IIT Ropar – Technology and Innovation Foundation for the Agriculture and Water Technology Development Hub (AWaDH)
CIN: U80100PB2020NPL051623

A Technology Innovation Hub established by the Department of Science & Technology (DST), Government of India, in the framework of National Mission on Interdisciplinary Cyber Physical Systems (NM – ICPS)

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Advertisement for the position of Senior Project Associate

January 2022

Applications are invited from Indian nationals for the position of Senior Project Associate to work in DST sponsored Technology Innovation Hub at IIT Ropar in the framework of National Mission on Interdisciplinary Cyber-Physical Systems (NM - ICPS).

Last Date for Application: 30 January, 2022

IIT Ropar – Technology and Innovation Foundation (TIF) is a Section – 8 company founded to support the initiatives of recently established Technology Innovation Hub – AWaDH (Agriculture and Water Technology Development Hub) at the Indian Institute of Technology Ropar in the framework of National Mission on Interdisciplinary Cyber-Physical Systems (NM – ICPS) by the Department of Science and Technology, Government of India. The TIF supports the R&D in the domain of Agriculture and Water and provides incubation support to technology-based start-ups towards sustainable agriculture and the environment.

Job description: Senior Project Associate
Location: IIT Ropar, Punjab
Number of positions: 01
Type of job: Full time (on contract)

Duration: Initially for 3 years. Contract can be extended based on satisfactory performance.

Qualifications: Bachelor's degree in Chemical/Mechanical/Civil/Polymer/Engineering or Technology and Master degree in an allied discipline with good academic record (with/withtout a GATE/CSIR-NET qualified score) with a minimum of 60% marks (or 6.5 Grade points out of 10) (55% marks for SC/ST) and PhD degree in engineering.

Desirable knowledge:

- Good knowledge of the subjects of nanotechnology, fluid mechanics, water treatment, cavitation etc.
- Excellent writing ability and oral communication skills, and the ability to do multi-task, effectively.

Remuneration:
Rs 42,000/- + HRA (as per DST norms). Suitable accommodation on institute campus may be provided based on availability.

How to apply:

The applicant must send the following documents, *as a single PDF file*, ASAP via **email** to nnirmalkar19@gmail.com

1. Filled *application form* given in the following sheet.
2. The contact information of at least two referee who can write a letter of support.
3. *A PDF copies of all the certificates and transcripts*

The shortlisted candidates shall be called for online/personal interview. For any related query, please contact nnirmalkar19@gmail.com

Terms and Instructions

1. Only shortlisted candidates will be contacted/informed through email.
2. TIF reserves the right to fill up the post, not to fill up the post, or cancel the advertisement in whole or part without assigning any reason. The company also reserves the right to place a limit on the total number of candidates to be called for written test/or interviews. The decision of the company in this regard will be final.
3. Documentary evidence in support of all educational and professional qualifications will be required to be produced when specified.
4. The company can verify all the documents submitted by a candidate before the appointment, at the time of appointment, or during the tenure of the service. In case it is detected that the documents submitted by the candidates are fake or the candidate has clandestine antecedents/background and has suppressed the said information, then his/her services shall be terminated.
5. If it is found at a later date that any information given in the application is incorrect/false the candidature/appointment is liable to be cancelled/terminated.

Dr. Neelkanth Nirmalkar
Assistant Professor - Department of Chemical Engineering
Indian Institute of Technology Ropar, RUPNAGAR-140001 (Punjab)
Domain coordinator - Water Treatment and Management
DST TIH – AWaDH (Agriculture and Water Technology Development Hub)
IIT Ropar - Technology & Innovation Foundation
Email: nnirmalkar19@gmail.com

The project details are as follows:

Nanobubbles are a novel type of nanoscale bubble system. They have a typical mean spherical diameter of 100–200 nano-meters and they exist in bulk liquid. The most peculiar characteristic of these bulk nanobubbles is their extraordinary longevity. Whilst the lifetime of microbubbles is of the order of minutes and that of microbubbles (1–1000 microns) is on the order of seconds, nanobubbles have been reported to last for weeks and months. The Young–Laplace equation, however, predicts a huge inner gas pressure (e.g., around 30 atm inside a typical 100 nm nanobubble in pure water) and, consequently, bubble dynamics theory of Epstein–Plesset predicts that they would dissolve extremely quickly on a time-scale of about 1–100ms. Though bulk nanobubbles are a relatively new field, because of their unusual longevity they are already attracting a lot of industrial attention and many potential applications have been proposed. Thus, there is immense scope for nanobubbles to impact and even revolutionize many current industrial processes. The potential to exploit the unique properties of NBs for improving water treatment due to (1) extraordinary longevity (2) ability of NBs to improve gas transfer into water or influence gas trapped on particle surfaces, (3) ability to produce quasi-stable reactive oxygen species (ROS) on the surface of NBs to oxidize pollutants and pathogens in water, (4) ability to improve particle aggregation through intraparticle NB bridging, and (5) ability to mitigate fouling on surfaces. Reactive oxygen species (ROS) enhances the seed germination and plant growth. The **nanobubbles** show great potential as ultrasound-mediated drug-delivery vehicles to facilitate drug release and extravascular delivery.

Application form

Recent Photograph

Personal Details

Full Name (In capital)			
Date of Birth (DD/MM/YY)		Category (General/SC/ST/OBC)	
Age (in years)		Gender (Male/Female)	
Marital Status (Single/Married)		Nationality	
Address for Communication:		Permanent Address:	
Mobile/Phone No.		Email:	

Education

Sr. No.	Degree	Discipline	University/Institute	Regular/ Part-time	Year	%Marks /CGPA*	Division
1.							
2.							

3.							
4.							
5.							

**[Please also submit a softcopy of the semester-wise mark-sheets as well as softcopy of degree]*

Qualifying Examination (GATE)

Qualifying Examination (& name of subject)	**Discipline**	**Year**	**Valid Up to**	**Percentile (& Score)**	**All India Rank**

Professional Experiences (Teaching/Research/Industrial) if any

Name of Organization	**Designation**	**Nature of Work**	**From**	**To**

Research Publications:

[Also attach softcopy of conference/journals papers separately, if applicable]

Any other Relevant Information:

Place:……

Date: ……

Signature of Applicant