



### Advertisement for the Post of Junior Research Fellow

Advt. No.:IIITDMK/PR/JRF/A25/2024

Date: 09<sup>th</sup> October 2024

Applications are invited for the following post. The post is purely on a contractual basis.

Name of Position	Junior Research Fellow (JRF)
Number of Positions	One
Nature of Work	Fabrication of composite manufacturing set-up and testing
Duration of the Position	The post is purely on a contractual basis and initially, the post is for 24 Months, may be extended till 19.06.2026
Stipend	Rs. 37,000/- pm
Title of the Sponsored Project	Development of a thermoplastic composite tape winding set-up with enhanced build capacity
Funding Agency	DST-SERB/ANRF
P.I / Co-P.I	Dr. Venkata Timmaraju Mallina / Dr. Gowthaman Swaminathan
Department	Mechanical Engineering
Educational Qualification	UG - BE/B.TECH in Mechanical Engineering/Manufacturing Engineering/Aerospace Engineering/Smart Manufacturing/Automobile Engineering/Mechatronics/Robotics/Polymer Engineering or their equivalent  PG - ME/M.TECH in branches related to Mechanical Engineering/Mechatronics/Robotics/Polymer Engineering or their equivalent
Additional Qualification (Desirable, if any)	NIL
Age Limit	35 years as on Last date of receiving the application (Age relaxation is applicable as per Gol norms)
Interview Schedule:Date, Time & Venue	21.10.2024 at 02.00pm IIITDM Kancheepuram, Admin Building

**How to Apply and Selection Procedure:**

1. Interested candidates are requested to submit their applications in the enclosed prescribed format.
2. Take print of the application form, fill, sign, and submit the hard copy at the time of Interview.
3. Candidates should be present physically at 1.30pm at IIITDM Kancheepuram located at Chennai - 600127 for the written test and interview.
4. Candidates should produce all educational and experience certificates at the time of interview for verification.
5. No TA/DA will be paid for attending the interview.
6. The selection process consists of written test followed by Interview. The topic for written test along with syllabus is enclosed.

**For any clarification regarding the application process, the candidate may contact the PI. email: [vtmallina@iiitdm.ac.in](mailto:vtmallina@iiitdm.ac.in)**

Sd/x

**Dean (SR)**



## Topics for Written Test

### Syllabus for JRF Written Test

**Engineering Materials:** Structure, physical and mechanical properties, and applications of common engineering materials (metals and alloys, semiconductors, ceramics, polymers, and composites – metal, polymer and ceramic based); Iron-carbon equilibrium phase diagram; Heat treatment of metals and alloys and its influence on mechanical properties; Stress-strain behaviour of metals and alloys.

**Applied Mechanics:** Engineering mechanics – equivalent force systems, free body concepts, equations of equilibrium; Trusses; Strength of materials – stress, strain and their relationship; Failure theories; Mohr's circle (stress); Deflection of beams, bending and shear stresses; Euler's theory of columns; Thick and thin cylinders; Torsion.

**Theory of Machines and Design:** Analysis of planar mechanisms, cams and followers; Governors and fly wheels; Design for static and dynamic loading; failure theories; fatigue strength and the S-N diagram; Design of bolted, riveted and welded joints; Interference/shrink fit joints; Friction and lubrication; Design of shafts, keys, couplings, spur gears, belt drives, brakes and clutches; Pressure vessels.

**Polymers and Composites:** Polymer processing – injection, compression and blow moulding, extrusion, calendaring and thermoforming; Moulding of composites.

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Appl. No.:  
(will be filled by Office)

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## APPLICATION FOR THE POSITION OF PROJECT STAFF

Candidates Photo  
to be pasted here

1. Advertisement Number:
2. Name of the Post:
3. Candidate's Full Name (As per SSLC Mark sheet):
4. Father's Name of the Candidate:
5. Date of Birth of the Candidate:
6. Nationality:
7. Gender:
8. Category (Gen / OBC / SC / ST):  
(For age relaxation only)
9. Address for Communication:
10. Permanent Address:
11. Contact Phone / Mobile Number(s):

12. Email Address:

13. Educational Qualifications Starting from X<sup>th</sup> / SSLC:

Sl. No.	Degree & Branch	Institute / University	Year of Entry & leaving	Percentage / CGPA & Class	Mode (Regular / Part-time / etc.)

14. Academic Record: GATE/ CSIR - NET qualification details with percent marks / Rank, year of qualifying, etc.:

15. Names and addresses of two referees along with phone numbers and e-mail addresses:

a)

b)

16. Are you currently working in Central / State / Semi-Govt / PSU / Autonomous Bodies of the Govt.? (If yes, please submit NOC issued by your present employer):

17. Present Position / Designation:

18. Work Experience (in reverse chronological order including post held at present):

Sl. No.	Organization	Designation	Start Date & End Date	Pay Scale / Total Pay

19. If selected, time required to join:

20. Any other information you wish to mention:

**UNDERTAKING**

I hereby declare that I have carefully read and understood the instructions given in the Advertisement. All information furnished in this form as well as the attached documents are true and correct to the best of my knowledge and belief. I fully understand that if it is found at a later date that any information given in the application is incorrect / false or if I do not satisfy the eligibility criteria, my candidature / appointment is liable to be canceled / terminated.

Signature of the Applicant

Date: