INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

A Deemed to be University under de novo category

Jadavpur, Kolkata-700032

Advertisement No. **Acad/ PhD/Autumn Sem-2023** Date: 22.03.2023

Applications are invited for regular full-time PhD students to the PhD Programme in Autumn Semester of 2023 under different Schools, namely Applied and Interdisciplinary Sciences, Biological Sciences, Chemical Sciences, Material Sciences, Mathematical and Computational Sciences and Physical Sciences, of IACS (A deemed to be University). A candidate may apply to maximum two Schools by making appropriate selection in the Application Form.

Eligibility:

1. 55% or equivalent in masters is mandatory for general candidates, while for SC/ST/OBC (non-creamy layer)/Differently-abled and other categories 50% marks is necessary.
2. Minimum eligibility criteria as per UGC rules. Qualification and eligibility requirements for each School are given separately (*vide infra*).
3. Selection of the regular full-time students will be done on the basis of their academic record, their performance in the appropriate national level examination, and finally, their performance in the written test and/or interview as decided by the respective Schools.
4. Relaxation of the selection criteria for the candidates belonging to SC/ST/OBC (non-creamy layer)/Differently-abled and other categories will be levied according to the norms of UGC and Government of India.
5. Merely satisfying the eligibility criteria does not guarantee that a candidate will be shortlisted for interview.

Fellowship: As per IACS/CSIR/UGC/INSPIRE rules.

Age limit: Should be below 28 years on the date of application. Age relaxation is applicable as per Government of India rule.

Nationality: The applicant must be an Indian citizen.

Selection Procedure:

1. Applicants will be shortlisted on the basis of merit by the Schools. Only shortlisted candidates will be communicated via email and called for a written test and/or interview (to be decided by the School) towards the final selection. IACS holds full right of choosing a candidate and even not selecting any, in case suitable applications are not received.

2. Vacancies given for each School are based on number of positions available in individual research groups in different research areas. Selection depends on the past academic record, performance in examination/interview by the School and also the availability of posts in particular research areas as opted by the shortlisted candidate.

Application Procedure: Applicants may send their application form to the Academic Office, IACS (**phdcell_iacs@iacs.res.in**) along with the filled up excel file, both of which are available at http://www.iacs.res.in/maincontroller.php?navid=16&subnavid=41&resubnavid=381 by clicking "Application Form for admission to the PhD program" and "Synopsis of Applicant for admission to PhD program" respectively. Both documents should be sent together by email (**phdcell_iacs@iacs.res.in**) to the academic office by**April 15, 2023** with the subject line as "**PhD Program, IACS – Autumn Semester 2023**".
Exact date and time of Admission Test/or Interview for each School will be announced on the IACS website.

Last Date of Submission: April 15, 2023

Tentative date of interview: 02 May, 2023 to 16 May, 2023 which is subject to change according to the decision of IACS.

For further information in this regard, please contact Academic Office (Phone: 24734971; Extn: 2215, Email: phdcell_iacs@iacs.res.in).

Application/Examination Fees: Rs. 1200/- (Rs. 600/- for SC/ST candidates) will have to be transferred electronically to the account of IACS (Name of the Account: Indian Association for the Cultivation of Science University, A/C no: 37739525415, State Bank of India, Jadavpur University Branch, Branch Code: 0093. IFSC: SBIN0000093). The electronic transfer reference number should be mentioned in the application form.

Mode of Payment: Payment can be made through either of the following options:

1) Directly by NEFT bank transfer if an applicant can avail Online Banking facility;

2) By depositing the amount at any SBI Counter having CBS facility.

Fees to be paid:

Courses	Admission Fee (Rs)	Tuition Fee (Rs)Per Annum	Other Academic Fee (Rs)	Caution Deposit (Rs)	Students' Emergency Fund (Rs)	Contributory Medical Scheme (Rs) per Annum	Total fees to be paid at the time ofAdmission (Rs)
PhD (Direct Admission) (General/OBC Candidate)	15000	13800	5000	10000 (Refundable on completion of curriculum)	1000	3000	**47800**
PhD (Direct Admission) (SC/ST Candidate)	15000	0	5000	10000 (Refundable on completion of curriculum)	1000	3000	**34000**

Details of the PhD positions and the qualification and eligibility details for the different Schools are given below.

