

भारतीय  
प्रौद्योगिकी  
संस्थान  
काशी हिन्दू विश्वविद्यालय



INDIAN  
INSTITUTE OF  
TECHNOLOGY  
BANARAS HINDU UNIVERSITY



# Information Brochure (2019-2020)

M.Tech. Programme  
*in*

ELECTRIC MACHINES AND  
DRIVES












## About Us:

Electrical machines are integral part of Electrical Engineering. The growth of any country is greatly dependent on electrical machines. In today's world, it would be impossible to even crawl without the use of electrical machines. Most of the real world application, like transportation, production and construction etc., are driven by electrical machines. Moreover, electrical machines require regulation to achieve optimum performance. In order to provide the regulation, electrical machines are operated along with power electronic. The integration of power electronics with machines serve as electrical drives. Since the inception of electrical engineering, electrical machines and their control with power electronics are hot spot area of research. The specialization continues to stride forward in the high quality of teaching and research. Machine Lab and Drives Lab are two major activities under this specialization which are part of curriculum of Undergraduate and Post graduate students.

# Faculty

Profile Picture	Description (Name, Designation)	Area of Interest
	Dr. Devender Singh dsingh_eee@juitbhu.ac.in Professor	Short term Load Forecasting, State Estimation, Distributed Generation, Load Modelling.
	Dr. R. K. Srivastava Professor	Linear Induction Motor, Electromagnetics applied to electrical machines, Permanent magnet Axial Flux machines, Special Purpose Electrical Machines
	Dr. R. K. Saket Professor	Reliability Engineering, Power System Reliability, Electrical Machines & Drives, Reliability Aspects of SEIG/DFIG, Reliability Enhancement of Electrical Machines & Drives, Micro Hydro Power Generation Systems, Renewable Energy Applications, Control System Design
	Dr. Santosh Kumar Singh Associate Professor	Power Electronic converter topologies, Silicon carbide converters, Electric Drives, Hybrid electric vehicles, Multiport Permanent magnet generators, Renewable energy integration and applications
	Dr. Kalpana Chaudhary Associate Professor	Power Electronics; Electrical Machines and Drives; Satellite Solar Power Station; Switched Reluctance Motor for Electric Vehicle Application; PMBLDC Motor; MPPT techniques for Photovoltaic Energy Conversion; Wireless Power Transmission; Renewable energy Generation
	Dr. Manish Kumar Assistant Professor	Renewable Energy Technologies Plasma Physics Coherent Radiation Generation, Terahertz Radiation Generation
	Dr. N. K. Swami Naidu Assistant Professor	Power Electronics, Renewable Energy Integration to the grid, Smart Grid, Power Electronic Drives, Power Quality, Hybrid Energy Storage Systems.

# Courses Offered

1. Electromagnetic Fields Applied in Electrical Machines
2. Analysis & Control of Electric Drives
3. Dynamics of Electrical Machines
4. Power Semiconductor Controlled Drives
5. Power Electronics Converter
6. Converter Applications
7. Digital Control System
8. Solar & Wind Power Technologies

# Areas of Research

1. Electric Traction Drive
2. Linear Induction Motor Drive
3. PMSM D-Q Controlled Drive
4. Decoupled Induction Motor Drive
5. BLDC Drive
6. Electric Machine Drive
7. Machine Design
8. Cogging Reduction
9. Hybrid Solar Wind Energy Drive
10. Converter Design for PFC and Torque Ripple Reduction
11. Special Electrical Drive for Electrical Vehicle Application
12. Permanent Magnet Alternator Design
13. High Speed Electrical Drives
14. Axial Flux Machines
15. PMBL DC/AC Motor Development

# Infrastructure and Lab Facilities

1. Electrical Machines & Drives Laboratory
2. CAD & Analysis of Electrical Machines
3. MATLAB
4. ANSYS-17
5. CASPOC
6. PLC
7. DSP
8. DSPACE
9. FPGA

## Ongoing MTech Projects

- SPEED CONTROL OF DFIG BASED WIND TURBINE



# Message from Prof. Incharge:

It gives me immense pleasure to extend you a most cordial invitation to participate in the Campus Recruitment Programme of the Indian Institute of Technology (BHU), Varanasi. With an increasing thrust being placed on Institute-Industry Interaction, it is my sincere belief that your esteemed organization and IIT (BHU) Varanasi will stand to gain immensely from this symbiotic relationship.

Our Institute holds the pride of place being pioneer in the field of engineering and technical education in this country and has a glorious heritage. We have been continuously ranked amongst the elite by all peers and stakeholders. Our constant pursuit of excellence has made our institute a focal point in technical education for students and faculty members alike. Admissions to the institute take place through the reputed Joint Entrance Examination (JEE) and Graduate Aptitude Test in Engineering (GATE).

At this institute, we take utmost care to groom our students according to the needs of the industry. We seek to open frontiers of knowledge and reveal new horizons of change to broaden mindset and to create positive attitude in our students. Our students receive industrial exposure by their frequent industrial visits. Besides, our undergraduate students undergo an eight-week training during summer vacation in reputed industries/institutions/organizations (in India as well as abroad) as part of their academic requirements.

We would be most delighted to host you for campus recruitment and beyond.  
I am looking forward to a mutually beneficial relationship,



**Professor Anil Kumar Agrawal**  
Training & Placement Officer, IIT (BHU) Varanasi

## Past Recruiters:



# Placement Team:

**Dr. Anil Kumar Agrawal**

Professor In-charge

Training & Placement cell

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## **Training & Placement Representative:**

**Akash Agarwal**

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