
SAR 20,000,000**

- Renewable Energy and Environmental Technologies
- Artificial Intelligence and Sensing Technologies (AIST) Center
- Prince Fahad bin Sultan Chair for Biomedical Research
- Genomic and Biotechnology Research Unit
- Molecular Microbiology and Infectious Diseases Research Center

**British council fund,
Approximately SAR 300,000 to
(AIST)**

**Environment fund,
Approximately SAR 600,000
to (Research Group)**

Funded Group and Project

- External research funding exceeding SAR 32 million in 2025
- More than 2,600 research publications produced in 2025



Artificial Intelligence and
Sensing Technologies

Renewable Energy and
Environmental
Technologies

Prince Fahad bin Sultan Chair
for Biomedical Research

Innovation and
Entrepreneurship Center

Molecular Microbiology
and Infectious Diseases
Research Center

Genomic and
Biotechnology Research
Unit



**ULTIMATE
INNOVATION**
UNIVERSITY OF TABUK



Ultimate
Innovation 2024



Ultimate
Innovation
Overview 2023



Ultimate
Innovation
Overview Video



Innovation and Entrepreneurship Center



IASP

International Association of Science Parks
and Areas of Innovation



Innovation and Entrepreneurship Center



هيئة تنمية البحث
والابتكار
Research, Development
& Innovation Authority

The Innovation and Entrepreneurship Center (IEC) at the University of Tabuk is a driving force behind the university's innovation ecosystem, fostering a culture of creativity, entrepreneurship, and applied research. The center empowers students, faculty, and researchers to transform ideas into high-impact solutions and sustainable ventures.

As an official affiliate member of the International Association of Science Parks and Areas of Innovation (IASP), the IEC aligns with global best practices in innovation management and plays a key role in connecting the university with global innovation networks.



IEC Incubator

The IEC incubator is designed for innovators, students, and early-stage startups who have a promising idea and need structured support to develop a viable business.

TRAINING &
WORKSHOPS

BUSINESS MODEL
DEVELOPMENT

MENTORSHIP
BUSINESS COACHING

CO-WORKING &
INNOVATION SPACE

NETWORKING &
COLLABORATION

FUNDING & GRANT
SUPPORT

INTELLECTUAL
PROPERTY (IP) &
LEGAL SUPPORT

PROTOTYPE
DEVELOPMENT



The National Alliance for Innovation District



Innovation districts represent a critical element of Vision 2030 by supporting a knowledge-based economy that promotes diversification and economic resilience. Saudi Arabia's National Innovation Districts Alliance, spearheaded by RDI, reflects the Kingdom's strategic shift toward creating vibrant ecosystems where academic institutions, industry leaders, and government agencies can collaborate to overcome challenges and leverage resources. These districts are positioned as conduits for talent, entrepreneurship, and investment, empowering the next wave of innovators to contribute to a sustainable, globally competitive Saudi Arabia.

The Innovation and Entrepreneurship Center (IEC) is one of the main components of the University of Tabuk's research and innovation ecosystem.

Its mission is to stimulate creativity, transform research ideas into viable projects, and support university community entrepreneurs in developing applicable business models, contributing to a knowledge-based economy aligned with Saudi Vision 2030.



One Community
With the spirit of
innovation



Workshops



More than 30 Specialized workshops on innovation and entrepreneurship held for university members.

Startup Projects Incubated



8 Research-based projects supported through the IEC Business Incubator, from an Idea to a Product

Ultimate Innovation Program



60 Graduates of the Ultimate Innovation Program, trained in innovation and design thinking

Innovation Bridge

Innovation Bridge is a digital innovation and entrepreneurship platform that connects RDI moonshot participants, entrepreneurs, innovators, students, and researchers with partners, companies, and supporting entities to accelerate collaboration and commercialization. After signing up, users can complete and strengthen their profile (personal information, academic record, documents, and external links) to improve visibility and matching accuracy.

The platform enables users to publish and manage initiatives across multiple tracks, such as Idea, Project, Research, and Challenge, upload attachments (e.g., prototypes, pitch decks, technical documents), and present innovative solutions and products to attract partners, investors, and funders for commercialization (piloting, scaling, licensing, and market adoption). In addition, partners and companies can post real challenges and needs, and users can respond by proposing solutions and forming collaborative pathways to implement them.

