NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL Mangaluru- 575025, Karnataka, India

INFORMATION BULLETIN





Selection for Institutional Post-Doctoral Programme

2023

Website: <u>www.nitk.ac.in</u> Fax : 91-824-2474033 Phone : +91-824-2473005 E-Mail : dean.rc@nitk.edu.in

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NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, **SURATHKAL**

1. <u>The Institute:</u>

The National Institute of Technology Karnataka (NITK), Surathkal is rated as one of the top Institutions in India ranked #10 in NIRF. Since its inception in 1960 as the Karnataka Regional Engineering College, the Institute has established itself as a premier center engaged in imparting quality technical education and providing support to research and development activities. The Government of India as per the NIT Act 2007, declared NITs as Institutes of National Importance. The Institute is governed by the rules and statutes of the NIT Act. The Institute has a long tradition of research for several years in both traditional and modern areas of engineering and sciences in all departments. The Institute has been actively involved in application-oriented research focused in resolving problems faced by the society in several areas like environment, water resources, rock mechanics, new structures, VLSI, etc. NITK attracts students from all over the country and abroad. The Institute admits students to the B.Tech degree program on the basis of the Joint Entrance Examination (JEE Mains). Foreign students are admitted on various student exchange programs through MEA, ICCR, etc., and scheme of Direct Admission to Students Abroad (DASA). Scholarship seats for M.Tech programs are awarded on the basis of the Graduate Aptitude Test in Engineering (GATE), and a few seats are available for sponsored students. The institute admits students to MCA Program on the basis of NIMCET, admission to MBA is made on the basis of CAT / MAT/ GATE score and for M.Sc Program, admissions are made based upon the JAM scores. Every year the Institute admits candidates with Institute fellowships and also admits sponsored/external candidates to the doctoral program. NITK graduates are sought after by top industries/companies and the Institute has been rated as one of the best Institutions in the country with regard to student placements. In this call for applications, NITK is seeking applications from eligible candidates for institute-funded post-doctoral positions.

2. Location:

NITK is located in Mangalore City along the Kanyakumari-Mumbai National Highway 66. It is well connected by road, rail, and by air to major cities in India and a few international destinations. The Institute is located amid 300 acres of sylvan surroundings with the picturesque Western Ghat Mountains on the east and the sun-kissed sands of the Arabian sea to the west. The Mangalore (Bajpe) airport and the Mangalore Railway Station are about 20 km away from the Campus, while Surathkal Railway Station is about 3 km away from the campus. The campus is located far away from the din and bustle of a city and is very conducive for academic activities. The climate throughout the year is equitable and has a temperature range of 18 to 38° Celsius. The campus being on the sea shore is blessed with clean air and a healthy climate.

3. Computing Facilities and Campus Network:

NITK has a campus-wide network spanning the entire campus – academic buildings, guest houses, student hostels and campus residences. The campus backbone services are provided with about 20 km of 12 / 24 core OFC using 1 Gbps and 10 Gbps backbone to the different buildings and broadband to the residences. Departments, Residences (through the broadband), Directorate (and administrative net), Guest houses, and Hostels are individually connected to the core switch. The hostel networks are integrated into the academic network of NITK sharing the Internet bandwidth of the Institute. The Institute has 24 x 7 Internet connectivity. The journals subscribed through INDEST consortium are available throughout the campus LAN. In addition to this, the students can access learning material from the internet. The Wi-Fi network is provided as an extension of the wired networks in the different buildings with close to 1000 indoor access points and 40 outdoor access points, which provides transparent seamless migration of connectivity between the access points to the user. NITK has 5Gbps Internet bandwidth and is currently being upgraded to 10Gbps. The NITK Data centre acts as an integration hub of OFC/backbone. It houses Internet connections to BSNL and National Knowledge Network, associated networking equipment and has sufficient hardware to handle the critical backbone network services such as the core switch cluster, firewalls, academic and administrative servers and virtual machine hosts. Main servers are connected to the data centre network. CCC Uses Virtualization with Proxmox virtualization environment / Ubuntu System containerization environment. Data centre also houses the NITK Websites. CCC hosts a campus-4 | P a wide license to MATLAB, Simulink, and companion products. All faculty, researchers, and students are eligible to download and install these products on their university computers as well as their personally-owned computers. The network infrastructure facility management of NITK is outsourced with a help desk facility. The requirement of computing and network resources are assessed from time to time and upgraded accordingly.