School of Applied and Interdisciplinary Sciences (SAIS)

Number of vacancies	Broad Research Area (**SubjectCode**)	Essential Qualifications
1	Physical Properties of Polymers (**SAIS 01**)	MS / M. Sc. in Chemistry with CSIR-NET (JRF) or other fellowships.
1	Polymer and Supramolecular Chemistry (**SAIS 02**)	MS in Chemistry with external Fellowship like CSIR, UGC, DST Inspire etc.
1	Inorganic nanocrystals synthesis and applications (**SAIS 03**)	MS /M. Sc. in Inorganic Chemistry with CSIR-NET (JRF) or other fellowships. Exceptional candidate may be considered for Institute fellowship.
1	Supramolecular assemblies (**SAIS 04**)	MS /M. Sc. in Physical Chemistry or Physics with CSIR-NET (JRF) or other fellowships. Exceptional candidate may be considered for Institute fellowship.
1	Ferroelectric switching of Perovskite nanocrystals (**SAIS 05**)	MS /M. Sc. in Physical Chemistry or Physics with CSIR-NET (JRF) or other fellowships. Exceptional candidate may be considered for Institute fellowship.
1	Organic synthesis (**SAIS 06**)	MS / M. Sc. in Chemistry with CSIR-NET (JRF) or other fellowships.
1	Cancer Biology (**SAIS 07**)	MS / M. Sc. in Biology with CSIR-NET (JRF) or other fellowships.
1	Nanofabrication for energy harvesting devices (**SAIS 08**)	M.Sc. in Physics / Chemistry with CSIR- NET (JRF) or other fellowships
1	Design and fabrication of optoelectronic devices (**SAIS 09**)	M.Sc. in Physics with CSIR-NET (JRF) or other fellowships
1	Organic synthesis of Conjugated Chromophores for active materials in optoelectronic devices (**SAIS 10**)	M. Sc. in Organic Chemistry/ Chemistry with CSIR-NET (JRF) or other fellowships
1	Device Physics of organic field effect transistors: Device fabrication and Advanced characterization. (**SAIS 11**)	M. Sc. in Physics or Physical Chemistry with CSIR-NET (JRF) or other fellowships

School of Biological Sciences (SBS)

Number of vacancies	Broad Research Area (Sub Area)	Essential qualification
1	Peptide based soft materials in health care (**SBS01**)	M.Sc. in Chemistry/Biochemistry Material Science/Applied and interdisciplinary science; The candidate must have own fellowship (CSIR/UGC and others) NET/INSPIRE qualified
1	Nanoscale Nucleic Acid Biosensors; Nanoscale Collagen-based Bioelectronics (**SBS02**)	M.Sc. in Biophysics, Chemistry, Biotechnology; Fellowship: CSIR/ UGC/DST-INSPIRE/DBT
1-2	Cancer/Coagulation Biology/Bio inspired Organic Chemistry (**SBS03**)	MSc in Biological Sciences/ MSc in Organic Chemistry (The candidate must have own Fellowship, CSIR/UGC and others)
2	Molecular Biology of DNA damage repair in Cancer and DNA Topoisomerase (**SBS04**)	MSc in Biochemistry, Microbiology, Zoology /Neurosciences, Molecular Biology etc (The candidate must have own Fellowship)

School of Chemical Sciences (SCS)

Number of vacancies	Broad Research Area **(Subject Code)**	Essential Qualifications
Total: 12 11 1 	Computational and theoretical physical chemistry: Statistical mechanics; phase transitions, emergent phenomena in complex supramolecular systems; Beyond Born-Oppenheimer theories, Reaction dynamics, Molecule-Surface Scattering; Experiment (cold chemistry/cold collision) **Faculty members taking students:** Satrajit Adhikari, Ankan Paul, Ayan Datta, Biman Jana, Debashree Ghosh, Avisek Das, Nabanita Deb **(SCS01)**	M.Sc. In Chemistry or Physics with UGC/CSIR/DST-INSPIRE
Total: 3 2 1 	Organic Chemistry Total synthesis of natural products Catalysis, reaction mechanism **Faculty members taking students:** Rajib Goswami, Joyram Guin	M.Sc. In Chemistry with UGC/CSIR /DST-INSPIRE

	(SCS02)	
Total: 10 5 5	Supramolecular, polymer and macrocyclic Chemistry Polymer, Supramolecular and crystal engineering σ-Aromatic Heterocyclic Macrocycles **Faculty members taking students:** Tarun Mandal, Pradyut Ghosh, Parthasarathi Dastidar, Harapriya Rath **(SCS03)**	M.Sc. in Chemistry with external fellowship (UGC/CSIR-JRF(8)) and institute fellowship (2: NET-LS&/or GATE under σ-Aromatic Heterocyclic Macrocycles))
Total: 7 4 2 1	Inorganic and bio-inorganic chemistry Bio-inspired chemistry Bio-inorganic chemistry of Alzheimer's disease and diabetes Reaction Mechanism **Faculty members taking students:** Tapan Paine, Abhishek Dey, Somdatta Ghosh Dey, Amit Majumdar **(SCS04)**	M.Sc. in Chemistry with CSIR/UGC/INSPIRE Fellowship

