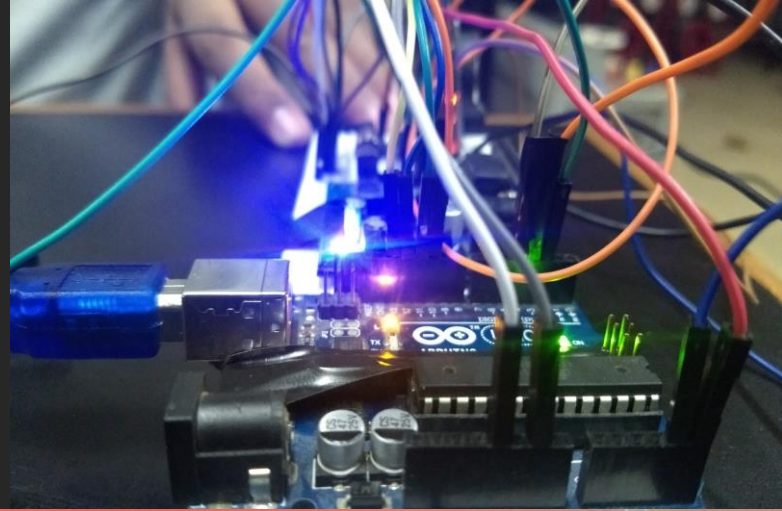


# The Circuit





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



**From the Head**  
Electrical Engineering  
*Dr. J. G. Jamnani*

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 June 2019 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 warm wishes to the department and welcome you to **The Circuit**.

It gives me immense pleasure and joy to introduce you to another edition of the 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 talks, lectures delivered, scientific breakthroughs in terms of publications have been highlighted; and (2) *Student Spotlight*: as the name suggests, brings forth all the achievements and accomplishments of the students, prizes won, participatory events, projects under execution, etc. The Department of 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>.

**On the Cover**  
Hon'ble Dignitaries,  
7<sup>th</sup> Convocation

Department of Electrical Engineering  
School of Technology, PDPU Gandhinagar  
August'2019.

**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 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.

# Faculty News

## Workshops/STTPs attended

**Dr. V.S.K.V. Harish** organized attended a one-day workshop on Technological Advancements in the Field of Renewable Energy on 19<sup>th</sup> Sep' 2019.

## Invited Talks / Guest Lectures Delivered

**Dr Vivek Pandya** delivered a lecture on “Classroom Teaching - Content, Control, Conduct and Effectiveness Faculty Induction Training Program-PDPU on 16<sup>th</sup> July' 2019

**Dr Jitendra Jamnani** delivered a lecture on “Design of 3-phase Induction Motors” for UG &PG Students at LDRP Institute, Gandhinagar on 22<sup>nd</sup> July' 2019.

**Mrs Leena Santosh** delivered an expert lecture on “Basics of Power Systems” at Government Polytechnic, Gandhinagar on 29<sup>th</sup> July' 2019.

**Dr Vivek Pandya** delivered an expert lecture on “Power System Protection: Introduction & Philosophy” at VGEC: Vishwakarma Government Engineering College-Chandkheda, an expert lecture organized under IEI student chapter on 31st July' 2019.

**Dr Anil Markana** delivered an expert lecture on “Sensors & Transducers in Structural Health Monitoring System” in the Workshop of Structural Health Assessment & its Remedies at Marwadi University, Rajkot on 13<sup>th</sup> September' 2019.

**Dr Praghresh Bhatt** delivered a lecture on “Futuristic Technologies in Industries” in Short Term Training Programme at BVM Engineering College under TEQIP during 27May-8June, 2019.

## Meet our new faculty members

**Mr. Alok Jain** (b. 1988 | j. Jun'19)



**Mr. Jain** received his B.Tech (Hons.) degree in Electrical & Electronics Engineering from UPTU, Lucknow, India in 2010 and M.E. in Power Systems & Electric Drives from Thapar University, Patiala, Punjab, India in 2013. He worked in BSES Yamuna Power Ltd. as a Graduate Engineer Trainee at New Delhi (2010), project assistant in CRRRI Badarpur, New Delhi (2011), as an assistant professor, IEC group of Institutions, Greater Noida (2013-2014). He is currently pursuing Ph.D. degree in Electrical Engineering Department at

## Faculty News

### Meet our new faculty members

Indian Institute of Technology (BHU), Varanasi, India. His research interests include smart grid, smart metering, and power quality.

