

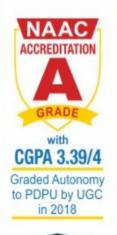
NAAC Accreditation with "A" Grade & CGPA of 3.39 out of 4.00



# Newsletter July-Dec 2021

Department of Electrical Engineering





# **Editorial Team**

# **Faculty Coordinator**

Dr. Alok Jain- Assistant Professor

Dr. Meera Karamta-Assistant Professor

**Staff Coordinator** 

Mr. Jayesh Patel-Executive

Website: http://sot.pdpu.ac.in/electrical-dept.html







From the Director
School of
Technology *Prof.*Sunil Khanna

Cheerful greetings to all our alumni and friends from the electrical engineering department at Pandit Deendayal Petroleum University (PDPU) Gandhinagar - our wonderland of technology development and engineering education. I am pleased to bring you the second edition of the Electrical departmental newsletter, **The Circuit**, describing many of the departmental activities and accomplishments since January 2020 until today.

It has been very interesting semester at PDPU, as we have been engaged in searches of new faculty members in line with the students achieving higher numbers in gaining industrial placements and opting for higher studies. Meanwhile, the Electrical department continues to do what we do best: carrying out exciting research and preparing the next generation of electrical engineers to enter the workforce. Since its inception, the department has strived hard to comply with the University's vision of imparting world-class education in the field of Energy Engineering and Management. I extend my warms wishes to the department and welcome you to The Circuit.



From the Head Electrical Engineering *Dr. Praghnesh Bhatt* 

It gives me immense pleasure and joy to introduce you to another edition of our departmental newsletter: The Circuit. The contents of the letter have been bifurcated into two major sections: (1) Faculty News: faculty visits to other organizations, invited delivered. scientific talks, lectures breakthroughs in terms of publications have been highlighted; and (2) Student Spotlight: as the name suggests, brings achievements forth the all accomplishments of the students, prizes won, participatory events, projects under execution, The Department etc. Electrical Engineering (EED) was established in 2010 since the inception of School of Technology, PDPU. EED offers B. Tech., M. Tech. with specialization in power systems and Ph.D. programs. The department has state-of-art laboratories with modern equipment and software package so that the students have better opportunity to learn practical aspects of engineering problems.

If you see anything in **The Circuit** that strikes a chord, please feel free to call or drop me a line at - <eehod@sot.pdpu.ac.in>.

### PDPU's VISION:

To be an internationally renowned & respected institution imparting excellent education & training based upon the foundation of futuristic research & innovations.

### PDPU'S MISSION:

- 1. Undertake unique obligation for education in energy engineering and management with special responsibilities in domain specific aspects of energy & infrastructure.
- 2. Seek to nurture students of extraordinary motivation and ability and prepare them for lifelong learning and leadership in an increasingly knowledge driven world.
- 3. Envisage to establish institutes of excellence in education, competitive edge in research and real time relevance with futuristic thrusts in offering of programmes and undertaking of activities and projects.

### SoT's VISION:

To be an internationally renowned and recognized institute imparting technical education, research & training for societal impact and sustainable development.

### SoT's MISSION:

- 1. Undertake unique obligation for education in energy and engineering with special responsibilities in domain specific aspects of energy & infrastructure.
- 2. Seek to nurture students of extraordinary motivation and ability and prepare them for lifelong learning and leadership in an increasingly knowledge driven world.
- 3. Envisage to establish departments for excellent education, cutting edge research and training by offering programmes, to address futuristic needs.

# **DEPARTMENT'S VISION:**

To be recognized globally for excellence in education, research and training in the field of Electrical Engineering by preparing graduates for tomorrow creating high societal impact.

# **DEPARTMENT'S MISSION:**

- 1. To offer good quality under-graduate, post-graduate and doctoral programmes for preparing globally competitive graduates in electrical engineering.
- 2. To provide state-of-the-art resources that contribute to achieve excellence in teaching learning, research and skill development activities.
- 3. To impart knowledge driven, technologically delivered and research augmented excellent education.
- 4. To motivate the students for life-long learning and to inculcate leadership qualities in an increasingly knowledge driven world.

| Mission<br>Element | Mission Element                  |
|--------------------|----------------------------------|
| M1                 | Globally Competitive (Energy and |
|                    | Engineering)                     |
| M2                 | Skill Development                |
| M3                 | Excellent Education              |
| M4                 | Life-Long Learning               |
| M5                 | Leadership                       |

# PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

- 1. To prepare highly competent graduates with strong foundation in engineering and technology for successful career in industries, academics and research organizations.
- 2. To prepare the graduates with ability to identify, analyze, design and solve complex electrical engineering problems, based on application of basic sciences, mathematics and fundamentals of electrical engineering.
- 3. To prepare fundamentally strong graduates having broad knowledge in electrical engineering that can become innovators or entrepreneur to solve industrial and societal challenges.
- 4. To prepare graduates with holistic education approach that they should contribute ethically in multicultural and multidisciplinary groups to develop sustainable solutions for global, environmental and social issues.

