



# Indian Institute of Technology Gandhinagar

## Advertisement for Junior Research Fellow (JRF)

Applications are invited for the “Junior Research Fellow” position at IIT Gandhinagar for a research project titled “Investigating Air Quality and its Dynamics in Built Environments in Urban India” sponsored by SERB DST.

**Consolidated Monthly Pay:** Rs. 31,000/-

**Principal Investigator:** Prof. Sameer Patel, Chemical Engineering and Civil Engineering

**Project Description:** Air pollution mitigation requires comprehensive characterization of emission sources, requiring air quality monitoring at a high spatio-temporal resolution. However, high spatio-temporal resolution measurements using currently available research-grade instruments are cost-prohibitive. The project aims to develop (1) particulate matter (PM) sensors and (2) monitors using commercially available PM sensors to measure PM<sub>2.5</sub> and PM<sub>10</sub>. The developed monitors will collect real-time PM concentration data, store it in onboard memory, and also transmit the data in real-time to the cloud via wi-fi or GSM. Other air pollutants such as VOCs and CO might also be included in the latter stage of the project.

**Required Background/Skills:** The selected candidate will be working on an interdisciplinary team at the Energy, Environment, and Exposure Laboratory (EEEL) with overlapping domains of electronics, machine learning, aerosols, and air quality under the mentorship of subject matter experts from these domains.

The following skill set is required.

- Proficiency in developing systems around microprocessors such as Arduino, Raspberry Pi, and NodeMCU
- Proficiency in programming (Python, MATLAB, etc.)
- Knowledge of data acquisition, processing, and visualization using IoT platforms such as Initial State and ThingSpeak
- Experience with the design of printed circuit boards and 3D printing
- Ability to find relevant resources and go through them to quickly and efficiently acquire new skills required for the project

### Eligibility Criteria:

- A Bachelor’s (BE, BTech) with a valid GATE score or Master’s (MSc, MTech) degree in Electronics Engineering/ Electronics & Communications Engineering/ Instrumentation / Electrical Engineering from a recognized academic institute
- Candidates from other engineering branches can apply only if they have the necessary background and skills.

**Terms:** The initial appointment will be for a year starting August 2022, with an option of further extension depending on the performance and fund availability.

**How to Apply:**

Interested candidates should fill out [this Google Form](#). Candidates will be shortlisted based on the information provided via the Google Form.

Google Form Link: <https://forms.gle/o9wuMVxXAANaSpZ7>

Candidates shortlisted for the interview must submit a copy of all degree certificates and GATE scores before the interview. Submission details will be provided at an appropriate time.

**Deadline:** The last date for application is 17<sup>th</sup> July 2022.

Prospective candidates may contact Prof. Sameer Patel by email (sameer.patel@iitgn.ac.in) in case clarifications are required before submitting their applications.