#### Mr. Avirup Maulik (b. 1988 | j. Jun'19)



**Mr. Maulik** received B.E. degree in Electrical Engineering in 2009 from Bengal Engineering and Science University (IEST) Shibpur and the M.Tech in Power and Energy systems and submitted his PhD from the Indian Institute of Technology Kharagpur in 2016 and 2019, respectively. He is a recipient of Institute silver medal for best academic performance in the Department of Electrical Engineering, IIT KGP at the masters level, POSOCO award 2017 for Master's thesis, and a myCEB grant from the Govt. of Malaysia. His research interests are distribution system, optimal performance of microgrids, optimization and soft computing techniques.

#### Mr. Naveen Yalla (b. 1988 | j. Jun'19)



**Mr. Yalla** received B.E. degree in Electrical and Electronics Engineering in 2009 and the M.Tech in Electrical Engineering from National Institute of Technology Kurukshetra in 2011 and submitted his PhD at the Indian Institute of Technology Roorkee in 2019. His research interests are High Power Factor Converters, Electric Vehicle Chargers, Multi-Level Converters, Solid State Transformers.

## Extension Activities

- ❖ **Dr. Bhinal Mehta** participated in STTP (Short Term Training Programme) on “Micro grid and Renewable Energy Technologies (MRET)” which was organized by Indian Institute of Information Technology Design and Manufacturing (IITDM), Institute of National Importance at Kancheepuram, Chennai during 6<sup>th</sup> – 11<sup>th</sup> June'2019.
- ❖ **Dr. Siddharth Joshi** participated in STTP (Short Term Training Programme) on “Micro grid and Renewable Energy Technologies (MRET)” which was organized by Indian Institute of Information Technology Design and Manufacturing (IITDM), Institute of National Importance at Kancheepuram, Chennai during 6<sup>th</sup> – 11<sup>th</sup> June'2019.
- ❖ **Dr. V S K V Harish** participated in STTP (Short Term Training Programme) on “Block chain Technology 2019” which was organized by SVNIT Surat during 3rd June - 7th June' 2019.

# Faculty News

## Extension Activities

- ❖ **Mr. Nirav D. Karelia** participated in STTP (Short Term Training Programme) on Power Electronics for Renewable Energy & Electric Vehicle at MNIT: Malviya National Institute of Technology Jaipur – Jaipur during 19th-23rd August' 2019.
- ❖ **Ms. Meera Karamta** participated in one day workshop on “Self Defence” workshop was Coordinated (in the capacity of Nominated member from SoT for PDU Women’s Cell), Organized under aegis of Women's Cell PDU. There were 68 girl students and 12 faculty member registered and Ms. Veena Gupta, Chairperson FSAI women safety and security.- 6th September, 2019.
- ❖ **Dr. Anil Markana** participated in One day workshop on “Workshop on Intellectual Property Rights (IPR)” at PDU on 7th September'2019.
- ❖ **Dr. Amit Sant, Dr. Anil Markana, Dr.V.S.K.V Harish, Mr. Pavan Kumar and Mr. Alok Jain** participated in one day workshop which was Conducted by (GERMI) Energy and Petrochemicals Dept., Govt. of Gujarat on 19 September' 2019.
- ❖ **Dr. Anil Markana** participated and coordinated in 10 day’s Combined Annual Training NCC camp at 9 Gujarat Bat NCC Ahmedabad, NCC Group HQ, during 20th to 29<sup>th</sup> September, 2019.
- ❖ **Mr. Pavan Kumar and Mrs. Leena Santosh** participated in one day Workshop on “AWSAR for PhD. And Post-Doctoral Fellows in S&T streams of Gujarat” at ISR: Institute of Seismological Research, Gandhinagar, on 23rd September, 2019.

## Publications – Journals

- ❖ Prakruti Shah; **Bhinal Mehta**, “Microgrid Optimal Scheduling with Renewable Energy Sources Considering Islanding Constraints,” Iranian Journal of Science and Technology, Transactions of Electrical Engineering, vol. \_\_, pp. \_\_, Springer, Aug-2019.



