

Indian Institute of Technology Indore

Advertisement for Admission to Ph.D. Program in Electrical Engineering (EE) for Spring Semester of Academic Year (AY) 2023-24

(IN-PERSON WALK-IN INTERVIEW Under All Admission Categories)

IIT/Acad/PhD Admissions/23-24

October 6, 2023

IIT Indore invites applications from highly motivated and research-oriented students for admission to its PhD program in the Department of Electrical Engineering for the Spring Semester of Academic Year (AY) 2023-24 as per the below-mentioned categories of admission and time schedule. Candidates can visit the profiles of the faculty members listed below at the link: <http://ee.iiti.ac.in/faculty.html> before applying.

Categories of admission (for Indian and International applicants): Refer to the main PhD advertisement available at <https://academic.iiti.ac.in/phdadvtd.php>

Time Schedule of PhD selection process:

Last date of online application through https://academic.iiti.ac.in:8443/nregistration.jsp (for Indian applicants)	November 13, 2023 (Monday) Latest by 24.00 hrs. IST
Last date of online application through https://academic.iiti.ac.in:8443/nregistration.jsp (for International applicants)	November 13, 2023 (Monday) Latest by 24.00 hrs. IST
Dates of PhD selection process (Written Test and Interviews)	November 21, 22, and 23, 2023 (Tuesday, Wednesday, and Thursday)

Minimum Educational Qualifications (MEQs) and Qualifying Examination

For Indian Applicants: Master's degree in Electrical/ Electronics/ Electronics & Communication / Physics / Instrumentation and Control Engineering / Material Science & Engineering / Mathematics or any other equivalent degree with specialization in the areas of communication and signal processing or micro/nanoelectronics & VLSI area or power electronics and power systems/control systems (with first division as defined by the awarding Institute/University) having GATE qualification in EE/EC/IN/PH subjects or UGC-NET-LS qualification or UGC/CSIR/DBT - JRF qualification or DST INSPIRE fellowship or Equivalent fellowship. Candidates having only GATE qualification in EE/EC/IN/PH papers or UGC-NET-LS qualification may be considered under FA (Project) mode as per funding agency rules, if any faculty members are having JRF/SRF vacancies under sponsored projects.

OR

Four-year Bachelor's degree OR five-year integrated degree in Electrical Engineering/ Electronics and Communication Engineering OR Electrical & Electronics Engineering/ Instrumentation & Control Engineering / Engineering Physics (with first division as defined by the awarding Institute/University) AND valid GATE qualification in EE/EC/IN/PH or UGC-NET-LS qualification or UGC/CSIR/DBT - JRF qualification or Equivalent fellowship. Candidates having valid GATE qualification in EE/EC/IN/PH papers or UGC-NET-LS qualification may be considered under FA (Project) mode as per funding agency rules, if any faculty members are having JRF/SRF vacancies under sponsored projects.

For International Applicants:

MEQ: Master's degree in Electrical Engineering with specialization in either Communications & signal processing/ VLSI/ Nanoelectronics/ Image processing/ Speech processing/ RF-Microwave / Power electronics / Power systems / Control systems or any other related areas (with first division as defined by the awarding Institute/University)

QE: Valid TOEFL/IELTS or equivalent qualification OR valid GATE qualification

Important Instructions:

- All eligible candidates, fulfilling the minimum eligibility criteria, must apply online through the website (<http://academic.iiti.ac.in:8080/nregistration.jsp>).
- After applying online, the signed application form along with the following documents should be sent by email to admission-ee@iiti.ac.in
 - Self-attested photocopies/scanned originals of all relevant supporting documents such as **degree certificates, mark sheets from 10th class onwards, date of birth certificate, fellowship award letter, GATE score card UGC-NET Score card, etc., that they wish to present before the selection committee.**
 - Two recent passport size photographs.
 - Receipt of fee (Rs.100/-) paid through SBI i-collect.
 - Letters of recommendation duly signed by a minimum of **two referees**, who have known the applicant in a professional capacity, are mandatory for PhD selection process and must be sent directly to admission-ee@iiti.ac.in
The format of the recommendation letter can be found along with this advertisement. If the above documents/certificates and recommendation letters are not received by email before the application deadline, then the candidates may not be considered for the selection process.
- Important: DO NOT** send any form or documents by post.

