



Indian Institute of Technology (Indian School of Mines), Dhanbad
The Office of Dean, Research & Development

Order Ref. No. CSRP Proposal No. 69T05-1 dated 19.06.2023	IIT (ISM) Project No.: DST(CEFIPRA) (394)/2023-2024/1032/MECH	Date: 14th May 2025
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JRF position under CEFIPRA

Applications are invited under the sponsored project. The details of the project are as under:

Position	Junior Research Fellow
Number of Position (s)	01
Title of The Project	Data reduction and surrogate modelling of transition to turbulence of Rayleigh-Taylor instability data obtained by DNS
Principal Investigator	Prof. Aditi Sengupta, Dept. Mech. Engg.
Tenure of Project	1 Year
Job Description (in maximum of 100 words)	Writing, debugging and the execution of a 3D parallel compressible Navier-Stokes Solver for Rayleigh-Taylor instability problem incorporating novel NGC scheme for parallel implementation of the implicit compact schemes to evaluate first derivatives. The candidate is expected to collect data and implement various theories in an innovative way. The candidate is expected to have a knowledge of enstrophy transport equation and its disturbance evolution for compressible flows. Knowledge of reduced order modeling techniques like Proper Orthogonal Decomposition is essential.
Essential Qualification	Selected through CSIR-UGC NET or GATE having M. Tech in Mech. Engg.
Desirable Qualification	1. Knowledge of stability/receptivity/transition of fluid flows. 2. Have sound knowledge of high-accuracy computing methodologies for the solution of nonlinear partial differential equation.
Age and Relaxation (if any)	Preferably below 28 years (with 5 years relaxation for SC/ST/OBC)
Fellowship	INR 37,000 p.m. for 12 months
Last Date & Time	9 days from the date of advertisement
Shortlisted candidates will be informed on the date of interview. Mere possession of minimum qualification does not guarantee an invitation to the interview. Candidates will be short-listed based on their merit and as per the requirement of the project. All candidates should make their own arrangements for their stay at Dhanbad, if required. No TA/DA will be paid to attend the interview.	

Aditi Sengupta 14/05/25
(Signature of PI)