

**INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE**  
**Mechanical and Industrial Engineering**

Dated: April 26, 2019

**ADVERTISEMENT TO FILL UP PROJECT POSITIONS\***

Applications are invited from Indian nationals only for project position(s) as per the details given below for the consultancy/research project(s) under the Principal investigator (Name: **Dr. Indra Vir Singh**, Dept./Centre: **Mechanical and Industrial Engineering, Indian Institute of Technology, Roorkee**)

1. **Title of project:** Multiscale Simulation Framework for Defect Formation Studies in Electronic Materials and Devices
2. **Sponsor of the project:** Department of Science and Technology (DST), New Delhi
3. **Project position(s) and number:** Junior Research Fellow, One
4. **Qualifications:** M.E./M.Tech. (GATE qualified) in Mechanical/Design/CADCAM/Applied Mechanics or equivalent with exposure/interest in finite element modeling and having consistently good academic record. Candidates with B.E./B.Tech. in Mechanical or Aerospace Engineering with GATE and having good academic record can also be considered.
5. **Emoluments:** Rs. 25,000\* per month (\*likely to be revised to Rs 31,000 per month)
6. **Duration:** Three Years (Upto 20/03/2021)
7. **Job description:** This is Indo-Korean joint research project on Computational Materials. In this project, defect mechanics-based multiscale computational model will be developed to better understand the defect formation mechanisms in electronic devices. This multiscale model will be further used to predict the device performance in presence of defects. To accomplish this work, the finite element formulation will be developed for piezoelectric solids with embedded dislocations. The quantum dot core/shell will be modelled by finite element method. Single dislocation at the interface of QD core/shell will be modelled and simulated by FEM/XFEM. Finally, the FE model developed by us will be coupled with MD model developed by Korean collaborator.

1. Candidates before appearing for the interview shall ensure that they are eligible for the position they intend to apply.
2. Candidates desiring to appear for the Interview should submit their applications with the following documents to the office of Principal Investigator through email, by post or produce at the time of Interview:
  - Application in a plain paper with detailed CV including chronological discipline of degree/certificates obtained.
  - Experience including research, industrial field and others.
  - Attested copies of degree/certificate and experience certificate.
3. Candidate shall bring along with them the original degree(s)/certificate(s) and experience certificate(s) at the time of interview for verification.
4. Preference will be given to SC/ST candidates on equal qualifications and experience.
5. Please note that no TA/DA is admissible for attending the interview.

**Note: The selected candidate may get an opportunity for PhD admission.**

The last date for application to be submitted to office of Principal Investigator is .....by 5 PM.  
 (not applicable for walk in interview)


The interview will be held at **Committee Room, East Block, Mechanical & Industrial Engineering Department, IIT Roorkee on 24/05/2019 at 11.00 am** (to be given only for walk in interview)



Tel: 1332-285888

Fax: 1332-285665

Email: [indrafme@iitr.ac.in](mailto:indrafme@iitr.ac.in), [ivsingh@gmail.com](mailto:ivsingh@gmail.com)

\*To be uploaded on IIT Roorkee website and copy may be sent to appropriate address by PI for wider circulation.

  
**Name and signature**  
**of Principal Investigator**  
 Professor  
 Dept. of Mechanical & Industrial Engg.  
 Indian Institute of Technology Roorkee  
 Roorkee - 245007, Uttarakhand, INDIA

Approved  
  
 प्रमुख (सि.वि.)/Dean (SRIC)  
  
 26.4.19