

भारतीय  
प्रौद्योगिकी  
संस्थान  
काशी हिन्दू विश्वविद्यालय



INDIAN  
INSTITUTE OF  
TECHNOLOGY  
BANARAS HINDU UNIVERSITY



## Information Brochure (2019-2020)

# M.Tech. Programme *in* Power System











## About Us:

Power system is one of the leading specialization. This deals with the generation, transmission and distribution of electrical energy. Broadly the activities of power system include load flow analysis, reactive power compensation, stability analysis; protection of equipment's and regulated distribution. Since the inception of distributed generation and transmission, a spurred growth is observed in field of power system. The specialization is providing the platform for high quality research and producing quality outputs.)

# Faculty

Profile Picture	Description ( Name, Designation )	Area of Interest
	Dr. Devender Singh dsingh.eee@iitbhu.ac.in Head of Department and Professor	Short term Load Forecasting, State Estimation, Distributed Generation, Load Modelling
	Dr. Jeewan Chandra Pandey Assistant Professor	High Voltage Engineering, Synthesis and Characterization of Polymer Nanocomposites
	Dr. Mitresh Kumar Verma Professor	Voltage Stability Studies, Applications of FACTS controllers, Power Quality, Wide Area Monitoring System, Smart Grid
	Dr. Rakesh Kumar Mishra Professor	Power Systems Operations & Control, Applications of Computational Intelligence in Power Systems
	Dr. Shiv Pujan Singh Professor	Smart Grid, Wide Area Measurement System(WAMS), Distributed generation, Security analysis, Economic operation, Congestion Management, Protection, Load forecasting, Power system optimization, AI applications in power system.
	Dr. Soumya R Mohanty Associate Professor	Distributed generation (DG) Power System and smart grid & signal processing and optimization applied to Power System Protection and application of robust control in Hybrid Power System and Micro grid

# Courses Offered

1. POWER SYSTEMS ANALYSIS
2. POWER SYSTEMS OPERATION AND CONTROL
3. HVDC AND HVAC SYSTEMS
4. POWER SYSTEMS DYNAMICS
5. ADVANCED DIGITAL POWER SYSTEMS PROTECTION
6. POWER SYSTEM TRANSIENTS
7. ARTIFICIAL INTELLIGENCE
8. SOLAR AND WIND POWER TECHNOLOGIES

# Areas of Research

1. SMART GRIDS
2. RENEWABLE ENERGY SOURCES INTEGRATION
3. NUMERICAL PROTECTION OF POWER APPARATUS AND SYSTEMS
4. ENERGY MANAGEMENT
5. STATIC VAR COMPENSATION USING FACT DEVICES
6. AI AND ANN APPLICATIONS
7. STABILITY ANALYSIS
8. HVDC CONTROL TECHNOLOGY AND HIGH VOLTAGE ENGINEERING
9. LOAD FLOW CONTINGENCY ANALYSIS, STATE ESTIMATION AND OPTIMAL OPERATION
10. DISTRIBUTION SYSTEMS: MODELLING, OPERATION, CONTROL AND AUTOMATION
11. INSULATION COORDINATION AND ENVIRONMENTAL STUDIES
12. SOLAR POWER FORECASTING
13. POWER QUALITY IMPROVEMENT
14. NANO DIELECTRICS: SYNTHESIS, CHARACTERISTICS AND APPLICATIONS
15. BLOCKCHAIN TECHNOLOGY IN DE-REGULATION STUDIES
16. CYBER SECURITY IN SMART GRIDS



# Infrastructure and Lab Facilities

1. POWER SYSTEMS LABORATORY
2. ELECTRICAL MEASUREMENT LABORATORY
3. HIGH VOLTAGE ENGINEERING LABORATORY
4. SMART GRIDS LABORATORY
5. POWER SYSTEM PROTECTION LABORATORY
6. SIMULATION LABORATORY EQUIPPED WITH SOFTWARES OF LATEST VERSIONS
  - MATLAB
  - DIGSILENT POWER FACTORY
  - GAMS
  - PSCAD
  - NepLan
  - OpenDSS
  - RSCAD

## Ongoing MTech Projects

1. NANO COMPOSITES.
2. INSULATION CORDINATION.
3. MASTER/SLAVE CONTROL FOR P-Q CONTROL IN MULTI DER MICRO GRID USING SLIDING MODE CONTROLLER.
4. PEER TO PEER(P2P) ENERGY TRADING USING BLOCKCHAIN TECHNOLOGY
5. CONGESTION MANAGEMENT USING FACT DEVICES.
6. STUDY OF IMPACTS OF RAMPING INFLEXIBILITY OF CONVENTIONAL GENERATORS AND RENEWABLE ENERGY FORECASTING USING BIGDATA ANALYTICS.

# 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

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