







Industry,
Innovation
and
Infrastructure

## INDUSTRY, INNOVATION AND INFRASTRUCTURE

Prince Sultan University has been encouraging faculty members to establish external collaborations with academic and industrial partners, and currently there are several on-going collaborations. In addition, to support innovation PSU has been sponsoring patents applications. There are two published patents, and six more patents have been submitted in collaboration with Oblon patent office for application as patents in the US patent office and they are now under evaluation.

Sustainable Development Goal 9 (SDG 9) focuses on building resilient infrastructure, promoting inclusive and sustainable industrialization, and fostering innovation. PSU has played a significant role in contributing to and reporting on SDG 9.

In summary, PSU has played a crucial role in advancing SDG 9 and has contributed to reporting on the progress toward achieving this goal through its research, education, innovation, partnerships, and advocacy efforts. By actively engaging with SDG 9-related activities and sharing its experiences, PSU has helped drive sustainable industrialization, resilient infrastructure development, and innovation.



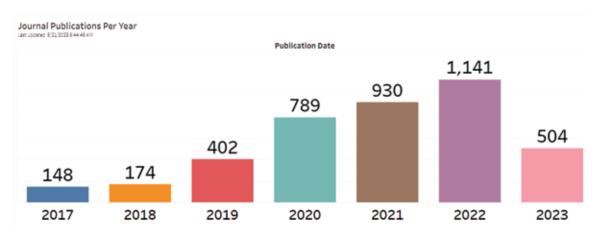




#### **Research and Innovation**

Research at PSU has focused on developing innovative technologies and solutions that promote sustainable industrialization and infrastructure development. These research findings, technological advancements, and innovations have contributed toward SDG 9 achievement by PSU.











## **Education and Capacity Building**

PSU offers educational programs and courses related to industrialization, infrastructure development, and innovation.

01

Program and Courses offered by the College of Architecture and Design

01. B.S in Architecture

02. B.S in Interior Design

02

# Program and Courses offered by the College of Engineering

01. B.S in Civil and Environmental Engineering

02. B.S in Production & Manufacture Engineering

03. B.S in Construction Engineering

## **Partnerships**

PSU collaborates with industry, government agencies, and international organizations to drive innovation and infrastructure development.

## **Hatch Product Co. visit by Students**

In accordance with PSU Strategic Plan Theme 4: Outreach, Marketing, and Partnerships and in alignment with cooperation between the university and the parties benefiting from community service represented by submitting suggestions and designs for pieces of furniture to contribute to the development of Saudi industries from the outputs of the College of Architecture and Design and in accordance with SDGs, this suggestion belongs to SDG 9: Industry, Innovation, and Infrastructure. This will meet also the 2030 vision in local Saudi industries. We would like to share and consult on furniture designs for new furniture collections.













## Recent developments in high voltage transmission and capabilities of GCC electrical testing laboratory

Renewable energy lab in the college of engineering is organizing a webinar in collaboration with GCC electrical testing laboratory about the services provided by the GCC electrical testing laboratory as a third party for failure investigation and arbitration.











#### International Webinar on Recent developments in high voltage transmission and Capabilities of GCC Electrical Testing Laboratory

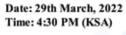


GCC Electrical Testing Laboratory will be a world class Electrical Product Testing and Services Hub in the GCC and MENA region, Independent authority for testing and certificating High-Voltage, Medium-Voltage and Low-Voltage electrical equipment, Act as a third party for failure investigations and arbitration, provide Low Voltage calibration services for electrical equipment and testing tools and certification courses for engineers and technicians.



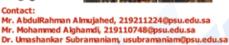
DR. VASUDEV NAGARAJU











Mr. Mohammed Alghamdi, 219110748@psu.edu.sa Dr. Umashankar Subramaniam, usubramaniam@psu.edu.sa Dr. Mahajan Sagar Bhaskar, smahajan@psu.edu.sa

Dr. Dhafer Almakhles, dalmakhles@psu.edu.sa Eng. Sivakumar Selvam, sselvam@psu.edu.sa



## **Technology Transfer**

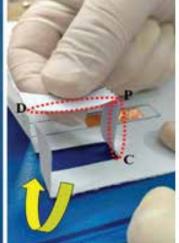
PSU is engaged in technology transfer activities, facilitating the adoption of sustainable technologies by industries.

## Smart Systems Engineering Laboratory at the College of Engineering Designed Revolutionary Antennas for Cancer Detection, Wearable **IOT Healthcare, 5G, and WI-FI Applications**

Innovative designs for antenna systems have been successfully designed by the leader of smart systems engineering laboratory, Professor Mohamed Marey. It is a collaborative effort involving research centers in France, Italy, Germany, UK, Pakistan, Egypt, and India. Cancer detection, wearable internet of things healthcare, 5G cellular networks, and wireless local area networks have all been primary focuses of these designs.













# Basic Switches & End Devices connectivity, configurations and implementation using packet Tracer

In this Workshop, Students will learn and perform basic switches and routers configuration tasks. Students will secure access to the command-line interface (CLI) and console ports using encrypted and plain text passwords.



### **Workshop on cisco packet tracer and Wireshark**

The Smart Systems Engineering Laboratory in the College of Engineering is organizing a two-day training course for electrical engineering and computer science students. The training course is on the use of Cisco packet tracer software as well as Wireshark software. This course will deepen students' understanding of networking and communication and explains how to use these tools in analyzing and understanding networking.













## **Research Funding**

PSU report on the allocation of research funding to projects and initiatives that align with SDG 9. This includes grants and investments in infrastructure-related research.

