

Advertisement No. 2021/9

Research opportunities for exceptionally talented and strongly motivated students

PH.D. AND I-PH.D. (INTEGRATED M.SC.-PH.D.) PROGRAMME IN BIOLOGY, CHEMISTRY, COMPUTER & SYSTEMS SCIENCES, MATHEMATICS AND PHYSICS, ; PH.D. PROGRAMME IN SCIENCE EDUCATION; M.SC. PROGRAMME IN BIOLOGY (MUMBAI ONLY); M.SC. (WILDLIFE BIOLOGY & CONSERVATION) – NCBS ONLY.

The Tata Institute of Fundamental Research invites applications for admission to its M.Sc., Integrated M.Sc.-Ph.D. (I-PhD), and Ph.D. Graduate Programmes in the subjects given below:

SUBJECTS:

• **Mathematics (Ph.D. and I-Ph.D. Programmes):** • School of Mathematics, Mumbai (<http://www.math.tifr.res.in>) • Centre for Applicable Mathematics, Bengaluru (<http://math.tifrbng.res.in>).

• International Centre for Theoretical Sciences (ICTS), Bengaluru (<http://www.icts.res.in>) : **only Ph.D. Programme.**

• **Physics (Ph.D. and I-Ph.D. Programmes):**

• Department of Astronomy & Astrophysics, Department of Condensed Matter Physics & Materials Science, Department of High Energy Physics, Department of Nuclear & Atomic Physics, Department of Theoretical Physics (all at Mumbai campus) (<http://www.tifr.res.in/~sbp>). • National Centre for Radio Astrophysics (NCRA), Pune (<http://www.ncra.tifr.res.in>). • TIFR Centre for Interdisciplinary Sciences, Hyderabad [TIFR-H] (<http://www.tifrh.res.in>): Theoretical and experimental activities in physical, chemical, biological and engineering sciences, within and across disciplines. • International Centre for Theoretical Sciences (ICTS), Bengaluru (<http://www.icts.res.in>).

• **Chemistry (Ph.D. and I-Ph.D. Programmes):**

• Department of Chemical Sciences, Mumbai (<http://www.tifr.res.in/~dcs>). • TIFR Centre for Interdisciplinary Sciences, Hyderabad [TIFR-H] (<http://www.tifrh.res.in>).

• **Biology (Ph.D., I-Ph.D., M.Sc. Biology and M.Sc. Wildlife Programmes):**

• Department of Biological Sciences, Mumbai (<http://www.tifr.res.in/~dbs>): Ph.D., I-Ph.D. and M.Sc. (Biology) programmes only. • National Centre for Biological Sciences (NCBS), Bengaluru <http://www.ncbs.res.in>) : Ph.D., I-Ph.D. (Biology) and M.Sc. (Wildlife) programmes only. • TIFR Centre for Interdisciplinary Sciences, Hyderabad [TIFR-H] (<http://www.tifrh.res.in>) : Ph.D. and I-Ph.D. programmes only.

• **Computer & Systems Sciences including Communications and Machine Learning (Ph.D. and I-Ph.D. Programmes):**

School of Technology & Computer Science (STCS), Mumbai (<http://www.tcs.tifr.res.in>).

• **Science Education (Ph.D.):** Homi Bhabha Centre for Science Education, Mumbai. For admission procedure, see <http://www.hbcse.tifr.res.in>

GRADUATE SCHOOL (GS2022):

The academic year starts from August 1, 2022. **Stipend:** • **Ph.D. students** receive a monthly fellowship of Rs. 31,000/- (+ hostel accommodation OR HRA as applicable) which is enhanced to Rs. 35,000/- after registration for Ph.D. • **I-Ph.D. students** receive a monthly fellowship of Rs. 21,000/- (+ hostel accommodation OR HRA as applicable) for the first year. At the end of the first year, upon satisfactory performance, the fellowship is enhanced to Rs. 31,000/- per month (further raised to Rs. 35,000/- after registration for Ph.D.). Monthly fellowship for **M.Sc. (Biology)** is Rs. 16,000 (+HRA as applicable) and for **M.Sc. (Wildlife Biology & Conservation)** is Rs. 12,000/- (fixed).

ELIGIBILITY: (Candidates in the final year of qualifying degree can also apply).

• Mathematics:

• **For Ph.D.:** M.A./M.Sc./M.Math./M.Stat./M.E./M.Tech.

• **For I-Ph.D.:** B.A./B.Sc./B.Math./B.Stat./B.E./B.Tech. (Students already having/ completing Master's degree by July 2022 are not eligible for I-Ph.D.).

• Physics :

• **For Ph.D.:** M.Sc./M.S. in Physics, or equivalent degree, on completion of Programme(s) of duration not less than 5 years in total.

• **For I-Ph.D.:** M.E./M.Tech./B.Sc./B.S./B.E./B.Tech./B.Chem in Physics, Engineering Physics, or equivalent degree, on completion of programme(s) of duration not less than 3 years in total. Any other degree in Science / Engineering / Medicine, or equivalent, on completion of programme) of duration not less than 3 years in total.

• **Chemistry:** • **For Ph.D.:** M.Sc./B.E./B.Tech./M. Pharm. or equivalent degree. • **For I-Ph.D.:** B.Sc./B.Pharm./B.S. degree or equivalent degree. Candidates with B.E./B.Tech degrees, enrolled in the Ph.D. programme can optionally get an M.Sc. degree by fulfilling additional requirements.