Innovation Bridge also supports engagement with ongoing projects, including projects that may be funded or actively running, where users can request to join a project team based on interest and qualifications. To further accelerate collaboration, the platform provides AI-enabled matching and nomination, recommending and nominating users to enroll in specific projects or initiatives that best match their skills, expertise, and profile. Furthermore, users can register patents (including ownership, technical description, status, and patent office details) and link them to related initiatives to support IP commercialization and technology transfer.





Target audiences

Economies of the Future

Energy and Industrial Leadership

Health and Wellness

Sustainable Environment

University Collages

Supporting interdisciplinary collaboration and transforming academic knowledge into innovative solutions and impactful projects.

Research Centers

Providing advanced laboratories, technical expertise, and research infrastructure to support experimentation, prototyping, and technology validation.

Students

Empowering undergraduate and graduate students to transform ideas into innovative projects through capstone work, research activities, and innovation programs.

Industry & Strategic Partners

Collaborating with government entities, industry leaders, and international partners to address real-world challenges and accelerate innovation aligned with national priorities.

Researchers & UT Academic Staff

Engaging researchers, professors, and scholars in developing research-driven innovations, technology solutions, and collaborative projects.

Entrepreneurs & Startups

Supporting entrepreneurs and startup teams in transforming innovative ideas into viable ventures through incubation, mentorship, and commercialization pathways.

Supply of Essential Needs

Why? Innovation Bridge

The Innovation Bridge: Project Platform for Innovative Solutions seeks to address this gap by establishing a practical connection between the university and the government, industry, and non-profit sectors. The platform collects tangible challenges from partners and systematically aligns them with the university's mission and national priorities. Utilizing analytical tools and artificial intelligence, it subsequently matches the challenge requirements with the competencies of students and researchers to create interdisciplinary teams. These teams participate in a brief introductory program, develop a measurable implementation plan, and engage in collaborative evaluation. These pathways ensure post-graduation sustainability through incubation, pilot projects, technology transfer, and intellectual property management. Consequently, graduation projects acquire a distinct applied dimension, transforming them into viable solutions that enhance the university's impact, address national priorities, and create career, research, and future leadership opportunities for students.

User Interface

Individuals Entities

Sign Up

Individuals

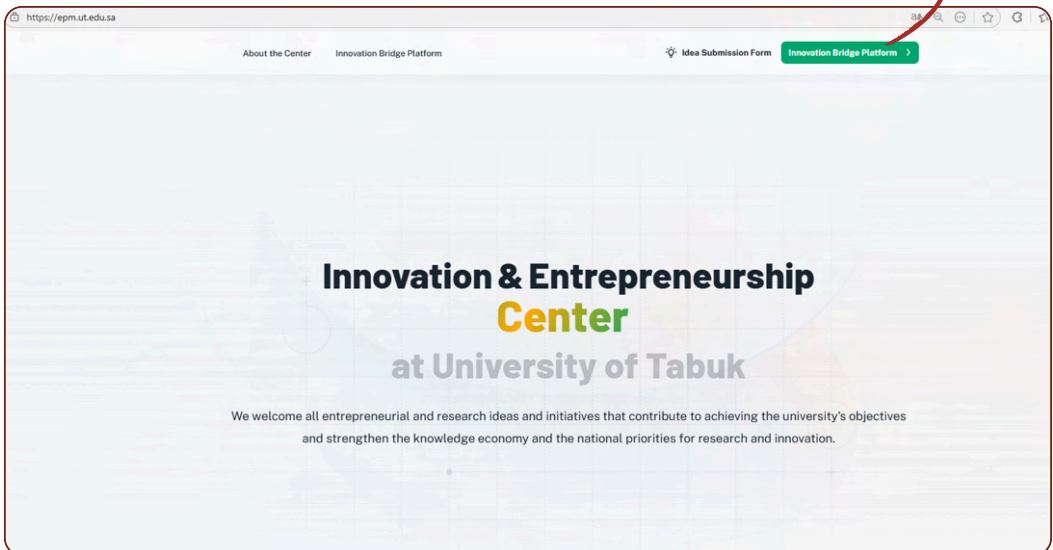
Email

Password

☐ I acknowledge that I have read
Non-Disclosure Agreement (NDA) and I agree to be
bound by it.

