Indian Institute of Technology Indore

Advertisement for Admission to Ph.D. Program in Electrical Engineering (EE) for Autumn Semester of Academic Year (AY) 2020-21

IIT Indore invites applications from highly motivated and research-oriented students for admission to its PhD program in the Discipline of Electrical Engineering for the Autumn Semester of Academic Year (AY) 2020-21 as per the 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/phdadvt.php

NOTE: Candidates who have applied against the previous advertisement in the month of March 2020, the interviews for which could not take place due to COVID-19 pandemic, will be considered for this round of selection process and need not apply again. However, the terms of reference of this advertisement will be applicable for the selection process. For this round of selection, the interviews of shortlisted candidates will be conducted online.

Time Schedule of PhD admission:

<table>
<thead>
<tr>
<th>Event</th>
<th>Date/Time</th>
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<tr>
<td>Last date of online application through <a href="https://academic.iiti.ac.in:8443/nregistration.jsp">https://academic.iiti.ac.in:8443/nregistration.jsp</a> (for Indian applicants)</td>
<td>July 10, 2020 (Friday)</td>
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<tr>
<td>Date of online Interviews (for Indian applicants)</td>
<td>July 14 - 17, 2020 (Tuesday to Friday)</td>
</tr>
<tr>
<td>Last date of online application through <a href="https://academic.iiti.ac.in:8443/nregistration.jsp">https://academic.iiti.ac.in:8443/nregistration.jsp</a> (for International applicants)</td>
<td>July 10, 2020 (Friday)</td>
</tr>
<tr>
<td>Date of online PhD selection process (for International applicants)</td>
<td>July 14 - 17, 2020 (Tuesday to Friday)</td>
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Minimum Educational Qualifications (MEQs) and Qualifying Examination

(please refer to the main page on our academic portal Link- https://academic.iiti.ac.in/phdadvt.php)

Instructions:

1. All eligible candidates, fulfilling the minimum eligibility criteria, must apply online through the website (http://academic.iiti.ac.in:8080/nregistration.jsp).
2. After applying online, the applicants should take a print out of the application form and sign the same. The scanned copy of duly signed application form along with the following documents should be email to dpgcee@iiti.ac.in
   a) Self-attested photocopies and originals of all relevant supporting documents such as degree certificates, mark sheets, date of birth certificate, etc., from Xth class onwards. Candidates may also attach original and attested photo-copies of any other testimonials, documents or certificates that they wish to present before the selection committee
   b) Soft copy of passport size photograph.
   c) Receipt of fee (Rs.100/-) paid through SBI i-collect
   d) Letters of recommendation duly signed by a minimum of two referees who have known the applicant in a professional capacity must also be sent directly to dpgcee@iiti.ac.in. The letters are mandatory for PhD selection process and should be addressed to Chairperson, PhD Selection Committee, Electrical Engineering, IIT Indore. The format of the recommendation letter can be found along with this advertisement.
3. For SW candidates – Scanned copy of No Objection Certificate (NOC), Experience Certificate, Salary slips of last three months and Employer's PAN card must also be sent by email.
4. Important: DO NOT send any form or documents by post.
5. Only shortlisted candidates will be called for online interviews, and the same will be notified by email. No emails or communication, in any form, regarding shortlisted candidates, change of interview date, syllabus of written test and/or interview, etc. will be entertained.
6. 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 member is given below. Candidates are strongly advised to visit webpage of faculty member listed below to know about ongoing research work and areas of interest.
7. Mere fulfillment of the minimum eligibility criterion does not entitle anyone for admission into the PhD program in EE.
8. Not more than 3 Ph.D. students in the Teaching Assistant (TA) category can be enrolled for PhD under the supervision of a faculty member. There is no such restriction for other categories such as FA, SW, IS, DF, CT.
Low Power Nanoelectronics Research Group is engaged in pioneering research on Capacitorless Dynamic Random Access Memory (1T-DRAM), Steep Switching Transistors, Vertically Stacked Transistor Topologies, VLSI and Material-Device-Circuit Co-optimization for the development of next generation memory and logic 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 background in Semiconductor Devices, Electronics, Physics, and VLSI intending to work on emerging research problems are strongly encouraged to apply. For more information, please visit the web link: http://iiti.ac.in/people/~akranti/ E-mail: (akranti@iiti.ac.in)

We work on stochastic control, especially on estimation and filtering algorithms. Estimation and filtering are crucial for the modern world of sensor based technologies, where the data cannot be trusted. We develop new algorithms and apply them to aerial target tracking problems, especially for satellite and missile tracking. We also work with drones to get a real-feel of aerial vehicle based applications, such as tracking of aerial vehicle and geo-localization of an object on the earth surface. Email: abhinoy.singh@iiti.ac.in Website: http://people.iiti.ac.in/~abhinoy.singh/

Dr. Prabhat K. Upadhyay is leading a Wireless Communications (WiCom) Research Group at IIT Indore. The WiCom research 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, Government of India. The group is also involved in collaborative research with peers from the UK, France, Brazil, China, South Africa, South Korea, and Greece. The broad research areas of the WiCom group are cooperative relay communications, MIMO systems, cognitive radio, satellite communications, energy harvesting, physical layer security, molecular communications, and nano-networking. For more details, please visit the following websites: http://iiti.ac.in/people/~pkupadhyay/, http://wikom.webs.com/, http://pkupadhyay.webs.com/ E-mail: (pkupadhyay@iiti.ac.in)

Prof. Ram Bilas Pachori works on the development of new methodologies based on the non-stationary signal models for analysis and classification of biomedical signals. He also works on time-frequency analysis-based methods for speech signal processing and non-stationary signal processing. He is looking for the Ph.D. students to work in the areas of Speech Signal Processing, Biomedical Signal and Image Processing, Signal Processing, Machine Learning, Brain-Computer Interfacing, and Signal Processing for communications. Please visit his homepage for more details: http://www.iiti.ac.in/people/~pachori/

Dr. Santosh Kumar Vishvakarma is leading “Nanoscale Devices, VLSI Circuit and System Design” research group in Electrical Engineering of IIT Indore. His research interests are: VLSI Circuit and System design which includes the SRAM Memory Design; Reliable, Secure and Energy Efficient Circuits; Reconfigurable SoC including Memory, Processor, Adaptive GPU; Machine Learning Accelerators. For details, Please visit: https://sites.google.com/site/svishvakarma/. He may be contacted at his email id skvishvakarma@iiti.ac.in.
Dr. Saptarshi Ghosh’s Advanced Electromagnetic Laboratory research group at IIT Indore works on design and development of advanced microwave and mm-wave antennas, frequency selective surfaces, absorbers, metamaterials, and other periodic structures. The group is also working on various cutting-edge technologies, such as 3-D printing, Inkjet printing, and 5G 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/

Hybrid Nanodevice Research Group (HNRG) led by Dr. Shaibal Mukherjee works in advanced devices in Nanoelectronics, RRAM in image processing, Solar Cells, HFETs (http://iiti.ac.in/people/~shaibal/). HNRG has been involved in strong collaborative research activities with industries and institutions in India and in USA, Russia, France, Japan, Australia, Sweden, and Germany. Bright and inspired candidates, having a background in Physics/ Materials Science/Electronics are strongly encouraged to apply. Till date, 12 students have graduated by doing their research at HNRG. Former PhD graduates from HNRG are successfully placed in IIT, NIT, IIIT, DIAT etc (http://iiti.ac.in/people/~shaibal/phd_graduated.php). For more details, contact at shaibal@iiti.ac.in

Highly motivated and interested students can apply for this interdisciplinary project that involves working on an FPGA platform for high performance computing applications. The project is to parallelize highly complicated computations in an FPGA platform to develop a lab-on-a-chip application. The student should have strong fundamentals of micro-processors / micro-controllers and interested in C programming. This will be in collaboration with Discipline of Chemistry. For more details contact svasudevan@iiti.ac.in

Dr. Swaminathan’s (swamiramabadr@iiti.ac.in) Future Generation Communication Systems research group at IIT Indore works on Efficient Design of Space-Air-Ground Integrated Networks (SAGIN) with Hybrid Optical-RF Wireless Communications, Development of Novel Algorithms for Blind Parameter Estimation of Forward Error Correcting Codes and Interleavers, Index Modulation Techniques for Next-Generation Wireless Communications, Energy Harvesting Schemes for Integrated Optical-RF Networks, Non-Orthogonal Multiple Access (NOMA) Techniques, etc. For more details please refer to https://swamiramabadr.wixsite.com/website

Dr. Trapti Jain's research group at IIT Indore works in various operational issues related to smart grid. Currently, the focus of our group is towards data analytics in smart grid, synchrophasor applications to power systems and microgrids. The applicants having strong background in machine learning as well as 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/

Prof. Bhatia’s is working on a) ML/DL/AI algorithm development, b) OFDM, MIMO, NOMA, Cognitive Radio, Visible Light Communications for 5/6G networks, and c) Bio-inspired/Biospekkel signal processing. Bright and highly motivated candidates, having background in Communications/Signal Processing /Mathematics / Statistics / Electronics / Electrical Sciences/Electrical Engineering/Computer Science & Engineering or equivalent are encouraged to apply. The research group has collaboration with the UK, Ireland, Norway, France, South Africa, and the US. Former post-graduate students placed as faculty in IIT, NIT, IIIT, NMIMS, UK, EU, Canada and in Qualcomm. Please visit at http://iiti.ac.in/people/~vbhatia or contact at vbhatia@iiti.ac.in.

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. Fellowship awardees are to apply to our group under FA category. For more details please visit our homepage: http://www.iiti.ac.in/people/~vipul/ Email: vipul@iiti.ac.in

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 machine learning with focus on biometrics and biomedical applications. Specifically, the areas of our current research include video analysis using deep learning for safety of autonomous vehicles, high-resolution fingerprint matching, biometric solutions for smartphones, and attack detection in biometric systems. 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/.