4. Library Facilities:

Central Library at NITK Surathkal is the window to the world of latest information in sciences, engineering, technology & management. The library has a rich collection of print materials (1.5 lacs) on all the branches of Engineering, Science, Social Sciences, Humanities and Management. The collection includes reference books, text books, bound volumes, CDs, etc. The library subscribes core collection of print journals (100 plus), e-journals (12045), e-databases (25), e-books (11202) and others. The library is also a core member of e-ShodhSindu - a Consortia for Higher Education E-Resources which provides access to more than 10,000 qualitative electronic resources including full-text, bibliographic and factual databases to the students. E- journals available to access with various reputed online scientific databases such as American Chemical Society, American Physical Society, IoP, Royal Society of Chemistry, Emerald, Taylor & Francis, American Mathematical Society, Annual Reviews, ASME, IEEE, JSTOR, MathScinet, Nature, Science-Direct, SpringerLink, etc. The library also subscribes to premium version of Grammarly - an automated grammar tutor and revision tool for writing effective and mistake-free documents. Library offers Plagiarism Checking Service web tools for the Post-Doctoral Fellows/ Ph.D scholars and M. Tech students. Remote Access to all the e-Resources and mobile app are other important services of the library.

Library has been fully computerized with integrated web-based library management software to Koha, which enables users to search real-time book status and reservations. The library is fully air conditioned with more than 1000 seating capacity. Newly established e-Library Complex has the State-of-the-Art modern IT facilities with e-Studio for lecture capturing and live streaming facility, 2 Cyber Libraries with 50+ computers to conduct hands-on training, 2 Seminar Halls of 50+ Capacity each, 8 Discussion Rooms, dedicated Research Scholars Section, Digital Reading Rooms, Laptop Zones etc. catering to more than 7000 on campus library users 24X7 along with in-housed cafeteria.

5. <u>Post-Doctoral Fellowship</u>

Departments/ Centers offering Post-doctoral positions:

The Institute is offering Post-doctoral Fellowships in the following Departments and the Central Research Facility (CRF).

- 1. Central Research Facility (CRF)
- 2. Chemical Engineering
- 3. Chemistry
- 4. Civil Engineering
- 5. Computer Science Engineering
- 6. Electrical & Electronics Engineering
- 7. Electronics & Communication Engineering
- 8. Information Technology
- 9. Mechanical Engineering
- 10. Metallurgical & Materials Engineering
- 11. Mathematical and Computational Science

6. <u>Eligibility Criteria:</u>

- The appointee should possess a Ph.D. or equivalent doctorate degree (e.g., D. Sc), which has been obtained in the **past five years**, in the field directly related to the appointee's proposed research topic. PhD Viva should be completed or a **provisional degree certificate should be available** on or before the submission date of application.
- International researchers/ Indian citizens with foreign degrees must hold an advanced (Doctoral) degree that is equivalent to those provided by Indian Institutions. Every prospective post-doctoral candidate must have acquired his/ her Ph.D. degree from a University/ Institute recognized by the regulating authority in the respective country in which the research work has been conducted.

- Candidates working as employees/Post-doc fellows should apply through proper channel, providing a No objection certificate from the employing organization.
- •

7. <u>Selection Process (For Institute Fellowship):</u>

- The selected candidates must appear for the written test/interview conducted by the departmental post-doctoral selection committee (DPDSC), and followed by IPDSC (Institutional level post-doctoral selection committee).
- A candidate selected as a post-doctoral fellow with the institute fellowship shall be appointed for a period of two years.

8. <u>How to Apply:</u>

The Information Bulletin and Online Application portal for admission to Institutional Post-Doctoral programmes is available on the Institute website <u>www.nitk.ac.in</u>. The applicants need to register online with the portal. The registered candidates have to complete the Online Application form and pay the prescribed application fee, i.e., **Rs 500**, through the IRIS portal on or before **12**th **June 2023**.

The hard copy of the completed application form with payment receipts and copies of all necessary documents is to be submitted at the time of attending the interview.

Note: If a candidate desires to apply to more than one post-doctoral fellowship title, he/she should submit a separate APPLICATION along with the Payment Receipt of Application fee for each proposal. Candidates called for an interview will have to appear for a written test and/or interview at their own cost. The written test and/or interview will be held at N.I.T.K., Surathkal.

Calendar of Events for Selection for Institutional Post-Doctoral Programme -2023.