Sign Up

Already have an account? [Sign In](#)



“Homepage introducing UT’s Innovation & Entrepreneurship Center and providing quick access to the Innovation Bridge Platform, Idea Submission, and user sign-up/sign-in.” <https://epm.ut.edu.sa>

The Innovation Bridge homepage (Innovation & Entrepreneurship Center – University of Tabuk) serves as the main entry point for users to access the platform and explore its services. The page presents a clear introduction to the Center’s mission, welcoming entrepreneurial and research ideas and initiatives.

From the top navigation bar, visitors can quickly access key sections such as About the Center, Innovation Bridge Platform, and the Idea Submission Form. A prominent call-to-action button (“Innovation Bridge Platform”) directs users to the platform access page, where new participants can sign up (create an account using email and password) and existing users can sign in to start publishing initiatives, engaging with challenges, and participating in collaboration opportunities.

This screen shows the initiative submission form where entrepreneurs and participants can publish an innovative solution/product (Idea/Project/Research/Challenge/Patent). Users enter a bilingual Title and Description, define Objectives and Expected Results, select the target group, and upload attachments (pitch, prototype, research, visuals). This structured submission helps present initiatives in a way that attracts partners and investors and supports commercialization readiness. RDI moonshot participants can present their initiatives clearly and professionally to attract partners and supporting entities.

Structured bilingual form for submitting initiatives

“Entrepreneurs can complete their profiles, publish solutions/products, seek partners/investors for commercialization, and request support—powered by AI matching.”

This screen shows the Innovation Bridge main dashboard that users access after signing up. After the first sign-in, the participant can complete and enrich their Profile by adding more personal information, academic record, documents (e.g., CV and official documents), and external links, ensuring credibility and improving matching accuracy. From the same dashboard, the participant can add initiatives (ideas/projects/research/challenges) to showcase work for commercialization, partnerships, and potential investors/funders. In addition, users can submit contribution requests when they need help on a project; the platform's AI-based recommendation/matching can nominate relevant people who are well-suited to support the initiative (based on skills, interests, and expertise).

This screen shows the Add Patent workflow, allowing users to enter Patent Identity (title), select Patent Type (Invention/Utility Model/Industrial Design), set Patent Status (Idea/File/Published/Granted), and select the Patent Office (e.g., SAIP, USPTO, EPO, WIPO, or other). It also includes sections for Inventor & Ownership, Technical Patent Description, Project and Platform Linking (linking the patent to related projects/research), Legal Confirmation & Visibility, Attachments. RDI moonshot participants who have patents and want to pursue commercialization, licensing, and partnerships.

Patent Identity
Basic identification information for the patent.

Patent Title

Patent Type
☐ Invention
☐ Utility Model
☐ Industrial Design

Patent Status
☐ Idea
☐ Filed
☐ Published
☐ Granted

Patent Office
☐ Saudi Authority for Intellectual Property (SAIP)
☐ United States Patent and Trademark Office (USPTO)
☐ European Patent Office (EPO)
☐ World Intellectual Property Organization (WIPO)
☐ Other

Inventor and Ownership
Information about the inventors and intellectual property rights holder.

Technical Patent Description
Technical description, field, and proposed solution for the invention.

Project and Platform Linking
Link the patent to relevant projects and research centers.

Legal Confirmation and Visibility
Legal declarations and disclosure and visibility settings.

Additional Information
Additional commercial information, market size, and partners.

Attachments
Attach supporting documents and files for the patent.

Add Patent

Patent submission module

Recommended Initiatives **Added Initiatives** **Contribution Requests** **Provided Patents**

Suggest an initiative
Share your ideas and new initiatives to stimulate discussion and creativity

Suggest an Initiative **Add Patent**

All Initiatives **Idea** **Project** **Research** **Challenge** **Patent**

#310 **Published** **Idea** **خفايا والمشاريع** مع مرافقة عند إمكانية إزدياد القيداء كذا الإجراء يندرج النظام التوجيه الحق للحدود عبر إنشاء نوعية أو لوحات رقمية مع تحكم مركزي وكرات أمن للعمل بكافة في البيانات البينجدمع بها يساهم في تقليل الإجراء الإداري وتحسين إمكانية الحركة...