Experimental Study of Durability and Mechanical Properties of Concrete with Recycled Concrete Aggregate and Fly Ash

Engineering Management, Construction Management Program, SEED PROJECT, CE, Yasser Mansour, Ihab Katar, Shabir Khahro, Mohammed Abdul Malik, Dec 2020

Design of composite energy absorption devises for automotive applications: Experimental study on the effect of the working environmental conditions of GCC area, Engineering Management, SEED PROJECT, CE, Tamer Sebaey, Feb 2021

Cost Efficient Road Condition Assessment Approach for Developing Countries, Engineering Management, Construction Management Program, SEED PROJECT, CE, Shabir Hussain, Zubair Ahmed Memon, Yasir Javed, Sep 2021

Sustainability at the Workplace: Occupants' Satisfaction with Indoor Environmental Quality in LEED and Non- LEED Certified Higher Education Buildings, Architecture Department, SEED PROJECT, CH, ERL LAB, Hala Sirror, Wafa Labib, Connie Mitchell, Eman Abowardah and Walaa Metwally, 2021

Production and mechanical characterization of wood/polymer composites for the sustainability of kingdom resources Engineering Management, SEED PROJECT, CE, S&M Lab, Muneer Baig, Abdulhakim Almajid, Abdul Aabid, Bandar Almeshari and Mohammad Abdulmalik, 2021

Intelligent Communication Networks, Communications and Networks Engineering, SEED PROJECT, CE, Maged Esmail, Mohamed Marey and Moustafa Nasralla, 2021

A rooftop PV fed grid-tied system, Communications and Networks Engineering, SEED PROJECT, CE, REL LAB, Dhafer Almakhles, Jagabr Ali and Sivakumar Selvam, 2022

HERITAGE PRESERVATION AND REUSE: USHAIGER HERITAGE VILLAGE, A CASE STUD, Architecture, SEED PROJECT, CAD, Silvia Mazzetto and Fiorella Vanini, Apr 2022

Development and characterization of sustainable natural fiber-based textile green/bio-composites, Engineering Management, SEED PROJECT, CE, Hassan Mehboob, Yasir Nawab and Raja Muhammad Waseem Ullah Khan, June 2022.

Development of Power Converters for Micro Grid System Communications and Networks Engineering, SEED PROJECT, CE, REL LAB, Sagar Bhaskar Mahajan, Umashankar Subramaniam, Dhafer Almakhles and Sivakumar Selvam, June 2022

Optimum Composite Stacking Sequence for Sustainable Energy Transportation Pipelines, Engineering Management, SEED PROJECT, CE, S&M Lab, Tamer Sebaey, 2022

DESIGN OPTIMIZATION OF A HYBRID VIBRATION CONTROL SYSTEM FOR BUILDINGS STRUCTURES, Structural Engineering, SEED PROJECT, CE, S&M Lab, Mansour Yasser Mansour, Gebrail BekdaŞ, Sinan Melih Nİgdelİ, Aylin Ece Kayabekİr, Basel Salaas and Mohamed Ezzat, 2022.

Micro Grid Energy Management System and EV Charging Infrastructure Construction, Management Engineering, SEED PROJECT, CE, REL LAB, Umashankar Subramaniam, Sagar Bhaskar Mahajan, Dhafer Almakhles and Sivakumar Selvam, 2022

Modified ACI 544 2R drop-weight testing procedure using U-shaped drop-weight impact test (USDWIT): Evaluation of concrete impact resistance performance, Engineering Management, CE, Musa Adamu, Yasser Mansour, Han Zhu and Sadi I Haruna, 2023







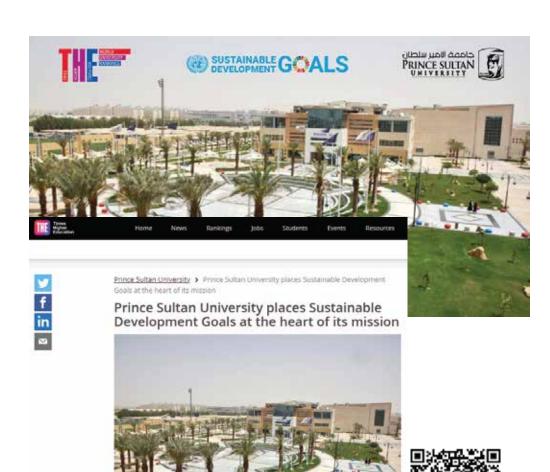
## **Infrastructure Sustainability**

PSU assesses the sustainability of its own infrastructure, such as campus buildings and facilities. These efforts are to reduce energy consumption, increase resource efficiency, and minimize environmental impact.

PSU College of Architecture and Design: built with sustainability at its heart



Prince Sultan University in Saudi Arabia has been taking impactful steps towards achieving the UN's SDGs, and has the kingdom's own Vision 2030 in its sights











## **PSU's commitment to SDG 2030**

## **Mission**

PSU is committed to United Nations Sustainable Development Goals (SDGs) through effective institutional resource management, innovative teaching and learning, research, national and international partnerships, continuous studies, and outreach. PSU shall undertake the following activities: form higher and steering committees, evaluate each SDG, formulate and develop related SDG policies, conduct awareness campaigns to the PSU community, establish a sustainability office, identify the SDGs related to each college, program, and course, and lab centers at PSU, and implement sustainability-related initiatives.

## **Vision**

Prince Sultan University strives to support Saudi Arabia's Vision 2030 and the United Nations Sustainable Development Goals (SDGs) by paving the way for higher education in KSA and Middle East.

### **Mission**

Supporting the Saudi Arabia's Vision 2030 and the PSU's strategic directions, PSU aligns its mission with SDGs by providing quality education, sustainability initiatives, lifelong learning, scientific research, and community service





P.O. Box No. 66833, Rafha Street, Riyadh 11586, Saudi Arabia.

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