

Departmental Profile: Physics

About the Department:

The department of Physics was established in 1962 which is now one of the best well-equipped center for undergraduate studies in this central part of India. The department aims to stimulate an interest in the social and economic implications of Physics in society. It has three separate laboratories including a dark room with more than 100 experimental set ups. Every year it caters around 300 UG students for regular curricular and co-curricular activities.

Highlights of the Department:

- Well-equipped spacious laboratories with more than 100 experimental set ups, computers and internet facility, separate departmental library.
Guidance center for Physics entrance exam for the higher studies viz. JAM etc.
- Recognized center for National Graduate Physics Examination (NGPE).
- Guidance center for active participation in various intercollegiate competitions.
- Linkage for student Internship programme with recognized national research institutes.
- *Active Astro Club*.
- Nanomaterials research division.

Sophisticated Major Instruments:

- X- ray diffraction (XRD) set-up
- G.M. Counter
- Digital Ultrasonic Pulse Echo Velocity Meter
- Hall Effect Measurement set up
- Magnetic Susceptibility apparatus
- Four probe Apparatus
- Dielectric Constant and Curie Temperature apparatus
- Fabry-Perrot Interferometer, Digital polarimeter
- B-H loop tracer
- Colorimeter
- Double distillation plant

Teaching Staffs:

Name	Qualification	Designation	Specialization	Area of Research
Prof. R.G. Jadhao	M.Sc.	Associate Professor	Electronics & Spectroscopy	Experimental Physics
*Dr. S.H. Bagade	M.Sc., Ph.D.,	Associate	Digital Electronics	Theoretical

	SET	Professor & Head	& SSP	Physics
Dr. R.D. Sontakke	M.Sc., Ph.D.	Assistant Professor	Electronics & Acoustics	Acoustics
Mr. G.V. Lakhotiya	M.Sc., SET, GATE	Assistant Professor	Nanomaterials	Multiferroics, Organic solar cells
Dr. S. D. Tiple	M.Sc., Ph.D.	Assistant Professor	Material Science	Fuel Cells

*Recognized PhD Guide of RTM Nagpur University

Recent Achievement of Students:

- Three students cracked NGPE 2018.
- One student got Gold medal in Physics for the year 2017 (RTMNU)
- Three students cleared National M.Sc. entrance exam JAM (Physics) for the year 2017.

Co-curricular programs of the department:

- **Physics Counseling Center:**

Under this center, students get the information regarding the recent developments in the world of Physics. Students get the information of the career opportunities in Physics through this cell.
Faculty Incharge: Prof. R.G. Jadhao

- **Experiment Fabrication Center:**

Under this unit, students are entertained to design the new experiments for the curriculum. Students are facilitated all the requirements for the fabrication and designing of the experiments. This center organizes some skill oriented workshops viz. *todu-jodu* workshop in which students used to utilize the parts of old faulty instruments to fabricate new.
Faculty Incharge: Dr. S. H. Bagade

- **Center for Physics Entrance Exam for Higher Studies:**

The department conducts weekly extra classes for the preparation of Physics entrance exam for the higher studies viz. JAM (Physics) etc. for advanced learners for free of cost. This programme was started since June 2014 and so many students get benefited from this programme.
Faculty Incharge: Mr. G.V. Lakhotiya

- **Astro Club:**

The Astro Club is an interdisciplinary hobby club started in 2017. It takes care of sky observations, regular events from the world of astronomy. It has a separate students' cell that used to conduct regular seminars, workshops, guest lecturers etc. Students also used to conduct some skill oriented workshops to fabricate viz. telescope under the guidance of some expert.
Faculty Incharge: Dr. S.R. Tiple

- **Recognised Center for National Graduate Physics Exam (NGPE)**

Bajaj College of Science is the recognized center for the NGPE examination conducted by the national body Indian Association of Physics Teachers (IAPT) since last decade.
Faculty Co-ordinator: Mr. G.V. Lakhotiya

Highlights of the syllabus under Autonomy:

The course design ensures that the graduating students with Physics as one of the subject will have the academic standard pre-requisites to take post-graduation programme in Physics as well as in many allied fields in India and abroad. The multidisciplinary skills they will be acquired will be of tremendous value to them especially if they choose to enter such cutting edge research areas; be it in Academia or in Industry. We believe that the graduates with physics will be a complete package to face any national competitive exams held for the graduates.

Syllabus contains the core branches including mechanics, oscillations and waves, thermodynamics, electrostatics, electricity and magnetism, electrodynamics, optics, atomic and molecular physics, statistical mechanics, solid state physics, quantum mechanics, electronics and solid state devices, nanophysics, astrophysics, relativity, nuclear physics. Along with the theory, skill oriented experiments including some innovative projects will prepare the students to orient themselves to bridge the gap between science and technology.