#281 **Published** **Project** **...البثاقة** التسمية لدعم التشغيل والإدارة وإحياءات المستخدم ويشمل المشروع إمكانية متابعة صحة فكرة غير مؤتمرات حيوية كمرسب للمستخدم أو عدم الرضاها بهدف تحسين جودة المعراء وتقليل المخاطر الصحية وتمكين مشاركة أكثر فاعلية في المجتمع...

#280 **Published** **Project** **...على** سرعة اتخاذ القرار ووضع كفاءة توزيع الموارد. يتضمن المشروع تطوير كامل متبادلا مع المصناعات الوطنية والقنوات الرامية (مثل أثير عدد نواير القدراتات والتكامل اوسمي) لتقلية تجربة الخدمات، وتعزيز الأمن والجودة، ودعم مساهمات ريادة السعودية 2030

#287 **Published** **Project** **This project explores hydrogen as a clean, reliable energy backbone for next-generation smart cities. It reviews leading applications and proposes a practical concept to demonstrate how hydrogen can supp...**

#262 **Published** **Idea** **محصنة** فكرة تمكن أعضاء هيئة التدريس من تصميم تعلم مخصصة لطبيعة الدراسات العليا مع متابعة وتحليل التقدم بشكل يساعد على تشكيل بنات تعليمية تراعي الفروق الفردية وتمنح الإبداع والتفاني وتدعم الاستدامة التعليمية وجودة المخرجات

Rows per page: 5 Page: 1 | 18 الصفوف: < >

Profile **Edi**

Personal Information
Click here to fill in your personal information.

Academic Record
Degrees and Academic Qualifications
Add Academic Record

Documents
Resume and Official Documents
Add Document

Links
External Accounts and Links
Add Link

“Entrepreneurs can complete their profiles, publish solutions/products, seek partners/investors for commercialization, and request support—powered by AI matching.”

This screen shows the Innovation Bridge main dashboard that users access after signing up. After the first sign-in, the participant can complete and enrich their Profile by adding more personal information, academic record, documents (e.g., CV and official documents), and external links, ensuring credibility and improving matching accuracy. From the same dashboard, the participant can add initiatives (ideas/projects/research/challenges) to showcase work for commercialization, partnerships, and potential investors/funders. In addition, users can submit contribution requests when they need help on a project; the platform’s AI-based recommendation/matching can nominate relevant people who are well-suited to support the initiative (based on skills, interests, and expertise).