# **PROGRAM OUTCOMES (PO):**

Engineering Graduates will be able to:

- 1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- 4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- 5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- 6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- 8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

- 11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- 12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

# PROGRAM SPECIFIC OUTCOMES (PSOS)

PSO1: To identify, formulate, design and investigate various problems related to electrical circuits, power electronics, electrical machines and power systems by applying fundamental knowledge of engineering and science

PSO2: To demonstrate proficiency in usage of modern hardware & software tools to model, design, simulate and analyze electrical systems for solving real world multi-disciplinary problems

PSO3: To contribute in development of smart systems, modern grid and clean energy system for societal and environmental benefits.

# **Lectures by Industry Experts**

- Mr. Pradeep Dave Consulting Engineer, delivered a lecture on Introduction to Transformer at Department of Electrical Engineering on 22/08/2021
- Mr Anurag Pandit Product Manager GIS PASS ABB POWER PRODUCTS AND SYSTEMS INDIA LIMITED Savli, Vadodara delivered a lecture on Type and Routine testing of High Voltage Apparatus as per standards and New Technologies in HV Switchgears at Department of Electrical Engineering on 08/10/2021
- ❖ Dr Vikrant Sharma Deputy Director NISE delivered a lecture on Aspects of Solar Energy at Department of Electrical Engineering on 11/11/2021

# Workshops/STTPs attended

- ❖ Dr. J. G. Jamnani attended 3 days Training program on "Quality Management system Awareness cum internal auditor training course as per ISO 9001:2015" organized DNV held at PDEU, Gandhinagar during Sep 14-16, 2021.
- ❖ Dr. Jitendra G. Jamnani attended "Environment Management system (EMS) awareness training course as per ISO 14001:2015" organized DNV held at PDEU, Gandhinagar on October 01, 2021.
- ❖ Dr. Siddharth Joshi attended 1st International conference on "Additive Manufacturing and Advanced Materials (AM2-2021)" organized at Pandit Deendayal Energy University (PDEU) during 4-6 October, 2021.
- Dr. Vima Mali attended ATAL sponsored one week Faculty Development Program entitled "Emerging Trends and Development in Electric Vehicles" organized by Dr. Kundan Kumar, AP, EED, and NIT Manipur during 25-29 October, 2021.
- Dr. Siddharth Joshi attended One month internship on Renewable Energy System organized by Pantech Solution on November 20, 2021.

# **Invited Talks / Guest Lectures Delivered**

- ❖ Dr. Siddharth Joshi delivered an invited lecture on "Recent advancements in photovoltaic system" at GEC Patan on 05/07/2021.
- ❖ Dr. Siddharth Joshi delivered an invited talk on "Climate change and its impact" at Vigyan Gurjari Ahmedabad on 14/09/2021.
- Dr. Siddharth Joshi delivered an invited talk on "Solar energy and its advancement" at Sankalchand Patel University Visnagar on 18/10/2021.
- ❖ Dr. Alok Jain delivered an invited talk on "Smart Distribution Systems" at Thapar University, Patiala on 17/12/2021.

# **Events Organized at the Department**

- Dr. Pragnesh Bhatt organized a Lecture Series/Webinar on R&D Opportunities in Emerging Smart Electrical Power Systems during 01-02 July, 2021 in event there were total 43 participants attended the event.
- Dr. Pragnesh Bhatt organized a Lecture Series/Webinar on R&D Opportunities in Emerging Smart Electrical Power Systems during 08-09 July, 2021 in event there were total 28 participants attended the event.
- Dr. Siddharth Joshi and Dr. Praghnesh Bhatt organized a National Webinar on Future Prospects of Electrical Vehicles on 05 August, 2021. Total 98 participants attended the event.
- Dr. Meera Karamta organized a National webinar on Machine Learning Application to Electrical System - Theoretical and hands-on-Experience case study on 26 August, 2021. Total 38 participants attended the event.
- Dr Anil Markana organized a National Seminar on Financial Data Analysis and Prediction on 28 August, 2021.
- ❖ Dr. Siddharth Joshi organized a National Webinar on Impact of Climate Change and its effect on 14 September, 2021. Total 40 participants attended the event.

