

# Research, Informatics and Graduate Studies

<https://sites.gtiit.edu.cn/research/positions/rf-2024003/>

## Research Fellow (Postdoc) Position in Internal Combustion Engines with Alternative fuels/modeling/control (RF-2024003) – Group of Assoc. Prof. Madan Kumar

The Mechanical Engineering Program (group of Madan Kumar) is looking for one Postdoc/research fellow to lead experimental and simulation research projects in alternative fuels (hydrogen, ammonia) combustion and transient control along with energy recovery solutions for power generation and marine application.

**Contract duration:** Initially for one year, renewable up to three years

### About the University

Guangdong Technion-Israel Institute of Technology (GTIIT) is a public technological institute and non-profit research university in Shantou, Guangdong province, China. GTIIT is the first Sino-foreign cooperative university with an independent legal personality to introduce high-quality higher education resources from the Technion-Israel Institute of Technology. Technion is a prestigious public research university based in Haifa-Israel, well known for research innovations. Since 2004, Technion has celebrated three Nobel Prize laureates and is consistently ranked as a top-100 university. The vision of GTIIT is to become a world-class international university, conducting cutting-edge research in science and technology.

### Project Details

Fossil fuels limited sources and emissions out reduction without power delivery compromising of engines has become key topics for the automotive industries and researchers in current scenario. In this line, our research focused are to improving the combustion stability by better mixing, heat energy loss management, modeling and control implementation and introducing the renewable fuels (such as hydrogen, ammonia and biofuel etc.) in internal combustion (IC) engines to overcome from emissions along with power delivery limitations. The research activities include alternative fuels such as hydrogen, ammonia, biofuels and synthetic fuels combustion and transient modeling and control to power compression and spark-ignited internal combustion engines. The work will consist of experimental testing and diagnostics on a well instrumented engine test-bed and 1D/3D simulation analysis. Moreover, drafting scientific papers, project reports and funding proposals etc. will be also handled.

### Keywords

Internal Combustion engines, Power generations, Alternative fuels (hydrogen/ammonia), modeling and transient control

### Selection Criteria

- PhD degree in Mechanical Engineering or any relevant discipline (essential).
- Experience of independent/group experiment and/or simulation on IC engines (essential).
- Relevant knowledge on modeling and control with transient application on engines/powertrain/energy systems (preferred).
- Experience on test bench setup and handling (preferred).
- Good communication skills in English (essential)

### Program

Mechanical Engineering (Robotics)

### Contact

Assoc. Prof. Madan Kumar

Email: [madan.kumar@gtiit.edu.cn](mailto:madan.kumar@gtiit.edu.cn)

[Web Page Link](#)

### Application Deadline

Open till filled

### Date posted

December 26, 2024

### Location

Guangdong Technion – Israel Institute of Technology (GTIIT), China & Technion-Israel Institute of Technology, Israel.

- Strong interest to work temporarily at large-scale research facilities in China, Europe, Japan and/or Australia (essential)
- Ability to author scientific reports and scientific publications (essential)
- no more than 5 years after completed the doctoral degree

### **Benefits**

– Total annual salary: RMB 330,000 up / year (depending on qualifications of the candidate, including government subsidy)

Extra benefit:

- housing at GTIIT, China (Rental paid by candidate)
- Annual health check
- Professional conference travel allowance
- Professional assistance offered to apply for Talent fund and Research fund
- Qualified candidate can receive RMB 140,000 living subsidy
- Work life balance
- World class Faculty team mentoring,
- Advanced lab equipment and devices

### **Application**

Application deadline: **Open till filled**

Send below required documents electronically to: [madan.kumar@gtiit.edu.cn](mailto:madan.kumar@gtiit.edu.cn)

1. Curriculum vitae and personal statements
2. A publication list
3. Three letters of recommendation (one from the PhD mentor)
4. A short research plan outline (up to one page in length)
5. Degree certificates with certified English translation for both the PhD and Master's degrees

### **Contacts**

Please contact Associate Professor Madan Kumar for details information.

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Web Page : <https://www.gtiit.edu.cn/en/viewStaff.aspx?staffNo=236>