The Department of Electrical Engineering (EE) is one of the major Departments of IIT Bombay since its inception in 1958. The department is very active in teaching and research in different areas of EE. The department is considered to be one of the most progressive department in the Institute, with its bars / cut-offs for various academic activities set higher than the institute prescribed limits.

The department has currently seven research specializations, (i) EE1: Communications and Signal Processing, (ii) EE2: Control and Computing, (iii) EE3: Power Electronics and Power Systems, (iv) EE4: Microelectronics and VLSI, (v) EE5: Electronic Systems, (vi) Integrated Circuits & Systems, and (vii) Solid State Devices. The department has hired several young faculty members in last ten years in almost all the areas. It strives to conduct advanced research in all above areas. The department also adapts state of the art teaching methodologies for post-graduate instructions. The department is actively engaged in research areas ranging from practical implementation to theoretical investigations.

There has been tremendous development in the Department in the last five years. In 2019 two more specializations, Integrated Circuits & Systems and Solid State Devices have been started in the department, making the total number of specializations equal to seven. The department has hired several young faculty members in last few years, making the total number of faculty members in the department equal to 63. The faculty members are working in different disciplines of EE as well as carrying out interdisciplinary research.

Faculty members of the Department are recipients of many distinguished awards such as Shanti Swarup Bhatnagar Prize, Prof. K. Sreenivasan Memorial Award, Prof. SVC Aiya Memorial Award, Dr. Vikram Sarabhai Research Award, Ram Lal Wadhwa Award, INAE Young Engineer Award, Alexander von Humboldt Fellowship and many others. Many faculty members are Editors of IEEE and other national and international journals. They are also Fellows of organizations like IEEE, IETE, INAE, IASC, NASI and INSA.

The department has received generous contributions from several donors in the past. The department received major donation from one of its alumni- Girish Gaitonde in the year 2000. Ministry of Human Resources Development, Department of Electronics and Information Technology, Bhabha Atomic Research Centre, Department of Science and Technology, Defence Research Development Organization, Indian Space Research Organization, Mahanagar Telephone Nigam Ltd, Bharat Sanchar Nigam Ltd, L&T Infotech, Tata Teleservices, Bharti, Texas Instruments, Intel, Microsoft Research, Tata Consultancy Services, Applied Materials (USA) and Hitachi (Japan) are the major funding agencies. Total 183 research grants costing about Rs. 317.6 Cr has been received by the department in the last five years. Significant funding which have made valuable contributions to the department are as follows:
• Center for Excellence in Nanoelectronics (with support from Ministry of Communications and IT) setup in 2005.
• National Center for Photovoltaic Research (with support from Ministry of New and Renewable Energy) setup in 2010.
• Tata Teleservices IIT Bombay Center for Excellence in Telecom (with support from Tata Teleservices and Department of Telecom) setup in 2008.
• Power Anser Lab (with support from Tata Consultancy Services) setup in 2007.
• Girish Gaitonde Lecture Hall Complex (with donations from Mr Girish Gaitonde) setup in 2000.
• Wadhwani Electronics Lab (with donations from Mr. Romesh Wadhwani) setup in 2001.
• L. R. Gadre Wireless Complex (with donations from Mr. Aniruddha Gadre) setup in 2004.
• Bharti Center for Communication (with support from Bharti Foundation) setup in 2009.

The research outcomes have been published in the form of 908 journal papers and 934 conference papers, in last five years. Further, the total number of patent applications filed during last five years is about 171.

The Department mission is:

1. To serve the technical R&D and educational needs of the nation and international professional community (service)
2. To develop an academic and professional system to enable excellent research and researchers (individual development)
3. To engage, lead and collaborate with education and technology network towards building seamless technology and human resource development system. (ecosystem development)
Department of Electrical Engineering

Indian Institute of Technology Bombay

Presented by – Prof. B. G. Fernandes (Head)
ee@iitb
Among the largest Electrical Engineering departments in the country

- Over 1300 students
- 66 faculty, 34% increase in faculty strength over the last 10 years
Research Areas

Communication and Signal Processing

Solid State Devices

Control and Computing

Integrated Circuits and Systems

Power Electronics and Power Systems

Electronic Systems
Selected Centres and Labs

- National Centre for Photovoltaic Research and Education (NCPRE)
- Wadhwani Electronics Lab
- Centre of Excellence in Nanoelectronics
- Medical Deep Learning and Artificial Intelligence Lab (MeDAL)
- Texas Instruments Digital Signal Processing Lab (TIDSP)
- Tata Teleservices IITB Centre of Excellence in Telecommunications
Increase in Focus on R&D

- Multiple high profile labs and centers of research and excellence
- Significant increase in number of research scholars, publications and patents
- 183 research projects totalling about Rs. 317 Cr in last 5 years
Entrepreneurship: Faculty startups

Startups incubated by EE faculty members and students

- Vegayan Systems
- EISODUS Networks
- Powai Labs
- NANOSNIFF
- SensiBol
- PROXIMAL SOILSENS
- Power Anser Labs