

Indian Institute of Technology Bhubaneswar



**Information Brochure for Ph.D. Admission
under
Visvesvaraya Fellowship Scheme 2023-24**

Ph.D. PROGRAMME UNDER THE VISVESVARAYA FELLOWSHIP

1. Programme

The Institute provides facilities for cutting edge research leading to the Degree of Doctor of Philosophy(Ph.D.) under the Visveswaraya Ph.D. Fellowship Scheme for Electronics and IT, Phase II in specific areas of electronics (Electronic System Design and Manufacturing i.e., ESDM) and IT (IT/IT Enabled Services i.e., IT/ITES).

The award of the Ph.D. degree is made on the basis of satisfactory performance of a registered candidate in

- Prescribed course work, comprehensive viva voce & seminar
- Publication of original research work in reputed journals/conferences or award of patents/technology transfer etc.
- The thesis submitted by the candidate and a final viva voce. The thesis shall be thereport of research work characterized by either discovery of new facts or a new interpretation of known facts and theory, or an independent design and development,or development of new instrument/technology

2. Research Areas:

The research under this scheme will be focused in the following areas:

- **Electronic System Design and Manufacturing:** Semiconductor device design and fabrication, Sensors and biomimetic devices, Semiconducting and nanostructured materials, System-on-chip design, Analog and digital CMOS IC design, RF and mixed signal IC design, Electric Vehicle Subsystems, Power Management Circuits, Power Semiconductor Devices, 3D-NAND Flash Memory, Semiconductor Device Modeling and Simulation, Emerging Nanoscale Devices, advanced communication systems and wireless communications, Thermal management of electronics, RF and Microwave Circuits, VLSI Architecture Design, Reconfigurable Computing, AI Hardware accelerators.
- **IT/IT Enabled Services:** Artificial Intelligence, Machine Learning, Natural Language Processing, Internet-of-Things, Cyber-Physical Systems, Multi-Robot Systems, Distributed Systems, Algorithms, Computer Vision, Visual Surveillance, Intelligent Transportation Systems, Software Defined Networks, Cryptography and Network Security, Formal Methods for Testing and Verification, Languages, Compilers, High Performance Computing Architecture, Systems for extended reality, Low-power embedded and high-performance computing systems, Generalizable and scalable specialization for domain-specific systems, TinyML, Edge Computing, Speech and audio signal processing

3. Eligibility Criteria for Admission:

1. M. Tech./ME or equivalent degree in appropriate disciplines, with minimum 60% marks or 6.5 CGPA (in a 10-point scale). The candidate must be GATE qualified in an appropriate discipline.

OR

B Tech/BE or equivalent degree in appropriate disciplines with minimum 70% marks or 7.5 CGPA (in a 10-point scale). The candidate must be GATE qualified in an appropriate discipline.

2. Minimum 60% marks or 6.5 CGPA (in a 10-point scale) required in all other examinations from Class 10 onwards. A single relaxation up to 5% marks in secondary/higher secondary/equivalent is permitted.

3.1. Minimum qualifying degree required for seeking admission to the Ph.D. program

a) M. Tech (Master of Technology) / MS / ME (Master of Engineering)/ M.Sc (Engg.)

OR

b) B. Tech (Bachelor of Technology)/ BE (Bachelor of Engineering)/ B.Sc (Engg.)

GATE/NET Disciplines for Ph.D. admission

Electrical Engineering	Electrical Engineering (EE) Instrumentation (IN)	Electronic Science (Code-88)
Computer Science and Engineering	Computer Science and Information Technology (CS)	Computer Science and Applications (Code-87)
Electronics and Communication Engineering	Electronics and Communication Engineering (EC) Instrumentation Engineering (IN) Electrical Engineering (EE)	Electronic Science (Code-88)
Mechanical Engineering	Mechanical Engineering (ME)	

3.2 Financial support for Visvesvaraya fellows

- Fellowship: Rs. 38,750 per month in 1st & 2nd year and Rs. 43,750 per month in 3rd, 4th and 5th years of Ph.D. (support till PhD completion or 5 years whichever is earlier).
- Reimbursement of Rent (RoR): This component is linked with the fellowship of PhD Candidate. The rate of RoR is 24%, 16% & 8% (of fellowship) for X, Y & Z class cities/towns respectively. The classification of the cities is as per the notification issued by the Ministry of Finance for the reimbursement of HRA.