# Faculty News

## Publications – Journals

- ❖ **Dr Maulik Avirup;** Das Debapriya, “Application of linearized load flow method for droop-controlled DC microgrids,” IET Generation, Transmission & Distribution (Accepted for publication), 2019.
  
- ❖ **Dr. Siddharth Joshi,** “Comparative analysis for INC & P&O MPPT based Photovoltaic energy conversion system” IITRAM: Institute of Infrastructure Technology Research and Management, Ahmedabad, July’2019.
  
- ❖ **Dr. Bhinal Mehta,** “Comparative analysis for INC & P&O MPPT based Photovoltaic energy conversion system” IITRAM: Institute of Infrastructure Technology Research and Management, Ahmedabad, July’2019.
  
- ❖ **Dr. Jitendra Jamnani,** ““Optimal Design of 1200 kV UHV AC Transmission Lines in India using Newly Developed Standalone MATLAB GUI” Published in International Journal of Recent Technology and Engineering (IJRTE), Volume-8(2), pp.6191-97 (ISSN: 6191-3878), Scopus Indexed July’ 2019.
  
- ❖ **Dr. Bhinal Mehta,** “Iranian Journal of Science and Technology, Transactions of Electrical Engineering (Paper title: Microgrid Optimal Scheduling with Renewable Energy Sources Considering Islanding Constraints)” published in SCI Journal Paper (WES, SCOPUS), August’2019.
  
- ❖ **Dr. Vivek Pandya and Dr. Praghnesh Bhatt** “Multi-class support vector machines for static security assessment of power system” published in Ain Shams Engineering Journal, August’2019.
  
- ❖ **Dr. Jitendra Jamnani,** “Cost Effective Design of Extra High Voltage Transmission Lines for Minimizing Transmission Congestion Problems” Published International Journal of Innovative Technology and Exploring Engineering (IJITEE), Volume-8(11), pp.1257-62 (ISSN: 2278-3075). Scopus Indexed, September’ 2019.

# Faculty News

## Publications – Journals

- ❖ **Dr. Bhinal Mehta**, "Journal of Engineering Science and Technology (JESTEC) (Paper Title: Determination of Optimal Sizing Model for Battery Energy Storage System in Grid connected" published paper in SCI Journal (WES, SCOPUS), September' 2019.

## Publications – Conferences

- ❖ **L. Heistrene**, P. Mishra, M. Lokhande, "*Recourse-based Stochastic Market Clearing Algorithm*", International Conference on Power, Control and Communication Infrastructure - 2019, held at IITRAM, Ahmedabad, July 2019.
- ❖ M. Patil, **L. Heistrene**, V. Pandya, "*Optimal power flow in power networks with TCSC using Particle Swarm Optimizations*", International Conference on Power, Control and Communication Infrastructure - 2019, held at IITRAM, Ahmedabad, July 2019.
- ❖ **Dr. Praghnesh Bhatt**, **Leena Santosh**, International conference on "Power Control & Communication Infrastructure 2019" (ICPCCI2019). Held at IITRAM, Ahmedabad, Gujarat, July' 2019.
- ❖ **Dr. Jitendra Jamnani**, "Design and Analysis of Typical Chemical Industry Electrical Distribution Network for Voltage Profile Improvement" at 2019 IEEE International conference on Energy, Systems and Information Processing (ICESIP 2019) held at Indian Institute of Information Technology, Kanchipuram, Chennai, July'2019.
- ❖ **Dr. Jitendra Jamnani**, "Short Circuit Analysis of Electrical Distribution System for Typical Chemical Industry" At 2019 IEEE International conference on Computing, Power and Communication Technologies Energy, (GUCON 2019) held at Galgotias University, Noida, New Delhi, September'2019.

## Events at PDPU

### Independence Day:

**Dr. Anil Markana** has organized and coordinated in Independence Day which was held on 15<sup>th</sup> August, 2019 with beneficiary of 500 persons in presence of Director General of PDPU.

### Engineer's Day 2019:

Department of Electrical Engineering has organized an Engineering's day on 16<sup>th</sup> September' 2019 at PDPU and has coordinated the overall event, Dr. Narottam Sahoo was chief guest of the event from GUJCOST (Gujarat Council on Science and Technology), Gandhinagar, Gujarat.

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