Last Date for Online Submission of applications and fees payment	12. 06. 2023 (Monday)
Test and/or Interview for selection	26. 06. 2023 (Monday)

9. Institutional Post-Doctoral Programme

Departments and Specialization offered for Institutional Post-Doctoral Programme are listed in Annexure-1:

10. <u>Documents to be Produced:</u>

A. At the time of counselling/written test/interview:

- 1. Original marks card of all Semesters/years of PhD/Master's /Bachelor's degree
- 2. Date of Birth Certificate in Original (SSLC / X Std.)
- 3. Degree Certificate or Course Completion certificate from college (if qualifying degree exam results are awaiting)
- 4. Caste Certificate if belonging to SC / ST (original)
- 5. EWS Category Certificate as per the prescribed format (See Appendix issued by the Competent Authority on or after 1-4-2022.
- 6. OBC certificate as per prescribed format (See Appendix) for OBC candidates. (If applicable) from the Competent Authority issued on or after 1-4-2022.
- 7. GATE / NET Score Card (if applicable)
- 8. Publication/patents first page
- 9. Persons with Disabilities (PWD) certificate, if applicable.
- 10. Updated Resume

B. Documents to be Submitted at the Time of Appointment:

- a. Appointment order issued by Competent Authority.
- b. Original marks card of qualifying examinations (First to Final Year) with two sets of duplicate copies. (The spelling and order of the name should be same in all the years of marks card, degree certificate, and Migration Certificate).
- c. Original GATE / NET Score Card (if applicable).
- d. Degree Certificate or Provisional Degree Certificate issued by the University/Institute.
- e. Sponsorship Certificate (if sponsored) in the prescribed format.
- f. Medical Certificate (general fitness).
- g. Relieving Certificate in the case of Sponsored Candidates.
- h. Date of Birth Certificate in original (X Std. or SSLC).
- i. Caste Certificate in case of SC / ST.
- j. OBC Certificate (if applicable) from the competent authority issued on or after 1-4-2022.
- k. EWS Category Certificate issued by the Competent Authority on or after 1-4-2022.
- 1. Conduct Certificate.
- m. Aadhar card copy.
- n. Persons with Disabilities (PWD) certificate, if applicable.
- o. Migration Certificate.

11. Financial Assistance for Institutional Post-Doctoral Programme:

- Each Post-doctoral Fellow selected under this scheme will be paid a fellowship of Rs. 50,000 (Rupees Fifty thousand only) per month. They will also be eligible to receive a contingency grant of Rs. 30,000 (Rupees Thirty Thousand only) per year which will be made available starting from the third month of their fellowship. Each selected PDF would be eligible to receive a fellowship for a period of **two years** from the month of appointment.
- In deserving and exceptional cases, additional resources can be allocated to supplement the contingency grant made available to the PDF. This additional contingency grant will be provided only once during the tenure of a post-doctoral fellow. Support under this provision will be limited to a maximum of Rs. 30,000 only. This request must carry strong justification and must be recommended and forwarded to the Dean (R&C) with due recommendation of the Departmental Post-Doctoral Assessment Committee (DPDAC). This will be provided subject to the availability of funds.
- No separate HRA is admissible. Accommodation shall be provided subject to availability with due charges as per institute norms.

SI.	Department	No.	Area of Research	Title of the Proposal from	Name, Designation, and	E-mail ID	Mobile/Landline
No				Mentor	Address of the Mentor		number
1.		1	Smart materials and Structures	Multiphase smart composites for energy harvesting	Dr. Subhaschandra Kattimani Associate Professor Department of Mechanical Engineering , NITK Surathkal, Srinivasnagar PO, Mangalore- 575025, Karnataka	subhaskatti@nitk.edu.in	9481413661 08242473661
	Mechanical Engineering	2	Wind Turbine Aerodynamics	Numerical and Experimental Study of Small-Scale Vertical Axis Wind Turbine with Variable Pitch Control		bhama72@gmail.com, sathyabhama@nitk.edu.in	9448134433 08242473683
		3	Structural Dynamics, Acoustics	Experimental investigations on vibro-acoustics of aircraft sandwich panels under non- uniform heating		jeyaraj@nitk.edu.in	07795858559
2	Metallurgical and Materials Engineering	1	Material science, drug design, diagnostic, oncology	Evaluation and development of graphene quantum dots as theranostic agents for breast cancer	Rahman,	<u>rizwan@nitk.edu.in</u> , Rizwan.mme@gmail.com	9620169801