School of Material Sciences (SMS)

Number of vacancies	Broad Research Area (Subject Code)	Essential Qualifications
1	Experimental Materials Physics, Structure-Property relationship, Magnetism, Multiferroics, Quantum materials Code: SMS-01	M.Sc. In Physics/Chemistry with CSIR/UGC/INSPIRE
2	Li and Na ion Battery Materials Code: SMS-02	M.Sc. In Chemistry/physics with CSIR/UGC/INSPIRE
1	Photo/Electrochemical Energygeneration Code: SMS-03	M.Sc. in Physics/Chemistry/ Materials with CSIR/UGC
1	Optoelectronic Materials and Devices Code: SMS-04	M.Sc. in Physics/Chemistry/ Electronics with CSIR/UGC

2	Synthesis and spectroscopic characterization of nanomaterials Code: SMS-05	physical chemistry/inorganic chemistry CSIR/UGC
2	Nanobiotechnology Code: SMS-06	M.Sc. In Chemistry with CSIR/UGC
1	Catalysis over porous nanomaterials Code: SMS-07	M.Sc. In Chemistry with CSIR/UGC/INSPIRE

School of Mathematical and Computational Sciences (SMCS)

Number of vacancies	Broad Research Area	Essential qualification
1	1. Statistical mechanics, Computational physics, and Soft-matter biology (SMCS03)	M.Sc. in Physics with CSIR/UGC-NET fellowship
1	2. Applications of Natural Language Processing/ Information Retrieval (SMCS01)	Master's degree in Computer Science with UGC/CSIR-JRF qualified for fellowship.
1	3. Formal Verification of Cyber-Physical-Systems (SMCS02)	Masters in Science with major in Computer Science and Mathematics/ Master in Computer Science / B.E. or B.Tech. in Computer Science and Engineering. A valid GATE score. A minimum CGPA of 6.0 in Bachelors and Masters degree.
1	4. Machine learning / Deep learning / Natural language processing (SMCS04).	MSc / ME / MTech or equivalent in Computer Science / Computer Science and Engineering / Computer Science and Technology / Mathematics and Computing with major in Computer Science. GATE / NET qualified candidates are preferred.

School of Physical Sciences (SPS)

Number of vacancies.	Broad Research Area (SubjectCode)	Essential Qualifications
03	Experimental Condensed Matter Physics (Magnetocalorics, Electrocalorics, Multiferroics, Thin films and Heterostructures) Code: SPS-01	M.Sc. in Physics with INSPIRE/UGC-CSIR fellowship
01	"Quantum dynamics of correlated systems". Code: SPS-02	Ph. D Students
01	"Theoretical Cosmology and Particle Cosmology." Code: SPS-03	M.Sc. in Physics with a rank in JEST or CSIR/UGC NET
02	Experimental condensed matter physics: Optoelectronics of 2D semiconductors." Code: SPS-04	M.Sc. in physics with CSIR-NET/UGC/ INSPIRE awarded own fellowship
01	"Quantum Matter Out-of-Equilibrium" Code: SPS-05	Ph. D Student
03	"Theoretical Quantum Optics & Quantum Information Science." Code: SPS-06	M.Sc. in physics, NET/GATE/JEST/INSPIRE
01	"Exotic Quantum Materials (experimental)". Code: SPS-07	(UGC/CSIR/INSPIRE) awarded own fellowship.
02	"Experimental condensed matter physics" Code: SPS-08	NET-CSIR/UGC only
02	"Experimental Condensed Matter Physics: Magnetism under Pressure," Code: SPS-09 Experimental Condensed Matter Physics: Electronic Devices with Magnetic Semiconductors Code: SPS-10	valid GATE/JEST score NET UGC/CSIR qualified.
02	Theoretical and Computational Condensed Matter Physics: Electronic structure of Quantum Matter. Code: SPS-11	M.Sc. in Physics with (NET)/UGC(NET)/INSPIRE/GATE/JEST fellowship
02	Institute fellow (should have at least NET-LS/GATE/JEST. Code: SPS-12 JRF with his/her own fellowship (UGC/CSIR/INSPIRE) Code: SPS-13	M.Sc. in Physics with CSIR (NET)/UGC(NET)/INSPIRE/GATE/JEST fellowship
01	String theory. Code: SPS-14	graduate student with a CSIR fellowship.

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