

Sustainable Development Report 2020

# Industry, Innovation and Infrastructure





Conferences organized by PSU



**The First International Conference on Artificial Intelligence and Data Analytics (CAIDA 2021)**  
 April 6-7, 2021, Online Conference  
 Prince Sultan University, Riyadh, Saudi Arabia



**1<sup>st</sup> International Symposium on APPLIED LINGUISTICS RESEARCH (ALR2020)**  
 November 7, 2020

**Keynote Speakers**

- Prof. Christina Olszewski, Middle Tennessee State University, USA
- Prof. Herbert Schmitt, University of Hamburg, Germany
- Prof. Saeed Alshamir, University of Al-Qadisiyah, Iraq

**SMARTTECH2022**

**THE SECOND INTERNATIONAL CONFERENCE OF SMART SYSTEMS & EMERGING TECHNOLOGIES**

22-24 MAY 2022 PRINCE SULTAN UNIVERSITY RIYADH, SAUDI ARABIA

**TRACKS**

- Artificial Intelligence
- Internet-of-Things
- Emerging Technologies
- Unmanned Systems
- Communication & Networking
- Cyber-Security

**KEYNOTE SPEAKERS**

- MONCE GARBOSU, TAMPERE UNIVERSITY, FINLAND
- MUHAMMAD ALI IRANI, UNIVERSITY OF GLASGOW, UNITED KINGDOM
- GIUSEPPE LOIANNI, NEW YORK UNIVERSITY, UNITED STATES
- CHRISTIAN CLAUDEL, UNIVERSITY OF TEXAS AT AUSTIN, UNITED STATES

**GENERAL CHAIRS**

- Anis Koubaa, Prince Sultan University, Saudi Arabia
- Ahmad Taher Azar, Prince Sultan University, Saudi Arabia
- Eric Feron, King Abdullah University of Science & Technology, Saudi Arabia

**PROGRAM CHAIRS**

- Mohamed Abdelkader, Prince Sultan University, Saudi Arabia
- Wadii Boullia, Prince Sultan University, Saudi Arabia
- Adel Ammar, Prince Sultan University, Saudi Arabia
- Muhamad Felemban, King Fahd University of Petroleum & Minerals, Saudi Arabia

**IMPORTANT DATES**

Paper Submission: October 31, 2021  
 Notification of Acceptance: December 31, 2021  
 Camera-ready Papers: January 31, 2022  
 Registration: February 28, 2022  
 Conference Dates: May 22-24, 2022

**LINKS**

Conference Website: <https://smarttech2022.riou-lab.org/>  
 Submission via EasyChair: <https://easychair.org/fnmy/conference/conf-smarttech22>

**CONFERENCE WEBSITE** [QR Code]

**SUBMIT YOUR PAPER HERE** [QR Code]

Robotics & Internet-of-Things | [riou-lab.org](https://riou-lab.org) | [riou@psu.edu.sa](mailto:riou@psu.edu.sa) | +966 (11) 494 8851

**1st GCC International Conference on Industrial Engineering and Operations Management**

NOVEMBER 26-28, 2019  
 Riyadh, Saudi Arabia

Host University: PRINCE SULTAN UNIVERSITY

College of Engineering (CE)

**Organizing Committee**

**Chief Patron**  
 Dr. G. Viswanathan, Chancellor

**Patrons**  
 Shri. Sankar Viswanathan, Vice President  
 Dr. Sekar Viswanathan, Vice President  
 Shri. G. V. Selvam, Vice President  
 Ms. Kadambari S. Viswanathan, Asst. Vice President  
 Dr. Anand A. Samuel, Vice Chancellor  
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**Organizing Chair**  
 Dr. S. Sivabalan, Professor & Dean, School of Electrical Engineering

**Organizing Co-Chair**  
 Dr. P. Arulmozhivarman, Professor, School of Electrical Engineering

**Dr. D. Elangovan**  
 Associate Professor & HOD (EPE), School of Electrical Engineering, Department of Energy and Power Electronics

**Dr. S. Meikandasivam**  
 Professor & HOD (EEE), School of Electrical Engineering, Department of Electrical Engineering

**Conveners**  
 Dr. K. Palanisamy & Dr. R. Siharthan  
 Associate Professor & HOD (EPE), VIT, Vellore, Tamil Nadu, India.  
 e-mail: kpalanisamy@vit.ac.in, siharthan.ri@vit.ac.in  
 Tel: +91 416 220 2467  
 Mobile: +91 9894718270, +91 9976679826

**Virtual Conference on Recent Trends on Renewable Energy, Smart Grid and Electric Vehicle Technologies**  
 9<sup>th</sup> July, 2020  
 Organized by VIT Vellore Institute of Technology  
 School of Electrical Engineering, Vellore Institute of Technology  
 In Association with ALBANO UNIVERSITY, PRINCE SULTAN UNIVERSITY, VICTORIA UNIVERSITY MELBOURNE AUSTRALIA





## MoU with Koncar

The Prince Sultan University is involved in several industrial collaborations that are leading the way in the search for alternative energy sources. One such example comes from our Renewable Energy Lab, who are in cooperation with Koncar Power Plant Electric Traction, Croatia for a collaborative project on microgrids test bench for EV charging and renewable energy in REL at Prince Sultan University.



The focus areas of the sponsors chosen business themes towards Saudi Vision 2030 and United Nations Sustainable Development Goals (SDG7,9, 11). The chosen themes help students, researchers, and faculty to gain the knowledge and experience on new technologies in the clean energy domain.

## MoU with Power and Telecom Technologies Co., KFB Holding Group, Riyadh

The Prince Sultan University is involved in several industrial collaborations that are leading the way in the search for alternative energy sources. One such example comes from our Renewable Energy Lab, who are in cooperation with Power and Telecom Technologies Co., KFB Holding Group, Riyadh for a collaborative consultancy project on investigations on minimizing electricity cost and feasibility study of self-sustainable campus.

The main objective of the project is to study PSU Lighting electricity network to provide Strategic solutions as per the sustainable development goals (SDG 7, 9, 11)

- Benchmarking the energy usage with Solar based LED Lighting
- Implementing stepping stones for the Localization Target within renewable energy based lighting sector in context of the Vision 2030





## MoU with Schneider Electric

The agreement was signed by Dean of the College of Engineering Dr. Abdulkim Almajed, while Schneider Electric Company was represented by the CEO of the company, Eng. Muhammad Shaheen. The agreement aims to support cooperation between the two parties in the fields of energy, automation and digitization, as Schneider Electric, through its global experience in this field, supports the university to benefit from the latest devices and technologies manufactured by Schneider Company. Training students on the latest knowledge, in addition to providing the opportunity to transfer knowledge to students through specialized training programs.



**Schneider**  
Electric

جامعة الأمير سلطان  
**PRINCE SULTAN**  
UNIVERSITY

### Memorandum of Understanding

This memorandum of understanding (MOU) was signed in the city of Riyadh on Tuesday, 21 /02 / 1443 AH, corresponding to 28 /09 / 2021 AD between each of the following:

1. Schneider Electric, Riyadh, Kingdom of Saudi Arabia, address: Al-Raidah Digital City (RDC) Building # IN 01, 1st Floor, PO Box: 89249, Riyadh 11682, Saudi Arabia, represented by Mohamed Shaheen, Cluster President of Saudi Arabia & Yemen, and referred to hereinafter as (first party)
2. Prince Sultan University, Kingdom of Saudi Arabia, Riyadh, Address: Al-Rafha Street, P O Box 66833, 11586, Riyadh 11431, Phone: 4948055, Represented by Dr. Abdulkim Almajed, Dean of Engineering, and hereinafter referred to as (second party), the two parties to the memorandum are collectively referred to as (the two parties).

#### Preamble:

In light of the importance of joint and mutual cooperation in the fields of research and knowledge development between Prince Sultan University and Schneider Electric and in support of our newly established EE program, Schneider Electric is planning to support in establishing Programmable logic controller (PLC systems) center in the smart systems lab located at the college of Engineering. Schneider Electric is one of the leading companies in energy management and Automation around the globe.

This memorandum of understanding came between Prince Sultan University and Schneider Electric to enable each of them to benefit from research and academic cooperation to enhance opportunities for innovation, product development and exchange of experiences.

#### Article one:

The preamble above is an integral part of this memorandum to be read and interpreted.

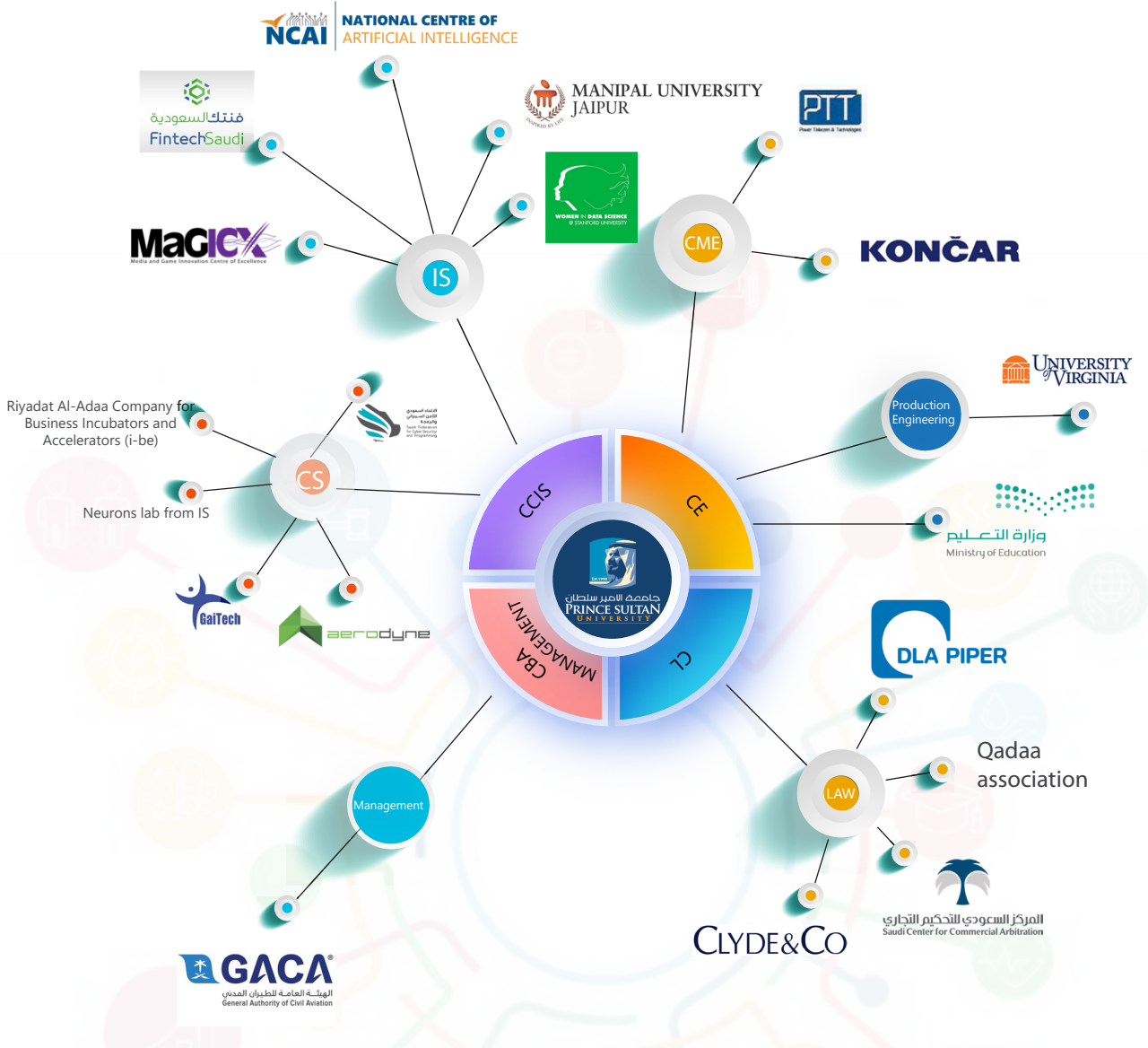
#### Article Two (Objective of the Memorandum):

The general objective of this memorandum is to facilitate cooperation between the two parties without arranging legally binding obligations on the parties, as the two parties will work effectively to push and encourage cooperation between them to establish PLC center. The idea is to expose the student to the latest technology in programming logic controller to help control manufacturing





## Collaboration with external partners



## مبادرة تحدي البحث التقني بالبحث العلمي نبتكر.. لشركات تزدهر

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## Patents

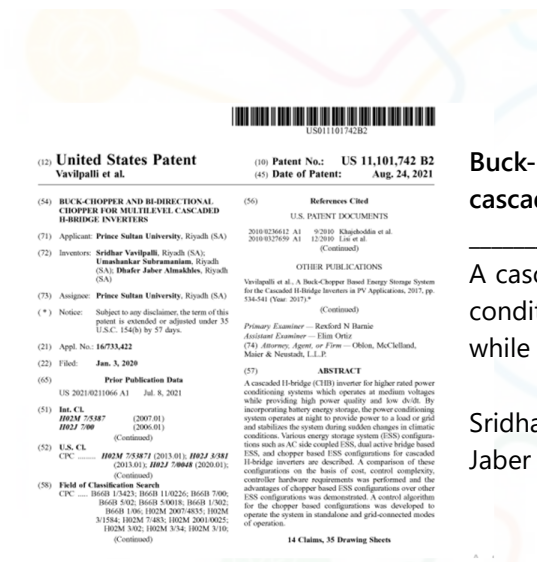
PSU researchers were able to secure two patents, based on individual efforts and collaboration with external researchers, although the ideas were issued by PSU researchers.

### US20210265919A1

#### Microgrid power supply system dc-dc converter and controlling method

A DC-DC voltage converter includes an input circuit, a parallel linked leg (PLL), an output circuit and a controller. The PLL includes an active leg switch, a leg inductor, a leg capacitor and a leg diode.

Mahajan Sagar BHASKAR, Dhafer J. ALMAKHLES, Umashankar SUBRAMANIAM, Sanjeevikumar PADMANABAN, Sakhthivel RATHINASAMY



#### Buck-chopper and bi-directional chopper for multilevel cascaded H-bridge inverters

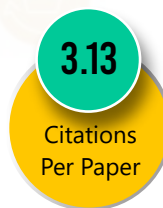
A cascaded H-bridge (CHB) inverter for higher rated power conditioning systems which operates at medium voltages while providing high power quality and low dv/dt.

Sridhar VAVILPALLI, Umashankar SUBRAMANIAM, Dhafer Jaber ALMAKHLES

## Metrics

### Research on Industry, Innovation and Infrastructure

PSU's scholarly publications on Industry, Innovation and Infrastructure so far has 283 views and 3.13 citations per paper.





# SUSTAINABLE DEVELOPMENT GOALS

## PSU's commitment to SDG 2030

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.

جامعة الأمير سلطان  
PRINCE SULTAN  
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P.O. Box No. 66833, Rafha Street, Riyadh 11586,  
Saudi Arabia.