



## Advertisement for the position of Junior Research Fellow (JRF)

(ANRF Project Ref. No: ANRF/ECRG/2025/002450/PMS)

Applications are invited for the position of a **Junior Research Fellow (JRF)** for an ANRF (Govt. of India) sponsored Project titled “**Quantum Tunneling Devices for Polaritonics: Excitation and Detection with a Single Platform**” funded under the Anusandhan National Research Foundation (ANRF) **Prime Minister Early Career Research Grant (PM-ECRG)** Scheme.

| Details                  | Description                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No. of Positions         | One (01)                                                                                                                                                                                                                                                                                                                                                                |
| Duration                 | Initially for <b>One year</b> and based on the annual satisfactory performance extendable up to <b>Three years or until the completion of the project</b> (whichever is earlier)*.<br><br>*The selected candidate may be permitted to register for the PhD program under Kannur University, subject to fulfilling the University eligibility criteria and requirements. |
| Fellowship               | <ul style="list-style-type: none"><li>For NET/GATE Qualified candidates:<br/><b>Rs 37,000/month + HRA*</b> for first two years and<br/><b>Rs 42,000/month + HRA*</b> for the third year.</li><li>For non-NET/GATE qualified candidates:<br/>As per ANRF norms</li></ul><br>*HRA (House Rent Allowance) as per University norms                                          |
| Last date of Application | <b>September 25, 2026</b>                                                                                                                                                                                                                                                                                                                                               |

### Project Description

The research project aims to theoretically and experimentally investigate light-matter interaction for excitation and detection of polaritons with a device architecture suitable for quantum tunneling mediated processes. Devices that rely on quantum mechanical effects offer reduced dimensionality to few nanometers and provide better energy efficiency at an increased response rate compared to conventional opto-electronic devices. A device configuration with photon or polariton source integrated with optical circuitry of waveguides and detectors will offer a versatile platform for light-matter interaction study at on-chip level for a network of quantum devices.

### Job Description

The selected Junior Research Fellow (JRF) will assist in the implementation of the ANRF-funded project “Quantum Tunneling Devices for Polaritonics: Excitation and Detection with a Single Platform”. The project will involve both theoretical and experimental studies including: theoretical studies on quantum tunneling and polariton dispersion; experimental preparation of stable quantum tunnel junctions with conventional and

non-conventional materials; and electrical and optical characterization of quantum tunnel junctions. The JRF will also contribute to scientific writing, preparation of project reports, and dissemination of research findings through publications/patents and conferences proceedings.

### Eligibility Criteria

- M.Sc. in Physics or equivalent with a minimum of 60% marks (or equivalent CGPA/grade).
- Candidates with NET/GATE qualification and/or research experience relevant to the project objectives will be given preference.
- Age limit: 28 years (as per ANRF norms)

### Desirable Qualifications

- Strong background in Electrodynamics, Quantum Mechanics, Solid state physics, & Optics.
- Programming skills (python/matlab) and experience in computational modeling (FEM/FDTD).
- Strong scientific writing and communication skills, with evidence of research publications or conference presentations being an added advantage.

### Application Process

Applications are accepted via email mode only. Interested candidates should submit a **single PDF** containing the following documents to [vijith.k@kannuruniv.ac.in](mailto:vijith.k@kannuruniv.ac.in) with subject-line as:

**Application for JRF position – ANRF (PM-ECRG) project.**

Submit a **single PDF** containing the following documents on or before **September 25, 2026**:

1. Cover Letter
2. Detailed Curriculum Vitae (CV)
3. Proof of academic qualifications (10th onwards)
4. Proof of NET/GATE qualification (if applicable)
5. Experience certificates and supporting documents for research publications or relevant laboratory/computational skills.
6. Contact details of two academic Referees (with email id and phone number)

*Incomplete applications or applications received after the due date will not be considered.*

### Selection Process

- Applications will be screened based on eligibility and relevant research experience.
- Please note that only qualified and suitable candidates will be notified for an interview via email.
- Selection will be based on academic credentials, research aptitude, and performance in the interview.

### Principal investigator (PI) - Contact details

Dr. Vijith K  
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