- ❖ Dr. Jitendra Jamnani organized a National Industrial Webinar on "Type and Routine testing of High Voltage Apparatus as per standards and New Technologies in HV Switchgears" on 08 October, 2021. Total 180 participants attended the event.
- ❖ Dr. Siddharth Joshi and Mrs. Vima Mali organized a STTP on Sustainable Energy future for Green Transportation during 18-23 October, 2021. Total 55 participants attended the event.
- ❖ Dr. Siddharth Joshi organized a STTP In collaboration with IEEE CIS Guj chapter Treasurer: IEEE GUJARAT CHAPTER Dr. Mohendra Roy on Cyber Security meets Al during 25-29 October, 2021. Total 25 participants attended the event.
- ❖ Dr. Siddharth Joshi organized an expert talk on Solar Energy on 12 November, 2021. Total 185 participants attended the event.
- ❖ Dr. Siddharth Joshi organized national webinar on important aspect of human behavior and cognition – A Motivation on 13 December, 2021. Total 114 participants attended the event.

# **Publications – Journals**

- Dr. Vima Mali "Review on battery thermal management systems for energyefficient electric vehicles", August. 2021.
- Dr. Siddharth Joshi "Power Estimation of Photovoltaic Energy System with Energy Storage for DC Microgrid Applications with Variable Climatic Conditions", August. 2021.
- ❖ Dr. J G Jamnani "Electric motors for electric vehicles Comprehensive review based on various performance parameters" at 12th International Conference on Advances in Computing, Control, and Telecommunication Technologies", Aug. 2021.

- ❖ Dr. J G Jamnani "Grid Integration of Large Scale Renewable Energy Sources: Challenges, Issues and Mitigation Technique" at 2021 Asian Conference on Innovation in Technology (ASIANCON) Pune, India" Aug. 2021.
- Dr. Siddharth Joshi "Cascaded PI Controller based Wind Turbine Generator System for Battery Charging Applications" Sep. 2021.
- ❖ Dr. Siddharth Joshi "A Resilient Hybrid Renewable Energy System for DC Microgrid with Inclusion of the Energy Storage (Book chapter)" October 2021.
- ❖ Dr. J G Jamnani "Performance analysis and comparison of PM-Assisted Synchronous reluctance motor with ferrites and rare earth magnet materials" at 1st International Conference on Additive Manufacturing and Advanced Materials (AM2)" held from 4-6 October 2021 at Pandit Deendayal Energy University, Gandhinagar, Gujarat, India.
- ❖ Dr. Siddharth Joshi "Small Scale Wind & Solar Photovoltaic Energy Conversion System for DC Microgrid Applications" October 2021.
- ❖ Dr. Alok Jain "Network Performance Evaluation of Smart Distribution Systems Using Smart Meters with TCP/IP Communication Protocol/ Energy Reports Journal" October 2021.
- Dr. Alok Jain "Online Management and Assessment of Power Quality Issues through Smart Metering in Smart Grid Architecture/ Energy Reports Journal" November 2021.
- Dr. Siddharth Joshi "Predictive Shift of Vehicles by Recent Market Trends" November 2021.
- Dr. Siddharth Joshi "Impact Analysis of SVC on Stepped Distance Protection Modeling and Simulation using PSCAD/EMTDC" November 2021.
- ❖ Dr. Siddharth Joshi "Harmonic Mitigation using APFs for DER based Microgrid Applications (Book chapter)" November 2021.
- Dr. Siddharth Joshi "Comparative Analysis of Advanced Controllers Applied to Standalone Wind Energy Conversion System for DC Microgrid Applications (Book Chapter) "December 2021.

# **Posters Gallery – Webinars-Seminar-STTP**











Register Now!

will be Provided

e-certificate will be provided after scoring 60% in the test will be held on last day. ONLINE PLATFORM

Registration link: https://forms.gle/dVTksWsUEzABga5y9

Microsoft

Teams









Participation

A Virtual Short Term Training Program on

# Cyber security meets Artificial Intelligence

with Hands On 25-29 October 2021



For participation please fill the link https://forms.gle/RbRNVHSazKcheUgW9 Who can attend? : Any one interested in Cyber security and Artificial Intelligence can attend

### Important Dates

Commencement of Participation 21st July, 2021

Notification of Participation :

Will be notified by through email by 20th October, 2021

The event has no registration fee. On the last day of STTP there will be an online test for 45 mins.

