INDIAN INSTITUTE OF TECHNOLOGY ROPAR

ADVERTISEMENT
Junior Research Fellow (JRF)
(Project No. ANRF/ARG/2025/010909/ENS)

Applications are invited from highly motivated and eligible candidates for ARG Project funded by ANRF as per the following details.

Project title: Investigations into moisture response and aerodynamics of small insects

Project description: Flight of small can provide key inputs for the development of small unmanned aerial vehicles (UAV) for multiple applications. Any UAVs based on such flapping wing insect flight should ideally be able to handle a wide array of atmospheric conditions. Specifically, exposure to atmospheric moisture in the form of fog or dew is a significant challenge that these insects, as well as UAVs inspired from their flight, have to overcome due to their inherently low mass. This project aims to conduct a systematic study into the response of flying insects to atmospheric moisture. It involves experimental and numerical investigations into how fog and dew can affect the inherent water repellence of insect wings and thus their overall flight dynamics. The research outcomes of this project will contribute towards development of small, flapping-wing based unmanned aerial vehicles for various socio-economic applications such as developing power efficient drones for disaster relief, agriculture management and reconnaissance. The selected candidates will get a chance to work with a highly collaborative research team on an interdisciplinary research problem using state of the art lab facilities.

Project Team: Dr. Chander Shekhar Sharma (PI), Dr. Navaneeth K Marath, Dr. Manish Agrawal

Open Positions:

Junior Research Fellow (JRF) (1)

Duration: 3 years or the project completion date, whichever is earlier. The candidate will be appointed initially for one year and based on the performance, an extension will be given. *It will also be possible for the selected candidate to apply for Ph.D. Program as per existing institute rules.*

Emoluments: As per extant rules

Essential Qualifications: The applicant must meet at least one of the following two criteria:

i. Master's degree in Mechanical Engineering / Aerospace Engineering / Chemical Engineering from a recognized institute and with exceptionally good academic record with a minimum CGPA of 6.5 on a 10.0 point scale (or 65% marks) + good GATE/NET score
ii. Bachelor's degree in Mechanical Engineering / Aerospace Engineering / Chemical Engineering from a recognized institute and with exceptionally good academic record with a minimum CGPA of 6.5 on a 10.0 point scale (or 65% marks) + good GATE/NET score

Desirable Qualities:

The candidate should have an extensive knowledge of Fluid Mechanics fundamentals. A background in numerical and experimental techniques in fluid mechanics, surface wettability, capillary phenomena, micro and nano fabrication will be preferable.

Application Process

Eligible applicants should fill out the google form: https://forms.gle/BwjJizXRvqDY5TpL9

This is a rolling advertisement. Applications will be reviewed regularly and shortlisted candidates will be informed by email about the online interview date and time. The position will be kept open until filled.