- Institutional Overheads: An amount of Rs. 25,000/Year/Full-time PhD candidate for support duration of PhD candidate to be given to the institution. The institutional overheads will be released after completion of required tenure by the respective candidate on pro-rata basis.
- Research Contingency Grant Support: An amount of Rs. 1,20,000/Year/Full-time PhD candidate for support duration of PhD candidate as per following guidelines:
 - Out of Rs. 1.20 Lakh/ year, up to Rs. 30,000/- may be availed by the institute for respective PhD Candidate's miscellaneous expenses relevant to research work- e.g., Books / Documents, Equipment / Software, Consumables / Chemical / Electronic components, prints of research papers, reports etc., Registration fee for attending Symposia/ Seminars / Conferences in India / abroad where the candidate is presenting an accepted paper, Similar items etc.
 - Proposal for Rs. 90,000/- or more up to Rs. 1.20 Lakh (the remaining amount after miscellaneous exp.) for lab equipment (excluding civil construction/expansion of the building) should be submitted to PhD Cell, DIC. It should be signed by supervisor, nodal & head of the institute.
 - The amount of Rs. 1.20 Lakh under Research Contingency Grant support would be available to the institute only after completion of tenure of one year for a particular candidate and likewise on pro-rata basis.
 - The proposal should clearly specify the utility & role of each of the proposed equipment in research of respective PhD candidate(s). The proposal would cover the item wise cost along with total budget and minimum amount required to place purchase order and amount required at the time of delivery of equipment to the institute.
 - The eligibility/unspent balance of a particular year for each Full-time PhD candidate may be carried forward to the next year, till the candidate is supported under the scheme (5 years/PhD completion etc.).
- Support for attending International Conference: The support would be available from 3rd year of Ph.D. with following guidelines:
 - The support would cover the travel and other expenses of PhD candidates for attending international conferences, where his/her research paper has been accepted for the presentation by him/her
 - Paper presentation should be oral (not poster) in an International conference falling in approved list under Visvesvaraya PhD Scheme (subject to revision/review by Academic Committee periodically). The approved list would be uploaded on PhD Scheme portal in due course.
 - A paper of expository nature (e.g. a review paper) is not be considered
 - Grant will not be used to attend winter or summer schools.
 - The application with invitation letter of the conference to be submitted to the PhD-Cell through the institution.
 - The grant to be provided to the institution (not to the applicant) for checks & balances and submission of UC.

- Visit to Labs abroad: The support would be available from 3rd year of PhD to the selected

Full Time PhD candidates with following guidelines:

- DIC may enter into agreement with suggested labs.
- The concerned institution(s) will have to facilitate the execution of this agreement
- between DIC & the lab(s) and will also follow the administrative guidelines to be issued by DIC.
- The PhD candidate should possess a valid offer letter from such labs abroad (having agreement with the scheme implementing agency).
- The candidate may avail this support after 3 year (36 months). The candidate should complete the joint work/training at least 3 months before the completion of PhD/support period of 5 years.
- The application with invitation letter to be submitted to the PhD-Cell through the institution.
- The grant will be provided to the institution (not to the applicant) for checks & balances and submission of UC

