

इंडियन इंस्टीट्यूट ऑफ टेक्नोलॉजी दिल्ली
हौज खास, नई दिल्ली -110016
(औद्योगिक अनुसंधान एवं विकास इकाई)
INDIAN INSTITUTE OF TECHNOLOGY DELHI
Hauz Khas, New Delhi-110016
(Industrial Research & Development Unit)

No. IITD/IRD/RM00081G/ 556808

Dated: 23/10/2026

Advertisement No.: IITD/IRD/296/2026

Applications from Indian nationals are invited for Project Appointment under the following project. Appointment shall be on contractual basis with consolidated pay, renewable yearly or upto the duration of the project, whichever is earlier. निम्नलिखित परियोजना के तहत भारतीय नागरिकों से आवेदन आमंत्रित किए जाते हैं। अपॉइंटमेंट, अनुबंधित आधार पर समेकित वेतन, नवीकरणीय वार्षिक या परियोजना की अवधि तक, जो भी पहले हो, के साथ होगा।

Project Background:

The percentage utilization of agro-waste in thermal power plants has been lower than expected due to several practical challenges, including but not limited to foaming and tripping of the pumps in the flue gas desuperization (FGD) unit, as well as ash handling, combustion instability, and so on. Moreover, lack of standardized data on biomass behavior under Indian conditions, particularly in terms of emission profiles, slagging propensity, and reactivity and foam formation in lime-treated systems under biomass co-firing.

Motivation and Objectives:

Government of India has mandated 7% mixing of biomass in thermal power plant for co-firing but the percentage utilization of agro-wastes in thermal power plants has been lower than expected due to several practical challenges, including but not limited to foaming and tripping of the pumps in the flue gas desulfurization (FGD) unit, as well as ash handling, combustion instability, and so on. Therefore, the project has been framed to achieve following objectives:

- Collection of biomass samples, both torrefied and non-torrefied, and perform their characterization (proximate, ultimate, FTIR, XRD, and ICP-MS) to identify possible precursors for foaming and suggest pre-treatment strategies.
- Collection of foam samples from FGD units while monitoring pH, oxygen, flue gas composition, temperature, blending ratio, and conduct in-depth characterization of the foams to identify causes and mechanisms of foaming in the FGD-absorber.
- Optimization of biomass blending ratio, lime quality, and injection rate while eradicating foaming in the FGD-absorber at the lab scale.
- Identification and development of suitable corrective measures to suppress the foaming in the FGD-absorber.
- Detailed study for the development of solutions to mitigate the increased moisture content in calcium sulphate (gypsum) caused by foaming in FGD.

Working Requirement(s):

The project fellows are required to visit the NCR based Thermal Power Plants on regular basis for collecting the sample, data analysis and chemical study of the foam from the FGD units. They will be encouraged to register for PhD program, following the Institute rules. If admitted into PhD program, then the PhD topic will be related to Project only and after completing the course work, the fellows will be devoting time for the same. The fellows must work in close coordination with IITD and NTPC's TPPs in the NCR for data collection, analysis, while modelling and optimization can be done through CFD simulation.

For further details, the potential candidate may write directly to:

Dr. S. K. TYAGI, Professor
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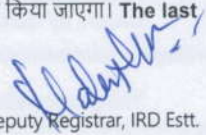
Project Title	Developing an effective protocol to mitigate foaming in flue gas desulfurization-absorber unit due to biomass co-firing in thermal power plants: Part 1 (RM0081G)
Funding Agency	CPRI, Bangalore
Name of PI	Prof. S.K. Tyagi [Email ID: tyagisk@iitd.ac.in]
Name of Co-PI	Prof. Vipin Kumar
Deptt/ Centre	Energy Science and Engineering

Duration of the Project	18 months w.e.f. 01.04.2026	
Post (S)	Consolidated fellowship / Pay-slab	Qualifications
Research Associate	₹ 58,000 pm (Consolidated)	Doctorate (Thermal/Mechanical/Energy/Chemical) having min 75% of marks at (UG/PG level) preferably having PhD work experience in Chemical Kinetics, Combustion Simulation and related areas, besides the purchase of consumables and non-consumables following GFR/GEM, as per Govt. of India norms
JRF/SRF	₹ 37,000/ ₹ 42000 pm (+HRA @30%)	M. Tech (Thermal/Mechanical/Energy/Chemical) having min 75% of marks at B. Tech and M. Tech. level) preferably having some experience in Chemical Kinetics, Combustion Simulation through and related areas with NET/GATE. *The requirement of NET/GATE examination for the selection to the post of JRF/SRF may be relaxed for the candidates who have graduated from Centrally Funded Technical Institutes (CFTIs) with a CGPA of more than 8.000 (80% aggregate marks). NET/GATE qualified candidates only.
Jr. Project Assistant (Tech.)	₹ 30,000 pm (Consolidated)	B. Tech/Diploma (Thermal/Mechanical/Energy/Chemical) or MSc (Chemistry/ Chemical/Physics) having min 75% of marks) preferably having some experience in project and R&D related work.

The candidates who are interested to apply for the above post should download Form No. IRD/REC-4 from the IRD Website(<http://ird.iitd.ac.in/rec>) of IIT Delhi and submit the duly filled form with complete information regarding educational qualifications indicating percentage of marks/division, details of work experience etc. by e-mail with advertisement No. on the subject line to Prof. S.K.Tyagi at email id: tyagisk@iitd.ac.in

IIT Delhi reserves the right to fix higher criteria for short-listing of eligible candidates from those satisfying advertised qualification and requirement of the project post and their name will be displayed on web link (<http://ird.iitd.ac.in/shortlisted>) along with the online interview details. Only short-listed candidates will be informed for the online interview. In case any clarification is required on eligibility regarding the above post, the candidate may contact to Prof. S.K.Tyagi at email id: tyagisk@iitd.ac.in

5% relaxation of marks may be granted to the SC/ST Candidates. In case of selection of a retired/superannuated government employee, his/her salary will be fixed as per prevailing IRD norms. अनुसूचित जाति / अनुसूचित जनजाति के उम्मीदवारों को अंकों की 5% छूट दी जा सकती है। एक सेवानिवृत्त सरकारी कर्मचारी के चयन के मामले में उसका वेतन वर्तमान आईआरडी मानदंडों के अनुसार तय किया जाएगा। **The last date for submitting the completed applications by email is 02/11/2026 by 5.00 p.m.**


Deputy Registrar, IRD Estt.

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