4. PhD written test and interviews shall be conducted on **November 21, 22, and 23, 2023**. Eligible candidates who have submitted online application (before the last date) and fulfil the minimum eligibility criteria are strongly encouraged to report at **9.30 AM** on **November 21, 2023** at **POD 1B, Room No. 101, Basic Electrical Engineering Lab, IIT Indore, Simrol, Indore 453552**. The selection process will commence at 10.00 AM. **Candidates must take a note that no separate email/communication will be sent to applicants regarding shortlisted candidates and PhD selection process. No communication in any form regarding accommodation, change of date, syllabus of written test and/or interview, request for conducting online interviews, etc. will be entertained.**
5. The selection process may extend up to 23rd November 2023. So the candidates are therefore requested to make necessary travel and accommodation arrangements accordingly.
6. **Prospective candidates also should bring along the documents (original and photocopies) mentioned in instruction 2 on November 21, 2023 to present before the selection committee failing which they may not be considered for the selection process. The recommendation letters from the referees shall be either brought in a sealed envelope or the referees can directly send the reference letters to admission-ee@iiti.ac.in before the application deadline.**
7. No TA/DA will be paid for attending the PhD selection process. Candidates also must make their own accommodation arrangements.
8. Candidates who wish to appear for the PhD selection process and fulfill the eligibility criteria may also send their Resume/CV to the faculty member whose area is of interest to them. The areas of interest and detailed profile of faculty members are given below. Candidates are encouraged to visit webpage of faculty member listed below to know more about ongoing research work and areas of interest.
9. Mere fulfillment of the minimum eligibility criteria does not entitle anyone for admission into the PhD program in Department of Electrical Engineering.



Prof. Santosh Kumar Vishvakarma

Dr. Santosh Kumar Vishvakarma is leading “Nanoscale Devices, VLSI Circuit and System Design” research group at IIT Indore. His research interests are VLSI Circuit and System design including ASIC/SoC Design of Processor Design for Biomedical Application; Energy-Efficient and Reliable SRAM Memory Design; Enhancing Performance and Configurable Architecture for DNN Accelerators; SRAM based In-Memory Computing Architecture for Edge AI; Reliable, Secure Design for IoT Application and Design for Reliability; Silicon Photonics Circuits; and Quantum Logic and Circuits. He has a very strong collaboration in Industry and Academia across India and globe. As of now, 18 PhD scholar has been graduated and 06 Indian patents has been granted from his research group. For details, please visit: <http://www.skvishvakarma.com/>. He may be contacted at his email id skvishvakarma@iiti.ac.in



Prof. Shaibal Mukherjee

Hybrid Nanodevice Research Group (HNRG) led by Prof. Shaibal Mukherjee needs sincere and motivated PhD students to work in **RRAMs in Image Processing, AI / ML; 2D Quantum Materials for IoT Sensors; HEMT-based Converters for Electric Vehicles (<http://hnrq.iiti.ac.in/>)**. HNRG has strong collaboration with industries and academia in India and in the USA, KAUST, Russia, France, Portugal, Israel, Italy, Japan, Australia, Taiwan, and Germany. **Candidates, having expertise in MATLAB / CAD / Verilog / PSpice or cleanroom experimentations are desirable.** Till date, 18 PhD students have graduated by completing their research at HNRG and are successfully placed in IIT, IMEC, NITs, IIITs, UK, and Japan (http://hnrq.iiti.ac.in/phd_graduated.php). For details, contact at shaibal@iiti.ac.in



Prof. Vipul Singh

Dr. Vipul Singh’s research group MNRG focuses on wide range of topics primarily related to **Organic electronics, Oxide based semiconductors, LSPR effect, Optoelectronic devices, Bio/chemical/gas sensors, synthesis of nanostructured materials**. MNRG strives for academically brilliant and motivated candidates having past background in Electrical/Electronics/ Instrumentation engineering/ Material Science & Engineering and Applied Physics and having passion to pursue research at the forefront of nanoelectronics and allied areas. Fellowship awardees are encouraged to apply to our group under FA category. For more details please visit our homepage: <http://www.iiti.ac.in/people/~vipul/> , for more details contact me at vipul@iiti.ac.in



Prof. Abhinav Kranti
(akranti@iiti.ac.in)

Low Power Nanoelectronics Research Group is engaged in pioneering research on capacitorless DRAM, steep switching transistors, material-device-circuit co-design and vertically stacked transistors, all of which are essential for the development of next generation logic and memory technology. The group has very strong collaborations with leading international researchers, and after completing PhD, students often receive offers for post-doctoral positions abroad. Exceptionally talented and motivated candidates, with strong interest in Semiconductor Devices, CMOS, Nanoelectronics, Biosensors, VLSI and Circuit Design intending to work on emerging research problems are strongly encouraged to apply. For more information, please visit: <http://iiti.ac.in/people/~akranti/>



Prof. Vimal Bhatia

Prof. Bhatia is leading collaborations with researchers from the **UK, Ireland, Sweden, Finland, Taiwan, Canada, Czech Republic**, and the **US**, with more than 350 peer-reviewed publications, 6 patent granted and 18 PhD thesis has been submitted. Research on a) Performance analysis of 6G communications, b) OFDM, MIMO, NOMA, Cognitive Radio, Visible Light Communications, Intelligent Reflecting Surfaces, Quantum Communications c) Image processing, biometry, d) Machine and Deep Learning algorithms. Candidates with background in **Communications/Signal Processing/Mathematics/Statistics/Electronics/Electrical Engineering/Computer Science or equivalent** are encouraged to apply with possibility of research stay abroad. Former students placed in IIT, NIT, IIIT, PDEU, Australia, Canada, UK, EU, and Qualcomm. For details (<http://iiti.ac.in/people/~vbhatia> and Email at: vbhatia@iiti.ac.in)



Prof. Mukesh Kumar

Dr. Mukesh Kumar is leading **Optoelectronic Nanodevice Research Laboratory** (Opto Nano Group). His research interests include **Optoelectronic Devices, VLSI Technology, Microwave Photonics, Nanoelectronics, Integrated Photonics and Device Fabrication**. He has supervised 10 PhD-scholars so far. He is also serving as an adjunct-faculty at Purdue School of Engineering & Technology, IUPUI, USA. His research-group has ongoing-research-collaborations with leading-scientists in India, France, UK, Russia, South Korea, Germany, and USA. He is looking for motivated and hard-working PhD-candidates who are with a background in **Electronics and related** areas and are interested to work in the above-mentioned research-areas. For further details, please visit <http://iiti.ac.in/people/~mukesh.kr>. Contact: mukesh.kr@iiti.ac.in



Prof. Ram Bilas Pachori

Prof. Ram Bilas Pachori works in the areas of Signal and Image Processing, Biomedical Signal Processing, Non-stationary Signal Processing, Speech Signal Processing, Brain-Computer Interfacing, Machine Learning, and AI and IoT in Healthcare. He has 307 publications which include journal papers (189), conference papers (82), books (10), and book chapters (26). His publications have approximately 15,000 citations with an h-index of 66 as per Google Scholar. He has supervised 18 Ph.D. students for their theses. He is looking for the Ph.D. students to work in the above mentioned research areas. Please visit his homepage for more details: <http://iiti.ac.in/people/~pachori/>



Dr. Saptarshi Ghosh

Dr. Saptarshi Ghosh is leading the research group in **Applied Electromagnetics Laboratory** at the Department of Electrical Engineering, IIT Indore, India. His areas of research interest include electromagnetics, frequency selective surfaces, metamaterials, absorbers, antennas, and other microwave devices. He is also working on various cutting-edge technologies, such as 3-D printing, Inkjet printing, and 5G wireless communication. Motivated candidates, having a strong background in Electromagnetics and related areas, are highly encouraged to apply. For more information and recent publications, please visit the weblink: <http://iiti.ac.in/people/~sghosh/>



Prof. P. K. Upadhyay

Prof. Prabhat Kumar Upadhyay is leading a Wireless Communication (WiCom) Research Group at IIT Indore. The WiCom group is intended to conduct fundamental and applied research to cater to the emerging needs of the next-generation wireless communication systems. The various research projects are technically and financially supported by MeitY, CSIR, and DST. The group is also involved in collaborative research with peers from top foreign universities. The broad research areas of WiCom group are cooperative & cognitive radio, IRS, satellite communications, UAV communications, physical layer security, IoT networks, molecular communications, AI and ML techniques. Motivated and interested PhD candidates to work in WiCom group are encouraged to apply. For more details, please visit the website: <https://iiti.ac.in/people/~pkupadhyay/> (E-mail: pkupadhyay@iiti.ac.in).



