

Department of Electrical Engineering

Faculty of Engineering
2013-2019

A Brief Profile and Progress Report

Department Website

<https://www.dei.ac.in/dei/engineering/index.php/2012-12-08-09-16-45/electrical-engg>



Research Projects and Grants

Annual Budget of Department

Maintenance Budget	Rs. 2.5 Lakhs
Funds Generated from Consultancy	Rs. 22.5 Lakhs
Number of Projects Completed	No. 11 (Rs. 1036 Lakhs)
Number of Projects in Progress	No. 4 (Rs. 508 Lakhs)
Major Funding Agencies	UGC, AICTE, MHRD, DST, DRDO, ASCL

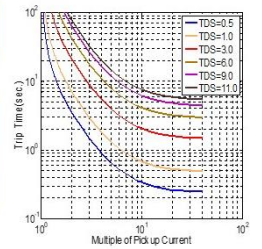
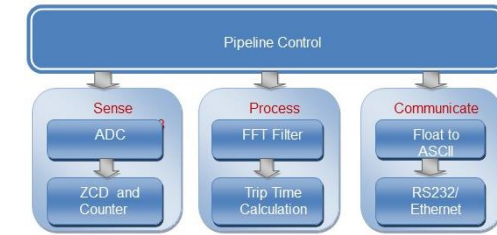
Sl. No.	Agencies	Funds (Rs. Lakhs)
1	Annual Maintenance Budget Allocation	2.50
2	UGC SAP	44.50
3	DST FIST	126.00
4	Sponsored Research Projects (DST, UGC, AICTE, ADRDE)	196.50
5	TEQIP (2017-20) (20% of total grant)	200.00
6	MHRD-NMEICT	730.00
7	DST-Mission Innovation Project (DEI-IITR-Tromso, Norway)	234.00
	TOTAL	1533.50

S.N.	Item	Number
1	Journal Publications	97
2	Citations (since 2013)	2150
3	Conference Publications	50
4	Books/Chapters	7
5	Ph.D. Awarded	20
6	Ph.D. ongoing	12
7	Patents awarded	1
8	Patents applied for	2
9	Invited Talks (Abroad)	15
10	Invited Talks (India)	105

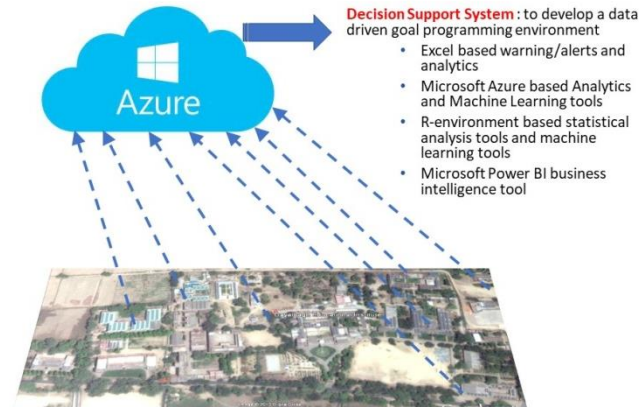
Publications in high impact factor journals
 Maximum IF- 7.11
 Minimum IF – 0.86

Thrust Areas

- a. Quantum & Nano Computing
- b. Consciousness Studies
- c. AI & Robotics
- d. Soft Computing
- e. Smart Renewable Energy Micro Grids
- f. Image Processing
- g. Smart Agriculture
- h. Electrical Machines & Power Systems



$$t = TDS \left(\frac{A}{M^p - 1} + B \right)$$





International Research Collaborations:

International Research Collaboration with Kiel University, Germany

- Vibrant research collaboration with Discrete Optimization Group of Kiel University
- 2 jointly supervised PhDs completed, 1 ongoing
- Several joint research publications in journals and conferences
- Indo-German Workshop on “Engineering and Analysis of Evolutionary Algorithms” in 2013
- One DST-DFG project successfully completed. Four visits by German researchers to DEI in the project and four by DEI faculty to Kiel. Faculty member also invited to attend Workshop on “Algorithms for Big Data” at TU, Dortmund
- One DST-DAAD project ongoing, One visit by DEI faculty to Kiel University in 2019. Three more proposed.
- Participation in “The Science of Consciousness” Conferences – Arizona, USA, 2017 , Interlaken, Switzerland, 2019
- **International Co-op training under TEQIP-III (MITACS) (USD 4000 Assistance to each)- Two students in 2018 and one in 2019**
- Four students and a mentor were sponsored for a 5 day visit to Mitsubishi Industries, Japan under MoU.
- **Joint DST Funded R & D project on Solar Agri Farm with IITR and Univ. of Tromso, Norway-2018**
- **Six of the 2019 graduates have registered for higher studies abroad**