		2	Corrosion, Passivity, Tribo- corrosion, Surface Engineering	Internal corrosion and tribo- corrosion issue at the crucial joint (elbow and T joint I the Oil and Gas industry)	Dr. Shashi Bhushan Arya Assistant Professor Department of Metallurgical and Materials Engineering, NITK Surathkal, Srinivasnagar PO, Mangalore- 575025 Karnataka	<u>sbary@nitk.edu.in</u> , sbhushanarya@gmail.com	9380452282 0824-2473754
		1	Bionanotechnology and biosensing	Design and development of a nanoparticle-based microfluidic point of care device for the rapid detection of pathogens	Dr. Raj Mohan B. Professor Department of Chemical Engineering,NITK Surathkal Srinivasnagar PO, Mangalore- 575025 Karnataka	rajmohanbala@gmail.com rajmohan.che@nitk.edu.in	9739939986 08242473605,3115
3	Chemical Engineering	2	Nano Drug Delivery System	Synthesis of organic and inorganic drug delivery vector for targeted and sustained release of drug Doxorubicin	Dr. P. E. Jagadeesh Babu Associate Professor Department of Chemical Engineering,NITK Surathkal Srinivasnagar PO, Mangalore- 575025, Karnataka	jagadeesh_78@nitk.edu.in	9632896086 08242473605
		3	Nanotechnology applications for water treatment	Phytoextract mediated large scale synthesis of metal based nanoparticles for water disinfection-Scale-up effect on the characteristics and application potential	Dr. Vidya Shetty K Professor Department of Chemical Engineering, NITK Surathkal Srinivasnagar PO, Mangalore- 575025, Karnataka	vidyaks68@yahoo.com, vidyaks95@nitk.edu.in	9844771919 08242473606
4	Chemistry	1	Bio Sensors	Design and Development of Highly Sensitive Electrochemical Dengue Biosensors	Dr. Badekai Ramachandra Bhat Professor Department of Chemistry NITK Surathkal Srinivasnagar PO, Mangalore- 575025, Karnataka	brchandra@gmail.com, ram@nitk.edu.in	9449553759 08242474046, 3043,3204

		2	Supramolecular	Design and Development of	Dr. Darshak R Trivedi	darshakrtrivedi@yahoo.co.in	
		2	•	colorimetric and fluorescence			
			Chemistry,		Associate Professor	darshakrtrivedi@nitk.ac.in	
			Analytical	chemosensors for the	Department of Chemistry	darshak_rtrivedi@yahoo.co.in	
			Chemistry, Organic	detection and removal of	NITK Surathkal		
			Chemistry	environment pollutant heavy	Srinivasnagar PO,		
				metal ions	Mangalore- 575025, Karnataka		
		1	Earthquake	Development of a Novel	Dr. Katta Venkataramana	<u>katta@nitk.edu.in</u> ,	9448475875
			Engineering	Method to Control the	Professor	ven.nitk@gmail.com	08242473337,
				Settlement of Railway	Department of Civil		08242473041
				Embankments using Effective	Engineering		
				Vibration Isolation with	NITK Surathkal		
				Sustainable Materials	Srinivasnagar PO,		
5	Civil				Mangalore- 575025, Karnataka		
5	Engineering	2	Sustainable	Performance of Nano SiO2	Dr. Bibhuti Bhusan Das	bibhutibhusan@gmail.com	9589200861,
			Construction	Admixed Cementitious Mortar	Associate Professor	bdas@nitk.edu.in	08242473970,
			Materials	Integrated with Micro	Department of Civil		
				Encapsulated Phase change	Engineering		
				Materials Derived from Bio-	NITK Surathkal		
				Wastes	Srinivasnagar PO,		
					Mangalore- 575025, Karnataka		
		1	Speech Processing	Punctuating the English text,	Dr. Shashidhar G. Koolagudi	koolagudi@nitk.edu.in,	9986332545
				got converted from speech	Associate Professor	koolagudi@yahoo.com	08242473413
					Department of Computer		
					Science & Engineering		
					NITK Surathkal		
	Computer				Srinivasnagar PO,		
6	Science and				Mangalore- 575025, Karnataka		
	Engineering	2	Cloud Computing	Interoperability in Multi-Cloud	Prof. K. Chandrasekaran	kch@nitk.edu.in	
		-		Architecture	Professor		
					Department of Computer		
					Science & Engineering		
					NITK Surathkal		
					Srinivasnagar PO,		
					Shiniyashagar FU,		

