

## Advertisement for the posts of 2 JRFs (Junior Research Fellow) and 1 Post-Doctoral Fellow in DRDL Sponsored Project

Applications are invited for time bound Project Appointments under the following project.

<b>Title of the Project</b>	The Experimental Investigation and Numerical Modelling of Heat Absorption Efficacy of Additive Enhanced Endothermic Rocket Fuels	
<b>Funding Agency</b>	DRDO (Defence Research Development Organization)	
<b>Duration of the position</b>	3 years (To be renewed every year for upto 3 years subject to performance and fund availability)	
<b>PI</b>	Dr. Sayak Banerjee	sayakb@mae.iith.ac.in
<b>Department</b>	Mechanical and Aerospace Engineering	
<b>PI (Joint)</b>	Dr. Debaprasad Shee	dshee@che.iith.ac.in
<b>Department</b>	Chemical Engineering	
<b>Post</b>	<b>Fellowship</b>	<b>Qualification</b>
<b>1<sup>st</sup> Junior Research Fellow (JRF)</b> - Design and Operation of Supercritical Endothermic Fuel Cracking Flow Reactor -Convertible to PhD subject to performance and fund availability -immediate hiring after selection	Rs. 31,000 per month (Hostel facility subject to availability. Otherwise HRA will be provided)	<b>Minimum Qualification:</b> - B.Tech/B.E. (1 <sup>st</sup> Class) in Chemical, Mechanical or Thermal/Power Plant Engg. - M.Tech/M.E. in Chemical, Mechanical or Thermal/Power Plant Engg. (min. CGPA 6.0) <b>Desired Qualification:</b> Experimental Research Experience in the field of Pyrolysis, Reactive Flows, Fuels or Thermo-Chemical Applications. Familiarity with GC/MS based analysis.
<b>2<sup>nd</sup> Junior Research Fellow (JRF)</b> - Development and Validation of Chemical Reaction Mechanism for fuel cracking, soot formation and cracked fuel ignition reactions - Experimental investigation of Ignition Delay of Cracked Fuels in Shock Tubes -immediate hiring after selection	Rs. 31,000 per month (Accommodation subject to availability, otherwise HRA will be provided)	<b>Minimum Qualification:</b> - B.Tech/B.E. (1 <sup>st</sup> Class) in Mechanical, Chemical or Thermal/Power Plant Engg. - M.Tech/M.E. (min 6.0 CGPA) in Mechanical, Chemical or Thermal/Power Plant Engg. <b>Desired Qualification:</b> -Experimental and/or numerical expertise in Combustion and Reactive Flow systems. Familiarity with Chemical Kinetic modelling and ignition delay experimentation.

<p><b>Post-Doctoral Fellow</b>  -Development of CFD and Conjugate Heat Transfer model of the endothermic fuel reactor using ANSYS-FLUENT environment  -ML based optimization of endothermic fuel channel design based on numerical simulations and experimental data  - immediate hiring after selection</p>	<p>Rs. 54,000 + HRA per month.  (Accommodation subject to availability)</p>	<p><b>Minimum Qualifications: -</b>  PhD in Mechanical/Chemical/Thermal Engineering Fields.  <b>Desired Qualification:</b>  -Expertise in Computational Fluid Dynamics and Heat Transfer and Modelling of Reactive Systems  -Familiarity with the ANSYS-FLUENT or other similar CFD software platforms.  -Familiarity with ML based optimization platforms</p>
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## Application Process

Eligible applicants should fill up the google form ( <https://forms.gle/AWQscqYN8NeRX5qH9> ) on or **before 28<sup>th</sup> February 2023**. Documents to be **uploaded in the google form** are

1. Latest CV, Age Proof and Photo ID (Candidates must be Indian citizens)
2. Scanned/Digital copy of degree certificate and grade sheet/transcripts
3. JRF Candidates: 2 page extended abstract on their M. Tech project.
4. Post-Doctoral Candidates: 4 page synopsis on their PhD research project and list of publications

### Letters of recommendation:

Post-Doctoral candidates are strongly encouraged to submit two Letters of Recommendation at least one of which will be from their PhD supervisor. Please instruct your recommenders to directly send their LOR to [sayakb@mae.iith.ac.in](mailto:sayakb@mae.iith.ac.in).

## Selection

- Candidates will be shortlisted by the PIs and the selection committee based on eligibility and fit with respect to the advertised position.
- Shortlisted candidates will be called for an online interview. Shortlisted candidates will be intimated about interview date and time by email.
- Candidates with prior relevant experience will be given preference.
- Joining will be immediate after selection.
- The position may be kept open if no suitable candidate is found.

*Sayak Banerjee*

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*Debaprasad Shee*

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