Undergraduate Research

- Innovative Student Project Award 2017 for B. Tech. Major Project on, "Study of Opto-genetic Control of Neuronal Signalling", by the Indian National Academy of Engineering.
- Several papers published in International Journals in 2016, 2017 & 2018
- Student membership of Professional bodies : IEEE, IEI, SSI, ACM
- Young Scientist Awards at SSI Conference: 2013-2018

Regular participation and paper presentation in prestigious National and International Conferences

- The Science of Consciousness- Dayalbagh:2013, Arizona:2014, 16, Helsinki:2015, San Diego:2017
- International School on Quantum & Nano Systems QANSAS
- National Systems Conference: 2017
- IEEE R10 Humanitarian Technology Conference 2016
- Conference on Value Education 2015 Dayalbagh
- Indo-German workshop on Research and Education Connect, 2015
- Indo-German workshop on Engineering and Analysis of Evolutionary Algorithms, 2013
- Paritantra – students winning best paper awards



Students' Achievements at National Level

1. **Second PRIZE (Rs. 2.5 Lakh), Students' Innovation Pavilion, GRIDTECH 2015:5th International Exhibition and Conference on April 8-10, 2015.**
2. **First prize (Mitsubishi Gold Cup and Rs. 1.0 Lakh) and The Most Popular Team Award at Mitsubishi Electric Cup 2016 :**
3. Participation in **Rashtrapati Bhawan Code for India Hackathon for Social Innovations** held at President's Estate, New Delhi, India (March 2016)
4. **First prize (Mitsubishi Gold Cup and Rs. 1.0 Lakh) and The Most Popular Team Award at Mitsubishi Electric Cup 2018 .**
5. **Champion 2017 : Best Solar Skills Training Institute, Renewable Energy India Expo, September 21, 2017, Greater Noida.**
8. **Best Graduate Engineer Trainee/ Best New Comer/ Star Performer of the Year/ Best Analyst/ Best Team** at Maruti Udyog, HCL, TCS, ST Microelectronics, Accenture, ACC Ltd., Siemens India
9. **Prizes won** at National Level Essay Writing
10. **First Position** in Solar Light Maintenance Challenge at Sigma Summit-2019.
12. **Innovative Automation product** developed by Interns under Make in India, at JSW Energy for hazardous pipe line maintenance in 2019 was appreciated

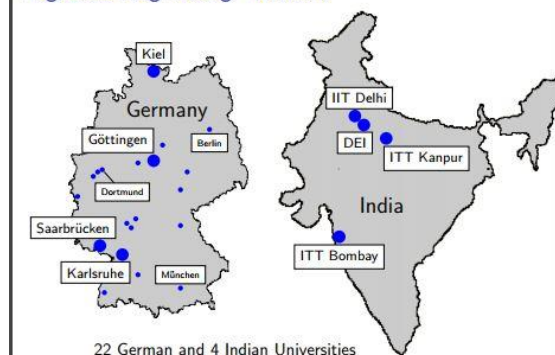


Collaboration with Industry

1. Future Ocean Project Europe Cluster of Excellence 2012,13,14,16 (one month each year)
2. BHEL, Bangalore
 - Design and deployment of 700 kWp Distributed SPV Microgrid in the institute with BHEL
 - 25.5 kWp SPV system in Satsang Hall
 - R&D in optimal sun tracking and string monitoring with BHEL
 - Solar Agriculture Farm Prototype: Multiple land-use model accommodating 50 solar panels at 16' height with optimal sun tracking
3. Cadence Design Systems, USD 25,000
4. MEAD systems, Singapore
5. Testing/Calibration facility for industries
6. Technical Vetting of AGRA SMART CITY Proposals:2018 onwards: Rs. 17.85 Lakhs