					Mangalore- 575025, Karnataka		
		3	Data Analytics,	Developing a robust solution	Prof. P. Santhi Thilagam	santhi@nitk.edu.in,	0824-2473404
			Data Security, Data	for detecting and mitigating	Professor	santhi.cse.nitk@gmail.com	
			management	application layer attacks in	Department of Computer		
				Internet of Things (IoT)	Science & Engineering		
				environment	NITK Surathkal		
					Srinivasnagar PO,		
					Mangalore- 575025, Karnataka		
		1	Healthcare	XAI approaches for	Dr. Sowmya Kamath S.	sowmyakamath@nitk.edu.in	08242473557
			Analytics, Machine	Trustworthy Clinical Decision	Department of Information		
			learning, Artificial	support Systems	Technology		
			intelligence		NITK Surathkal		
					Srinivasnagar PO,		
	Information				Mangalore- 575025, Karnataka		
7	Technology	2	Machine Learning,	Federated Learning and	Dr. Ananthanarayana V S	anvs@nitk.edu.in,	
	reciniology		Multimodal Data	Explainable-AI-based	Professor	ananthvs1967@gmail.com	
			Analytics	Multimodal Data Analytics	Department of Information	anvs@nitk.ac.in	
					Technology		
					NITK Surathkal		
					Srinivasnagar PO,		
					Mangalore- 575025, Karnataka		
		1	Smart grid Control	Experimental Studies on	Dr. Panduranga Vittal K	vittal@nitk.edu.in	9448115984
			and Operation	Dynamic Operation and	Professor		08242473454
				Control of Multi Machine Smart	Department of EEE		
				Grid	NITK Surathkal		
8	Electrical and				Srinivasnagar PO,		
0	Electronics				Mangalore- 575025		
	Engineering	2	Power Electronics	Development of 3.3 kW	Dr. B. Venkatesaperumal	bvperumal@nitk.edu.in	9980861389
	Lingineering		and Control	portable DC charger for 3-	Professor		
				wheeler and light 4-wheeler	Department of EEE		
				electric vehicles	NITK Surathkal		
					Srinivasnagar PO,		
					Mangalore- 575025, Karnataka		

		3	EV charging	Performance investigation of	Dr. Dattatraya N Gaonkar	dngaonkar@gmail.com,	9482249764
			station, Smart Grid,	Electric Vehicle Charging in a	Associate Professor	dngaonkar@nitk.edu.in	08242473457
			Renewable energy	Bipolar DC Microgrid	Department of EEE		
			systems		NITK Surathkal		
					Srinivasnagar PO,		
					Mangalore- 575025, Karnataka		
		1	Remote Sensing	Design and development of	Dr. Shyam Lal	shyamfec@nitk.edu.in,	9741072082,
				Deep Learning Framework for	Assistant Professor	shyam.mtec@gmail.com	9997840444
				change detection form Bi-	Department of ECE		
				temporal Synthetic Aperture	NITK Surathkal		
				Radar Images	Srinivasnagar PO,		
	Electronics &				Mangalore- 575025, Karnataka		
9	Communication	2	Metamaterial,	Electromagnetic Wave	Dr. Krishnamoorthy K	Krishnak_ece@yahoo.com	7208039132
	Engineering		Antenna design	Manipulation and Control using	Assistant Professor		08242474512
			and microwave	Metasurfaces for intelligent	Department of ECE		
			Engineering	reflective and transmissive	NITK Surathkal		
				Surface Applications	Srinivasnagar PO,		
					Mangalore- 575025		
					Karnataka		
		1	The Internet	A Novel Authentication	Dr. R. Madhusudhan	madhu@nitk.edu.in	819723723
			Security	Scheme for 6G enabled	Associate Professor		
				Internet of Things(IoT) using	Department of Mathematical		
				Blockchain	and Computational Sciences		
					NITK Surathkal		
	Mathematical				Srinivasnagar PO,		
10	and				Mangalore- 575025, Karnataka		
	Computational	2	Nonlinear Analysis	Fractional Iterates of Functions	Dr. V. Muragan	muragan@nitk.edu.in	9448150143
	Sciences			and Hyers-Ulam Stability	Associate Professor		
					Department of Mathematical		
					and Computational Sciences		
					NITK Surathkal		
					Srinivasnagar PO,		
					Mangalore- 575025, Karnataka		

		3	Computer science,	Satellite image enhancement	Dr Jidesh P.		
			Image processing	and analysis using optimized	Assistant Professor		
				deep learning architecture	Department of Mathematical		
					and Computational Sciences		
					NITK Surathkal		
					Srinivasnagar PO,		
					Mangalore- 575025, Karnataka		
		1	Materials Science	Fabrication of Polyimide based	Dr. Arun M Isloor	isloor@yahoo.com	9448523990
			and Technology	hollow fiber composite	Professor		08242473206
	Central			membranes for gas separation	Department of Chemistry		
11	Research			application	NITK Surathkal		
	Facility				Srinivasnagar PO,		
					Mangalore- 575025		
					Karnataka		