About the short term training program: The STTP will show how AI is integrated into cyber security - especially to manage cyber threats. However, AI is a double edge sword which is both blessings and curse for cyber security. The STTP aims to provoke such thoughts in the minds of participants. The Hands-on experience will help to map theory to practice. About IEEE CIS Gujarat Chapter: EIEE Computational Intelligence Society Gujarat Chapter constitute the geographically distributed structure of the CIS Society. We aim to serve as a direct tie with the Society's governing bodies, and to organize

distributed structure of the CIS Society. We aim to serve as a direct tie with the Society's governing bodies, and to organize seminars, lectures, technical visits, forums, panels, meetings, workshops, conferences, counselling, networking, and much more, for the IEEE CIS members, IEEE members as well as for the general public.

About PDEU: Pandit Deendayal Energy University (previously known as PDPU) has been established by Gujarat Energy Research Management Institute (GERMI) as a Private University through the State Act The university has addressed through a number of specialized and well-planned undergraduate, postgraduate programs and intense research initiatives in the domain of science, technology, management and humanities. PDEU has been promoted by Government and Industry to create a world class University to cater the need for trained and specialized human resource with special focus on energy sector.

About AVPII: Amrutal Virpal Parekh Technical Institute abbreviated as AVPII was found out in the year of 1948 by the help of a generous decore of the train locations.

of a generous donor of that era known as Sheth Amrutial Virpal Parekh. Currently on the requirement of changing time Institution offers Diploma Level courses on branches of Engineering and Design such as Bio-Medical, Computer, Instrumentation & Control, Electrical, Electronics & Communications and Computer Aided Costume Design.

Organizing Chairs: Dr. Siddharth Joshi (PDEU) Dr. Parvez Faruki (AVPTI)

Contact: siddharth181285@zmail.com

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| Speakers for short term training program   |   |  |
|--|---|--|
| Dr. Gaurav Gupta, Additional Director / Scientist 'E' at Ministry of Electronics & Information Technology (Meit'Y) https://www.meirx.govi.ncontent/cvber-laws-and-s-security-group https://www.linkedin.com/in/gauravggupta/detail/contact-info/ | Cyber Security, Digital Forensics, Security Audit,<br>Artificial Intelligence   |  |
| Dr. Samir Datt Founder, ForensicsGuru.com<br>https://www.deakin.edu.au/about-deakin/people/adnan-anwar   | Cyber Security, Intelligent Techniques, AI, IoT, Critical<br>Infrastructure Security  |  |
| Akka Zemmari, Associate Professor (Senior Lecturer, HDR) in Computer Science, Researcher at LaBRI, France;<br>https://www.labri.fr/oerso/zemmari/  | Algorithms Design, Cloud Security, Malware Analysis<br>and Network Intrusion Detection, Distributed systems,<br>Machine Learning, Deep Learning |  |
| Sandeep Vijayaraghavan K, VP-Cyber Security & IT Services,<br>(Terralogic Inc.) https://www.terralogic.com/aboutus/  | SOC strategy, IT Information Security and Incident management   |  |
| Mrs. Shivangi Trivedi Assistant Professor, R.B. Institute of Management & Computer Studies. http://rbi.edu.in/mrs-shivangi-trivedi/  | Cross Site Scripting (XSS) Attack in Web Application<br>and its Mitigation using Prevention Mechanism to<br>Secure Web Pages                    |  |

The certificate will be awarded to those who have completed all the formalities like filling up of feedback form everyday, 80% attendance and 60% marks in the test.

Online Platform : Microsoft Teams - Joining link will be shared to the registered participants

Known us more @ https://sites.page.

Executive CIS Committee, IEEE Gujarat Chapter

Dr. Maulin Joshi (Vice Chair IEEE CIS Gujarat

or, SCET, Surat

Organizing Chair

Organizing Chair

(Chair Membership Development

IFFE CIS Gujarat Chapter)

Assistant Professor, EED, SoT,

PDEU, Gandhinagar.







Important aspect of human behavior and cognition - A Motivation





13<sup>™</sup> DECEMBER 2021 10:00 AM to 12:30 PM IST

### **SPEAKERS**



Prof. Anurag Lakhlani Faculty at Ahmedabad University & Motivational Speaker



Mr. Deepak Teraiya Life Coach and Professional & Experienced Relationship Advisor

# **CO-ORDINATOR**



Dr. Siddharth Joshi Assistant Professor, EED, SoT, PDEU



**E-Certificates** will be Provided