Impactful Projects

Quality of life and Medical Technology



Environmental Technology



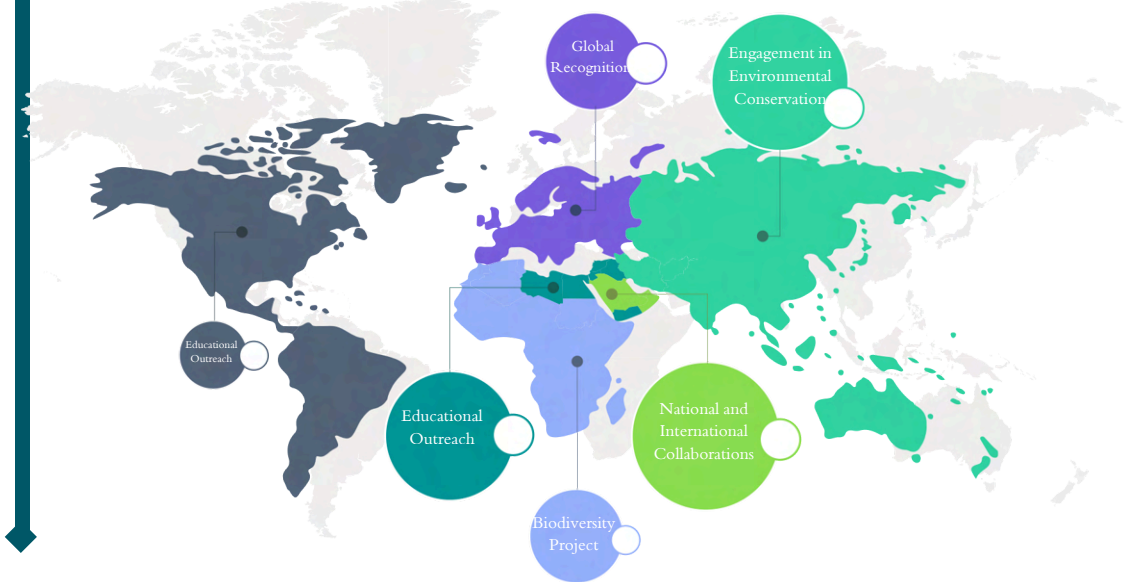
Future Economics

11 patents exploring economic sustainability in the context of Vision 2030

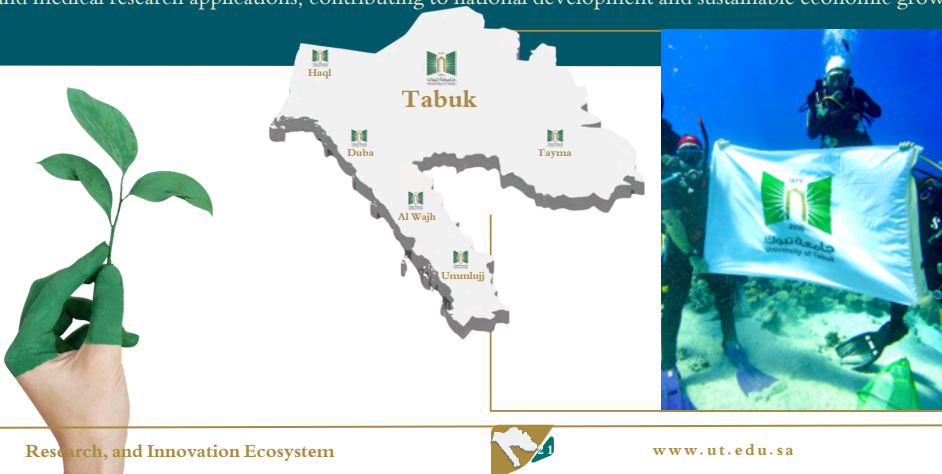
6 patents awarded in 2024, including innovations in environmental and water-related technologies.



Community and Regional Impact



- Collaborations with the King Salman Royal Reserve Development Authority
- Biodiversity workshops focusing on regional flora and fauna
- Programs designed to train the next generation of sustainability leaders “Ultimate Innovation”, this program provides an Integration of sustainability themes into undergraduate and postgraduate curricula.
- Partnered with national and global institutions to address shared challenges in sustainable agriculture and water conservation.
- Several projects focus on water sustainability and environmental technologies, including collaborations with the Saudi Water Authority and international research institutions to develop advanced filtration technologies, mineral recovery processes, and wastewater treatment solutions.
- Research initiatives also support the development of innovative materials, environmental monitoring technologies, and medical research applications, contributing to national development and sustainable economic growth.



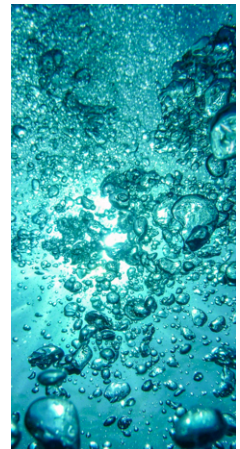
Supporting Innovation with Patentability Analysis

At the University of Tabuk, we prioritize research that leads to innovative and commercially viable solutions. To support this, we utilize tools such as Clarivate patentability analysis reports to evaluate and enhance our projects' potential for securing patents.

Research Achievements and Publications

Desalination and Water Research

- 1,000+ active researchers across multiple disciplines
- 180+ active research groups supporting interdisciplinary research
- External research funding exceeding SAR 32 million in 2025
- More than 2,600 research publications produced in 2025



Agriculture and IoT Research

Achievements at the Geneva International Exhibition of Inventions

UAV-Assisted Dynamic Clustering for Crop Health Monitoring.

Sensor Networks for Sustainable Development (CRC Press).

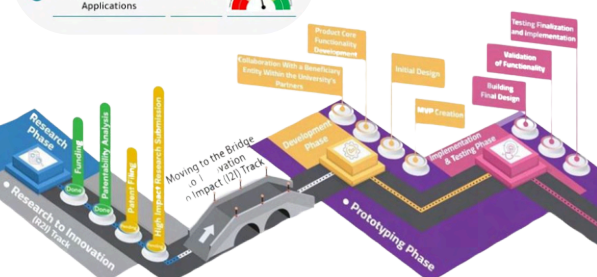


Third Quarter Progress of the Year 2025 for the Patentability Analysis Reports by Clarivate for Research Funded within the Research to Innovation (R2I) Track

