

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/RP04388N/125376

Advertisement No.: IITD/IRD/040/2023

Dated: 21/02/2023

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.

1. Introduction An estimated 80% of the rural traditional industries in India are meeting their energy demand from biomass, much of it burnt in the traditional way having very poor combustion characteristics and thermal performance which creates air pollution and hence, the adverse health and socio-economic implications. Similar is the case for several other traditional industries like bangle making, dhabas and traditional restaurants (motel), etc. which has not yet even got any attention so far. According to the published literature the emissions from one of the oldest industries viz. jaggery production is around 4-5% of the National share in India which is also affecting the air quality in the NCR also. Every year, smoke from open fires and traditional combustion devices including stubble burning cause death of more than 5 million people as estimated by the World Health Organization (WHO, 2022). Also, the growing gap between availability and demand for firewood, coupled with the scarcity of fossil fuels, and the poor thermal performance and pollution caused by traditional stoves, has forced the technologists to focus their attention on improving the thermal efficiencies of these combustion devices and also to develop more efficient, smokeless devices for these applications. In the last few decades, developing countries including India have experienced a rapid depletion of natural forest resources that has resulted in hardship for the people living in rural areas, especially women and children who spend a considerable part of their time and energy in search of fuel wood and bio-fuels and often have to cover long distances. Besides, deforestation has also led to many negative ecological consequences.

2. Job Profile Under this project, there is a need to carry out the detailed thermal analysis of existing biomass based furnaces and their comparisons already developed at IITD and other agencies and to improve them using basic heat and mass transfer analysis. Further, the computation tools like CFD and numerical methods could be used to improve the design features to improve the thermal performance and emission characteristics leading to non-sustainable burning of fuels viz. processes and unprocessed including wood, non-woody biomass. 2. Skill Required: Simulation (CFD), Heat and Mass Transfer Analysis, Writing of Research Articles, etc. The selected candidate should be able to carry out detailed studies of heat and mass transfer for the biomass combustion devices for process heating applications. This includes data collection and data analysis, writing research articles, preparing the reports. The study also includes possible interventions such as, automation for primary and secondary air flow rates into the biomass combustion devices, simulation using suitable software and other technical work related to the project.

NOTE: SRF/JRF may be encouraged to register for Ph.D program following the Institute rules.

Title of the Project	Demonstration of Biomass Pellet based Clean Burners and Evaluation of Carbon Saving Potentials (RP04388N)	
Funding Agency	Swami Samarth Electronics Pvt.Limited, Nashik (Maharashtra) India	
Name of the Project Investigator	Prof. S.K. Tyagi [email id: sudhirtyagi@yahoo.com; tyagisk@iitd.ac.in]	
Deptt/ Centre	Department of Energy Science and Engineering	
Duration of the Project	Upto: 07/11/2024	
Post (s)	Consolidated fellowship / Pay-slab	Qualifications
Jr. Research Fellow (01)	Rs. 31,000/-p.m. (consolidated)	M. Tech (Thermal/Mechanical Engineering/Energy having min 75% of marks at B. Tech and M. Tech. level) preferably from reputed organizations with qualifying GATE* exam and having some working experience in CFD Simulation particularly in combustion devices (solid fuel). *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).
OR Sr. Research Fellow (01)	OR Rs. 35,000/-p.m. (consolidated)	OR M. Tech (Thermal/Mechanical Engineering/Energy having min 75% of marks at B. Tech and M. Tech. level) preferably from reputed organizations with qualifying GATE* exam with two years of research experience and having some working experience in CFD Simulation particularly in combustion devices (solid fuel). *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).

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: sudhirtyagi@yahoo.com; 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>) **alongwith the online interview details. Only short-listed candidates will be informed for online interview.** In case any clarification is required on eligibility regarding the above post, the candidate may contact Prof. S.K.Tyagi at email id: sudhirtyagi@yahoo.com; 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 e-mail is 07/03/2023 by 5.00 p.m.**

AP 27-02-2023
सहायक कुल्सचिव, आईआरडी

वितरण

- Head of the Deptt./Centres/Units : It is requested that the contents of the Above Advt. be brought to the notice of the staff working in your Deptt./Centre/Unit
- Webmaster, IRD : To put advertisement at IITD website.
- Notice Boards
- Advertisement file
- Prof. S.K.Tyagi, PI, Department of Energy Science and Engineering
- Copy to Chairperson, DRC/CRC