Algorithm Engineering - Network



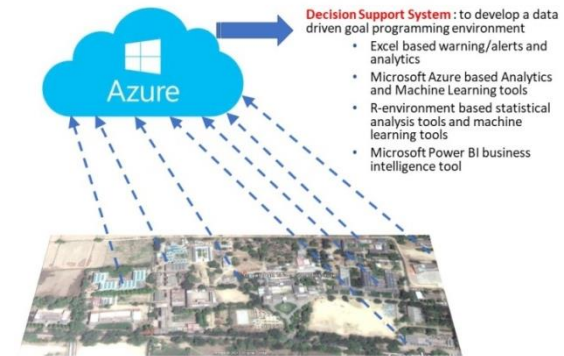
Community Outreach Activities

1. Preparation of DPRs Rajaborari Estate
2. Installation and maintenance of solar systems at DEI and its ICT Capmuses
3. Maintenance of electrical equipment of Saran Ashram Hospital, Agriculture Farm, Electricity & Water Department of Dayalbagh
4. Deployment and maintenance of solar system at Satsang Hall, Dayalbagh
5. Design and development of Light & Sound show and Musical Fountain synchronized with lights and audio.
6. Conversion of a Diesel van in to Solar Electric Van
7. Energy audit of all the residential quarters of Dayalbagh for Dayalbagh Nagar Panchayat.
8. Active role in the award of “Green Campus” status to Dayalbagh Nagar Panchayat by Ministry of New & Renewable Energy, Gol
9. Active contribution in the Microsoft Harisal Project under Digital Village initiative of Government of Maharashtra
10. Training of electrical staff of Essential Services, Dayalbagh
11. Maintenance of Sewage Treatment Plant, Dayalbagh
12. Maintenance and operation of Gasifier at Dayalbhandar



Awards and Recognitions : Faculty

1. AADEIs' Chair of Excellence in Quantum Information and Consciousness
2. SSI Life Time Achievement instituted by Systems Society of India 2016
3. R.K. Varshney Award instituted by System Society of India, 2013, 2016
4. National Award for concentrated solar technologies, Ministry of New & Renewable Energy, GoI. 2016
5. State Energy Conservation Awareness Award for the year 2016,2017 & 2018
6. Best Solar Skill Training Institute-2017
7. DST R&D project titled **“Design & Development of a Smart Micro Grid in Dayalbagh Educational Institute”** was selected as one of the success stories of the country and included in the report of Science & Technology Minister for presentation during the meeting of Mission Innovation, a global initiative of 22 countries and European Union at Beijing, June 2017.



Conferences & Seminars organised:

1. Seminar cum Workshop on Campus Solarisation, MTV Puram, 5th October, 2013
2. Indo-German workshop on Engineering and Analysis of Evolutionary Algorithms-EAEA-13, 2013
3. National Conference on Fast Forward with Solar Mission: DEI Distance Education Centre, MTV Puram, January 20-21, 2014
4. National Workshop on Solar Photovoltaic Power Plants: Opportunities & Challenges, Kochi, 20-21 March, 2014
5. Faculty Development Programme on Solar Photovoltaic Energy Technology, MTV Puram, 2014.
6. Indo-German workshop on Research and Education Connect, 2015
7. IEEE R10 Humanitarian Technology Conference, DEI, Dayalbagh, December 2016
8. National Systems Conference, NSC-2017 1-3 Dec. 2017
9. Good Governance Workshop- 2018
10. International School on QUANSAS – 2013 – 2018
11. Advances in Mathematical Sciences & Applications, April 2019





Department's contribution to core courses

- Members of the Department contributes to conducting of Agricultural Operations, Social Service
- Department offers four Work experience courses
 - EEW401 W.E.-Radio and T.V. Repair
 - EEW402 W.E.-Repair of Electrical Equipment
 - EEW403 W.E.-Printing Techniques
 - EEW404 W.E.- IOT and Microcontrollers
- Members of Department are co-ordinators of three B.Voc. courses and a certificate course
 - B.Voc. AI & Robotics
 - B.Voc. Dairy Technology
 - B.Voc. Renewable Energy
 - Certificate Course on Solar Technician
- Various responsibilities carried out by members of the department

Faculty Level	Institute Level	Outside the Institute
TEQIP Director TEQIP Coordinator Startup cell Coordinator Advisor, Institution of Engineers Coordinator, Placement Cell Members of different faculty committees	Dean, R&D Chairman, Arbitration committee Secretary, Advisory Committee on Education Coordinator of IIPC Coordinator of Cell for differently abled students Members of different Institute committees	Members of selection committees Members of Board of Governors



Future Plan

- 1. Aligning Research areas into Nine Focussed Research Divisions specially related to technologies identified in Vision 2031**
- 2. Enhance R & D Activities for building the economy through research and frugal innovation anchored in the principle of achieving more with less.**
- 3. Enhancing departmental activities contributing towards Sigma Six Q-Vs vision**
- 4. Keep curriculum updated for Physical, Mental and Spiritual Development of all Stakeholders**
- 5. More outreach activities with the objective of reaching the last, the least, the lowest and the lost**
- 6. To obtain NBA Accreditation of B Tech Electrical Engineering Program: 2019 (Peer team visit is expected in September, 2019)**
- 7. *To germinate a few Significant Start-ups in Engineering and Lay emphasis on Innovation, Incubation and Entrepreneurship***



Thank you