Funded Research Group Name	Patentability Analysis Report	Clarivate Analytics Results of the Patentability Analysis Report from Clarivate
1 Energy Storage Group(1)	done ✓	
2 Energy Storage Group(2)	done ✓	
3 Energy Storage Group(3)	done ✓	
4 Green Energy	done ✓	
5 Nanotechnology for the Treatment of Skin Aging	done ✓	
6 Polymer Dressings for the Treatment of Diabetic Wounds	done ✓	
7 Biologically Active Materials for Industrial Applications	done ✓	

Fourth Quarter Progress of the Year 2025 for the Patentability Analysis Reports by Clarivate for Research Funded within the Research to Innovation (R2I) Track

Funded Research Group Name	Patentability Analysis Report	Clarivate Analytics Results of the Patentability Analysis Report from Clarivate
1 Water treatment	done ✓	
2 Smart materials	done ✓	
3 Electrical Drives & Renewable Energy control	done ✓	



Major Joint Projects in 2024 – 2025



صندوق البيئة
Environment Fund
الهيئة العامة للغذاء والدواء



وزارة البيئة والمياه والزراعة
Ministry of Environment, Water & Agriculture



نيوم، NEOM



الهيئة السعودية للمياه
Saudi Water Authority



University of Sheffield



University of Murcia



البحر الأحمر الدولية
Red Sea Global



الهيئة السعودية للمواصفات والمقاييس والجودة
Saudi Standards, Metrology and Quality Org.



إمارة منطقة تبوك
Municipality Of Tabuk



中国科学院
CHINESE ACADEMY OF SCIENCES



OHIO
UNIVERSITY



The University of Nottingham



وقاية
Weqaya



مزارع أسترا
ASTRA FARMS



مدينة الملك عبدالعزيز
للعلم، والتقنية KACST



المركز الوطني
للتنمية الصحية
Ministry of Health



وزارة الصحة
Ministry of Health



محمية الأمير
محمد بن سلمان
Saudi Food & Drug Authority



هيئة الغذاء والدواء
Saudi Food & Drug Authority



Teesside University



استدامة
Estidamah



المركز الوطني
للتنمية الصحية
Saudi Food & Drug Authority



المركز الوطني
للتنمية الصحية
Saudi Food & Drug Authority



الهيئة العامة للغذاء والدواء
Saudi Food & Drug Authority



جامعة الأمير سعود بن عبدالعزيز
Amir Saud bin Abdulaziz University

University Partners

Project Title



البحر الأحمر الدولية
Red Sea Global

Enhancement of microalgae high-value products and developing microalgae-mediated nanomaterials



نيوم, NEOM

Proactive Risk Management through Improved Cyber Situational Awareness



مزارع أسترا
ASTRA FARMS

New generation of fertilizers improves agriculture technology and reduce the amount of time and resources needed to grow crops



نيوم, NEOM

Optimization of Lattice-Based Post-Quantum Cryptography and Engineering for Secure Digital Communications



نيوم, NEOM

User Privacy and Security Concerns in the Smart City



الهيئة السعودية للمواصفات والمقاييس والجودة
Saudi Standards, Metrology and Quality Org.

Developing and manufacturing eco-friendly and sustainable road marking paints



البحر الأحمر الدولية
Red Sea Global

Conservation of Coral Reef by Smart Manipulation and Adaptation with Probiotic Microbiome in Red Sea Environment



البحر الأحمر الدولية
Red Sea Global

Development of Conservation Strategies for the Selected Flora of Tabuk Region



البحر الأحمر الدولية
Red Sea Global

Patterns of dune vegetation on Amaala Coast to inform prospective restoration practice



الهيئة السعودية للمياه
Saudi Water Authority

Future desalination technologies

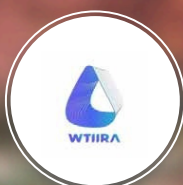
Project Title

Impact of Human-Induced Pollutants on Ecosystems and Wildlife in the Red Sea and AMAALA Projects: An Ecotoxicological Approach



Project Title

Separation of Mg^{2+} from Ca^{2+} in a Concentrated Solution Using Chelating Columns



Project Title

Development of an Anti-Biofouling Coating for Membranes Used in Water Desalination and Treatment, Fully Funded by the Saudi Water Authority



Project Title

Modeling the Integrity of Cement-Lined Pipelines, Fully Funded by the Saudi Water Authority



University of Tabuk – University of British Columbia



Collaboration Tracks

- ★ Two joint research projects and a targeted scholarship program for four teaching assistants and lecturers to pursue their PhD studies within the ongoing collaborative research projects between the two institutions.

Project 1

Optimization Modeling and Data Analytics

- Joint Academic Programs Track
- Academic and Short term Program Track
- PhD Program in Computer Science

Project 2

Process Mining for Supply Chain

University of Tabuk – University of Murcia (Spain) – Red Sea Global



Collaboration Tracks

★ Projects Titles

- Development of Conservation Strategies for the Selected Flora of Tabuk Region
- Patterns of dune vegetation on Amaala Coast to inform prospective restoration practice
- Enhancement of microalgae high-value products and developing microalgae-mediated nanomaterials
- Conservation of Coral Reef by Smart Manipulation and Adaptation with Probiotic Microbiome in Red Sea Environment
- Biomonitoring of Environmental Contaminants in the Northern Red Sea
- Visiting Professor/Researcher Track – International Partnership Track to Serve a Local Beneficiary
- A professor from the University of Murcia in Spain was recruited as a visiting researcher specialized in environmental and biotechnological technologies to collaborate on research projects with teams from the University of Tabuk and Red Sea Global. This collaboration aims to advance joint research initiatives in the fields of environmental sustainability and marine ecosystems.



Collaboration Tracks

- ★ Five research projects have been implemented in collaboration with international institutions to address local needs and challenges. These projects aim to provide scientific solutions and applied research outcomes that benefit local stakeholders in areas such as sustainability, water, and environmental technologies.



Modeling of the Integrity of Cement Lined Pipelines

Ongoing Project in Collaboration with Ohio University (USA)



Separation and recovery of calcium and magnesium ions from concentrated brine.

Ongoing Project in Collaboration with the University of Sheffield (UK)



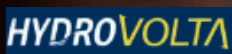
Selective recover magnesium sulfate from Nanofiltration NF reject and/or potassium chloride from monovalent concentrated brine using eutectic freeze crystallization (EFC) techniques.

Ongoing Project with Cool Separations (Netherlands)



Assess MolyMem's nanofiltration NF ceramic membrane technology for Removing of chemical compounds from domestic and industrial wastewater streams

Ongoing Project with MolyMem Ltd (UK)



High Selectivity Magnesium Recovery from Pre-Treated Seawater using nanofiltration NF-SonixED-SonixED approach.

Ongoing Project with Hydrovolta (Belgium)



Collaboration Tracks

- ★ The Renewable Energy and Environmental Technology Center at the University of Tabuk is currently conducting three joint research projects in collaboration with Teesside University (United Kingdom). The project titles are as follows:

- Using Image Processing technique to enhance the performance of solar panels
- Smart Cities Get Smarter: User- Empowered Ambience Intelligence System for Improved Energy and Water Efficiency
- Production of Green Hydrogen from Sea Water by Using Nano-Photocatalyst Based on Metal Oxides

★ Targeted Scholarship

- A faculty member from the University of Tabuk has been awarded a targeted scholarship in the field of Computer Science to work on one of the ongoing collaborative research projects.

★ Joint Programs Track

- Work has begun on the establishment of a joint center between the two universities, specializing in the priority areas and research identity of the Renewable Energy and Environmental Technology Center. The center will be known as the Net Zero Innovation Hub, focusing on cutting-edge solutions to support environmental sustainability and clean energy transitions.

★ Visiting Professor/Researcher Track

- A renewable energy research expert from Teesside University (UK) has been invited to the University of Tabuk as a visiting scholar to undertake a range of research, academic, and training activities.

University of Tabuk – University of Nottingham (United Kingdom)



Collaboration Tracks

- Establishing Building Energy Benchmarking profile for Saudi Residential Building Stock based on Saudi Building Code

University of Tabuk — King Salman University (Egypt)



Collaboration Tracks

★ Projects Titles

- Study the spatial distribution of plankton and benthic algae in the northern Red Sea in response to gradual change of environmental factors and environmental impacts on coral communities.
- Advanced solar panel cleaning system.
- Discovery and Development of Novel Small Molecule Inhibitors against Polymicrobial biofilms using Green Chemistry Approaches .
- New generation of fertilizers improve agriculture technology and reduce the amount of time and resources needed to grow crops.