Prof. Trapti Jain

Dr. Trapti Jain's research group at IIT Indore works on various operational issues related to smart grid. The applicant has to work on cyber-security in smart grid. The applicants having a strong background in power systems would be preferred. The applicants should be highly motivated with an excellent academic record and good programming skills. For more details, please visit the following websites. URL. <https://people.iiti.ac.in/~traptij/> Research Group: <https://poweriiti.weebly.com>



Dr. Subhadeep Paladhi

Dr. Subhadeep Paladhi is leading the research in the area of **Power System Protection** in the Department of Electrical Engineering at IIT Indore, with a focus on the growing large-scale integration of converter-interfaced renewable energy sources in power systems. Prior to joining IIT Indore, he was with the University of Strathclyde, Glasgow, UK. Highly motivated candidates with excellent academic records are encouraged to apply and may contact him through spaladhi@iiti.ac.in. For more details, visit: <https://sites.google.com/view/subhadeep-paladhi>



Dr. Sumit Gautam

Dr. Sumit Gautam joined the Department of Electrical Engineering at IIT Indore in Dec'21. He has prior working experience in both industry and academia. His research interests pertain to (but not limited to): Simultaneous Wireless Information and Power Transmission (SWIPT), Wireless Energy Harvesting Methods, Wireless Edge-Caching based cooperative networks, Fronthaul load management: 5G-and-beyond/6G Wireless Communications, and Intelligent Reflecting Surface (IRS)-assisted SWIPT. Interested candidate(s) with good background in Communications/Signal Processing/Mathematics (Optimization Theory)/Computer Science (good coding skills in MATLAB/Python/C++) or equivalent is/are highly encouraged to apply. For more information about his works, please visit: <https://sites.google.com/site/sumitgautamjbp/home>, or kindly write to him at: sumit.gautam@iiti.ac.in



Dr. Rinkee Chopra

Dr. Rinkee Chopra joined the Electrical Engineering Department at IIT Indore in May 2023. Prior to this, She was working with IIT Bhilai, IIITDM Kancheepuram, VJTI Mumbai, Skiify Solutions and IIT Bombay for research, academics and industrial exposure. She obtained her Ph.D from IIT Bombay in 2020. Her research interest includes RF and Microwave components, millimeter wave antenna and arrays, multiband, broadband endfire and broadband circularly polarized antennas, filtering antennas, RF transceiver components, filters, couplers, amplifiers etc. Motivated candidates with a good background in RF and Microwave are highly encouraged to apply and contact me through rinkee@iiti.ac.in.



Dr. Swaminathan R

Dr. Swaminathan's (swamiramabadran@iiti.ac.in) **Future Generation Communication Systems research group** works on 6G Wireless Systems, Space-Air-Ground Integrated Networks (SAGIN), Blind Receiver Design using Machine/Deep Learning Techniques, Intelligent Reflecting Surfaces (IRS) Aided FSO/RF/THz Communications, etc. Dr. Swaminathan is the author or co-author of more than 60 IEEE Journal and Conference publications. Interested candidates who are having background in Wireless Communications, Signal Processing for Communications, Coding Theory, etc. as well as good in programming are encouraged to apply. Please visit <https://swamiramabadran.wixsite.com/website>



Prof. Vivek Kanhangad

Dr. Vivek Kanhangad's research group at IIT Indore conducts theoretically sound and application-oriented research in the overlapping areas of image analysis, computer vision, and deep learning with a focus on biometrics and biomedical applications. Specifically, the areas of our current research include video analysis using deep learning for the safety of autonomous vehicles, high-resolution fingerprint matching, biometric solutions for smartphones, and drone-mounted-radar signal processing. The applicants should be highly motivated with an excellent academic record and programming skills. For more details, please visit <http://iiti.ac.in/people/~kvivek/>

For any queries, please contact:

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