• **Biology:** Candidates will be short-listed for interview based on written test marks, CV, letters of recommendation and scientific write-up. • **For Ph.D.:** Masters in Basic Science (M.Sc. Physics/Chemistry/Mathematics/any branch of Biology) or any professional Master's Degree (M.Pharm/M.Tech.), or a > 4-year degree programme (e.g. MBBS, BDS). Students holding an M.Sc. degree in a non-Biology-allied discipline such as Chemistry/ Physics/ Mathematics/ Computer Science, and who wish to obtain an M.Sc. in Biology, will be offered the option of enrolling in the I-PhD programme at the time of joining. • **For I-Ph.D./M.Sc.:** Bachelors in any Basic Science (Physics/Chemistry/Mathematics/

any branch of Biology) OR any 4-year degree programme that awards a "Bachelor's degree" including B.Tech., B.E., B.V.Sc., B.Pharm. (4 year course).

• **For M.Sc. (Wildlife Biology & Conservation):** Indian nationals who have a Bachelor's degree in any discipline (with a minimum of 50% in core subjects) and a strong interest in wildlife research and conservation. Graduate nationals from Central, South and Southeast Asian countries, with similar qualifications are also eligible to apply.

The TIFR Nationwide Entrance Examination (GS-2022) for Biology is also called the Joint Graduate Entrance Examination for Biology and Interdisciplinary Life Sciences (JGEEBILS). See <http://www.ncbs.res.in/JGEEBILS>. All participating institutions use the result from this examination as a part of their admission process. Students need to apply separately to each JGEEBILS participating institution.

• **Computer & Systems Sciences (including Communications and Machine Learning):**

• **For Ph.D.:** B.Tech./B.E./B.Sc. (4-year degree)/M.Tech./ M.E./ M.C.A./M.Sc. or any other equivalent degree in Computer Science /Electronics & Communications Engineering/Electrical Engineering or related branches. Exceptionally well qualified students with a B.Tech./ B.E./ B.Sc. (4-year degree)/M.Tech./ M.E./M.Sc. degree in other disciplines may also be considered. Candidates not holding a master's degree can obtain an M.Sc. degree by fulfilling the prescribed requirements during their Ph.D. programme.

• **For I-Ph.D.:** B.Sc. (3-year degree) or any other 3-year degree in Computer Science/Electronics & Communications Engineering/Electrical Engineering or related branches. Exceptionally well-qualified students with a 3-year undergraduate degree (B.Sc.) in related subjects may be considered for the I-Ph.D. programme. Candidates in the I-Ph.D. programme will need to fulfil the requirements for both an M.Sc. and a Ph.D.; upon successful completion, they will receive both degrees.

ADMISSION PROCEDURE: The admissions procedure (in all subjects except Science Education) consists of an online test at one of the several nationwide centres followed by interviews and/or second written test of shortlisted candidates depending on the subject/programme. The online test will be held on Sunday, December 12, 2021 in the following cities: Agartala, Ahmedabad, Amritsar, Bangalore, Bhillai, Bhopal, Bhubaneswar, Burdwan, Chandigarh, Chennai, Cochin, Coimbatore, Delhi, Guntur, Guwahati, Haldwani, Hyderabad, Indore, Jaipur, Jalandhar, Jammu, Jamshepur, Kanpur, Kharagpur, Kolkata, Kozhikode, Lucknow, Madurai, Mandi, Mangalore, Mumbai, Nagpur, Patna, Pune, Srinagar, Varanasi, Visakhapatnam.

Interviews: For information on subsequent interviews, please check our website.

GATE score based applications in Systems Science (including Communications and Machine Learning):

Engineering students with exceptional performance in GATE examination of 2020-2022 in Electrical, Electronics and Communications Engineering, Mathematics may apply for the Ph.D. Programme without appearing for the TIFR Entrance Test. The link for GATE score based applications will be made available on our website on January 31, 2022. In case a student takes the Systems Science TIFR Entrance Test and also submits a GATE score based application, the better of the two performances will be considered.

GATE/JEST/NET exam scores for Physics, Biology and Chemistry: In addition to the admissions through the nationwide examination, some admissions in Physics, Biology and Chemistry based on GATE / NET / JEST scores in the relevant subjects, and Ecology and Evolution GATE scores (NCBS only), are also possible. Details of these admission procedures, including cutoffs and application dates, will be available on the websites of TIFR-Mumbai, NCRA-Pune, NCBS-Bengaluru, ICTS-Bengaluru and TIFR-Hyderabad, as appropriate and at appropriate times.

APPLICATION PROCEDURE: Submit online applications at <http://univ.tifr.res.in>

APPLICATION FEE (Non-Refundable): **Male Applicants-** Rs. 1200/-; **Female Applicants-** Rs. 600/-. Payment can be made online by Net-banking/Credit/Debit cards/UPI etc. as per modes available on the payment gateway. Hall Tickets will be available for download only after successful payment.

A waiver of application fee on grounds of financial distress may be requested by a letter from the Principal or the Head of the Department justifying the request. Students may upload the waiver letter/request from the Principal/ HOD (on their letter head duly signed and stamped) to their online application form. These requests will be considered, depending on availability of seats in each Centre and cannot be guaranteed.

Candidates may take the online test in multiple subjects provided the timings do not clash. Please submit separate application and application fee for each subject.

Last date for Application: November 07, 2021.

NATIONWIDE GRADUATE SCHOOL ENTRANCE EXAMINATION (GS-2022): SUNDAY, DECEMBER 12, 2021,

Morning Session: Physics, Chemistry, Computer & Systems Sciences and M.Sc. (Wildlife Biology & Conservation): 9:30 a.m. to 12:30 P.M.

Afternoon Session: Biology (JGEEBILS): 2:30 P.M. to 4:30 P.M. Mathematics: 2:30 p.m. to 5:30 p.m.