★ Student Exchange / Training Track

- A comprehensive theoretical and practical training program was delivered to 20 students from the College of Tourism and Hospitality at the University of Tabuk. The training was conducted in partnership with King Salman University and hosted by major hotels in Egypt.

University of Tabuk — Jordan University of Science and Technology



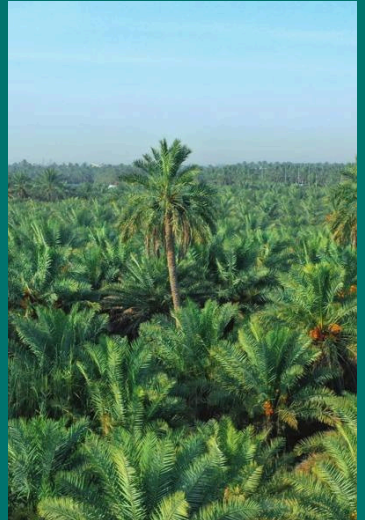
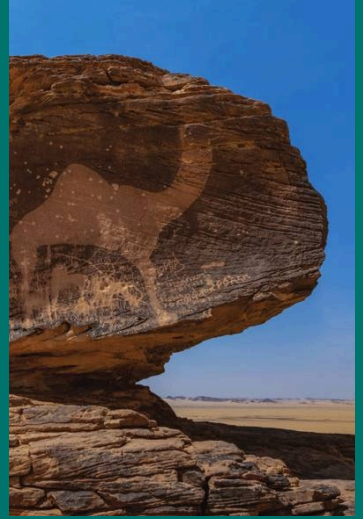
Joint Research Projects

University of Tabuk — Monash University (Australia)



A collaborative initiative is underway to support the development of medical curricula at the College of Medicine, University of Tabuk

Sample of On-Going Projects 2024-2025



Nano biosensors for Pesticide Detection towards Smart Agriculture

Fabrication of Nano Biosensors for the detection of hazardous pesticides in ppb level

Knowledge Partners

- ★ Research fraternity across the Kingdom
- ★ Ministry of Agriculture
- ★ Industries related to agricultural sector and smart farming
- ★ Industries related to Sustainable Environment

Palm Waste Fibers for Energy Storage

Knowledge Partners

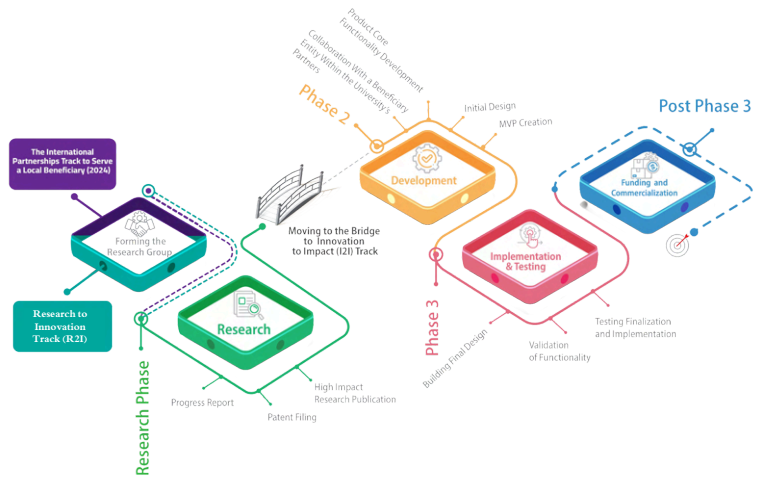
- ★ King Abdullah University of Science and Technology (KAUST)
- ★ Saudi Aramco's Research and Development Center
- ★ Saudi Energy Efficiency Center (SEEC)

Revolutionizing Wastewater Treatment with Electrocoagulation and Magnetic Settling Technology

Harnessing the Power of Electrocoagulation and Magnetism for Advanced Wastewater Treatment

Knowledge Partners

- ★ Advancement of Research
- ★ Commercialization and Application
- ★ Policy and Standard Development



Join Us in Our Journey



Join us as a
Visitor
Researcher



List of Active
Research Groups



Funded Research
Groups 2023





Thank
You

