



Project internship opportunities for students pursuing Undergraduate and Post-Graduate degree courses from UGC recognized Indian Universities

Raja Ramanna Centre for Advanced Technology, Indore is a premier unit of Department of Atomic Energy, Government of India, engaged in R & D activities in front line research areas of Accelerator science, Laser science, related technologies and applications. In order to expose young students to the frontier areas of science and technology, the Centre offers Project work opportunities to final year students of B.Tech. / B.E. / M.Tech. / M.E. / M.Sc. in all branches, towards partial fulfilment of their undergraduate or postgraduate degree. Selected student has to carry out the project work under the guidance of a scientist or an engineer of RRCAT on all working days. The minimum duration of project work is six months and maximum will be twelve months

The main areas of project work at RRCAT are:

Accelerators:

The Centre has indigenously designed, developed, and commissioned two synchrotron radiation sources: Indus-1 and Indus-2, serving as a national facility. Indus-1 is a 450 MeV, 100 mA electron storage ring emitting radiation from mid-IR to soft x-ray with a critical wavelength of ~61 Å. Indus-2 is a 2.5 GeV electron storage ring designed for the production of x-rays. Indus-2 is presently the largest and highest-energy particle accelerator in the country.

The Centre is pursuing several other key accelerator activities, viz., the development of a high-energy proton accelerator for a spallation neutron source, electron accelerators for food irradiation and industrial applications, free electron lasers (FEL) in the terahertz (THz) and infrared (IR) spectral regions, superconducting and magnetic materials required for accelerators, the development of advanced technologies such as superconducting radio-frequency (SCRF) cavities and cryomodes, high-power radio-frequency (RF) generators, cryogenics, magnets, ultrahigh vacuum, precision fabrication, and control instrumentation to support the various R&D programmes.

Lasers:

The Centre is also involved in the development of a variety of laser systems and their utilisation for applications in industry, medicine, and research. The laser systems developed include high-power CO₂ lasers, flash lamp and diode pumped Nd:Glass / YAG lasers, semiconductor lasers, copper vapour laser, and high-energy/ high-intensity pulsed lasers. The industrial applications being pursued include cutting, drilling, welding, surface modifications, additive manufacturing, and development of optical fiber sensors. Various laser-based instruments have been developed. Lasers are being used for research in the areas of laser plasma interaction, laser-based charged particle acceleration, laser cooling and trapping of atoms, nonlinear optics, ultra-fast dynamics, material processing, biophotonics which includes R & D in the areas of photodynamic therapy, use of light for cancer diagnosis, imaging through turbid media, laser micromanipulation of microscopic objects, biomaterials and nanobiophotonics etc.

Materials Science:

R & D in the direction of development of materials in the form of crystals, nanomaterials and nanostructures, ceramics and composites for a wide range of applications in the area of laser and accelerator science and technology are being pursued.

Application Procedure:

Interested students should send his/ her application in the prescribed format duly forwarded by their Head of the Institution. Incomplete applications or not forwarded through Head of the Institute will be rejected.

Students will be selected based on their academic profile and the availability of suitable Guide in the area of interest (if any) mentioned in the application form. Selected candidates will be informed about their selection through email given in the application form.

[Application Form for Project work](#)

Duration of Project work and Important Dates

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| Winter project duration | : January to June of the calendar year |
| Last date to apply for winter projects | : 15 th November of the respective year |
| Summer project duration | : July to December of the calendar year |
| Last date to apply for summer projects | : 15 th May of the respective year |

Hostel Accommodation to Students

Free hostel accommodation will be provided to the outstation students, subject to availability in any of the hostels at RRCAT. Students have to strictly follow the discipline and guidelines as specified by the concerned authorities of RRCAT.

Financial Assistance

Students selected for project work are eligible for financial assistance, which includes:

- monthly stipend of Rs. 1000/- for the duration of project work
- reimbursement of "to and fro" second class railway fare, from the place of study to Indore or ordinary bus fare.

Financial Assistance is provided to only those students who are NOT getting any stipend, scholarship etc. from any other source. This must be certified by the Head of Department/ Institution.

Applications complete in all respect will be accepted by Email ONLY

Email:pcc@rrcat.gov.in

For any information / clarification regarding project work opportunities at RRCAT, you may contact:

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