3.3 Terms and Conditions for support of Full Time PhD Candidates

- The support will be for additional PhD candidates taken up by an institution. No support would be provided for current levels of enrolment in the PhD programme at the institutions. Transfer from other scholarship schemes would not be permitted.
- Only the candidates enrolled/registered for PhD during the period of the scheme would be eligible to apply for the financial support. This scheme will be applicable for new PhD Scholars after notification of the scheme.
- The candidate would be eligible for Fellowship for the period during which the candidate is in good standing and fulfills the requirements of the PhD successfully. The maximum period for which the support would be available for any Full-time candidate would be five years or till the completion of PhD whichever is earlier.
- The participating Institution will ensure that a candidate receiving fellowship under this scheme is not receiving any financial support for PhD from any other scheme of Government of India/States etc. at the same time, the candidates who have availed support for their PhD from any other scheme of Government of India/States etc. will automatically be disqualified for support under this scheme.
- The Ph.D. seats allotted for a particular year should be utilized in the same academic year only. The unfilled seats would be automatically pulled back to the general pool of the scheme.
- The institutions, in the event of any drop-out, need to report it to Ph.D. Cell/DIC immediately. The institutions cannot enroll a substitute candidate on their own. Only the case which are found extraordinary would be considered for a

substitute candidate's enrollment. For this consideration, the institution would require submitting adequate justification beyond the administrative checks and formalities. Any substitute enrolled by the institution without prior permission and due approval of Ph.D. Cell, DIC would not be considered for support under the scheme.

- Once the institution has recommended the candidate for award of fellowship and the same has been approved under the scheme by the competent authority the fellowship amount and eligible "Reimbursement of Rent" amount will be transferred directly to the bank accounts of the Ph.D. candidate through DBT. The institution will submit annual performance report for each candidate enrolled under the scheme. In case of non- performance of any candidate, the institution shall intimate Ph.D. Cell, DIC regarding the same. In case no such intimation is received, Ph.D. Cell, DIC will continue to transfer the fellowship directly to the bank accounts of Ph.D. candidates.
- The items of expenditure eligible to be released to the institution like Institutional Overheads, Research Contingency Grant shall be released directly to the institution.
- The amount to be released under "Support for attending International Conference" and "Visit to labs abroad" will be released as per the requirement on a case to case basis.
- The institution will be responsible for furnishing utilization certificates of the funds released to them based on the scheme parameters, and as per conditions of the sanctioned grant-in-aid.

3.4 Miscellaneous

- Collaborations with internationally reputed academics and R&D Institutions will be encouraged.
- IPR generated under the Scheme will be governed by existing rules and regulations of MeitY.
- All institutions who will participate would be subjected to Audit of their accounts/records in respect of the scheme as per government norms.
- Assets created under the scheme using the research grant to the participating Institutions would be used by Institutions for the research and development activities in these institutions after the end of the scheme.
- MeitY may make additions/deletions/modifications in these guidelines at its own discretion.
- Awarding support, it's continuation, discontinuation etc. for component(s) of the scheme would be as per the sole discretion of MeitY and would be final and binding to all the applicants seeking support/beneficiaries.

3.5 Special Notes:

- Department/Centre/School may fix additional admission criteria without compromising the eligibility criteria mentioned here.
- Mere fulfillment of the eligibility criteria does not guarantee admission to the Ph.D. programme.

- Any document will be considered as valid if that is valid on or after the date of admission.
- The decision of IIT Bhubaneswar regarding determination of equivalent degree is final and binding to all applicants.
- The funding and PhD admission are governed from time to time by Visvesvaraya Fellowship Scheme and IIT Bhubaneswar rules and regulations respectively.

Point of Contact:

For any questions related to this scheme and admission, please contact:

Academic Section

IIT Bhubaneswar

Email ID : academic.phd@iitbbs.ac.in

Phone No.: +91 674-713-4466

For any query related to online application through ERP, please contact:

ERP Section

IIT Bhubaneswar

Email ID: erp.admin@iitbbs.ac.in

Phone No.: +91 674-713-8615

For any query related to online payment of Application Fee, please contact:

Accounts Section

Email ID: fa.section@iitbbs.ac.in

Contact No.: +91 674-7134563