

Department of Physics
(DRS-SAP and DST-FIST Sponsored Department)
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Director : Prof. S. K. Menon

Head : Prof. P. N. Gajjar

Brief History

Department of Physics has a remarkable history of more than 50 years. The Department was established in the year 1959 with commencement of M. Sc.(PHYSICS) course with five faculty members. Initially department was offering specialization in Solid State Physics, Electronics and Nuclear Physics. The department established research activities in the areas of Solid State Physics and Ionospheric studies at very early stages. In the year 1973, P.G. Diploma Course in Space Sciences and its Applications was started. In 1989, the Department has started two year M.Sc. Electronics program. In 2009, the P.G.Diploma Course in Space Sciences and its Applications has been discontinued and a new “Advanced P.G.Diploma in Geoinformatics and Satellite Communications” course has been started. This diploma course is conducted in collaboration with renowned institutes like Space Application Centre (ISRO) and Physical Research Laboratory (PRL), Ahmedabad.

Present Scenario

At present, Department conducts M.Sc. (Physics), M.Sc. (Electronics Science), M.Phil (Physics), Ph.D (Physics) and P.G. Diploma in Geoinformatics and Satellite Communication courses. At present, there are Nine faculty members in the Department, sincerely involved in teaching and research in the following major areas.

- Ø Condensed Matter Physics (Theory and Experiment),
- Ø Material Science (Computational & Experimental)
- Ø Microwave Dielectrics
- Ø Ionosphere
- Ø Atmospheric Physics
- Ø Remote Sensing
- Ø Physics Education, etc.

Infrastructure

The department has established separate laboratories for teaching M. Sc. Courses and research in

Physics and Electronics, at Post graduate level. Major facilities available in the department for research are

- Precision LCR meter
- Atomic Force Microscope
- e-beam Evaporation System
- Computational Facilities
- Microtop-II Sunphotometer
- Software for Remote Sensing studies

Highlights

Since 2006, department is supported by DST through FIST (Level-I) Program. Very recently, UGC has granted the DRS-SAP to the department.

The department is updating the syllabus in regular intervals to remain active in recent trends of education. Department conducts Refresher

Courses for College and University Teachers. The specializations of the faculty cover almost all the major areas of Physics like condensed matter physics, plasma physics, nuclear physics, electronics, microwaves, material science, atmospheric physics, high energy physics, etc., sufficient to meet all the teaching requirements. Some members of the faculty have also received research awards, to name a few - Fellow of Gujarat Science Academy, Hari Om Ashram prize, and active awards like DST Boy Scout fellowship, DAE young scientists award and summer teacher fellowship of Indian Academy of Science (Bangalore). The active awards have enabled them to work in internationally renowned laboratories like Bhabha Atomic Research Center (Bombay), Indian Institute of Science of Bangalore, National Chemical Laboratory, Pune, Tokyo Institute of Technology, Japan, and acquire latest expertise in the area of material science – recent area of intense activity and great potential for applications. Faculty of the Department carried out some collaborative programmes (one to one basis) with Intra and Inter Department / Universities like Department of Chemistry, Department of Microbiology (Gujarat University), Sardar Patel University (Vallabh Vidyanagar), The M. S. University of Baroda (Vadodara), Bhavnagar University (Bhavnagar), Government Engineering College (Gandhinagar), L. D. Engineering College, Ahmedabad and Various Science Colleges of the State, as well as with some national and international organizations like: National Chemical Laboratory (Pune), Sardar Vallabhbhai National Institute of Technology (Surat), SAC-ISRO (Ahmedabad), Inter University Acceleration

Centre (New Delhi), IIT (Bombay), TIFR (Bombay), CEERI (Pilani), DAV Institute of Engineering & Technology (Jalandhar), The Cameron Group (USA #14017, 30 Ave, Surrey, BC, Canada), Department Of Chemistry (St. Francis Xavier University, Nova Scotia, Canada), National University of Singapore (Singapore), Centre for nonlinear studies (Hong Kong Baptist University, Hong Kong).

Department has identified **CONDENSED MATTER PHYSICS** as a major thrust area for the DRS-SAP programme of UGC. Our next five years plan is divided in experimental and theoretical/computational condensed matter physics activities. The activities for the other than thrust area are Ionosphere Research and Atmospheric Research.

Courses offered

(i) Course Name : Master of Science (Physics)
 Course Type : Grant in Aid
 Intake : 64
 Eligibility :
 B.Sc. (Physics)
 Subject offered/Specialization : Electronics
 Duration : 4 Semesters
 Selection Process : By merit
 Placement/Future Career Opportunity : Industry, Research Organization, Self employment, Academic Institutes

(ii) Course Name : Master of Science (Electronics)
 Course Type : Grant in aid + Higher Payment
 Intake : 15 + 15
 Eligibility :
 B.Sc. (Electronics)
 Subject offered/Specialization : -
 Duration : 4 Semesters
 Selection Process : By merit
 Placement/Future Career Opportunity : Industry, Research Organization, Self employment, Academic Institutes

(iii) **Course Name** : **M. Phil. (Physics)**

(iv) **Course Name** : **Ph. D. (Physics)**

(v) **Course Name** : **Advanced Post Graduate Diploma in Geoinformatics and Satellite Communication**

Course Type : Self Financed

Duration : Two

Semesters

Intake : 15

Eligibility : Post Graduation in Science with Graduation in Physics/Electronics as main

OR

B.E/B.Tech.

Subjects offered/Specialization : Atmospheric physics, Fundamentals of Remote Sensing, Basics and Applications of GIS, Microwave Systems, Satellite Systems and Orbits, Satellite Communication, Satellite Navigation.

Mobile Communication, Remote Sensing Applications, Photogrammetry.

Project

Selection Process : By merit

Fees : Rs.

20,000/- per Semester

Placement/Future Career Opportunity : ISRO centers, State

Remote Sensing centers,

: GIS and RS industry, Telecom Industry, Research Organization,

Self employment

Faculty Members

Name : **Prof. P. N. Gajjar**

Qualification : M.Sc., M.Phil., Ph.D.

Designation : Professor & Head

Areas of Specialization : Condensed Mater Theory, Computational Materials Science

Contact No. : 26303041(Off) 25733891 (Res) 9427028248 (mobile)

Email : pngajjar@rediffmail.com

Name : **Dr. (Mrs.) R. B. Jotania**

Qualification : M.Sc., Ph.D.

Designation : Professor

Areas of Specialization : Nuclear

Physics, Material Science, Solid State Physics

Contact No. : 26303041 (Off) 27683150 (Res)
Email : rbjotnia@gmail.com

Name : **Dr. P. D. Lele**
Qualification : M.Sc., Ph.D.
Designation : Associate Professor
Areas of Specialization : Electronics,
Ionospheric Physics, Physics Education
Contact No. : 26303041 (Off) 26305298 (Res)
Email : pdlele@hotmail.com

Name : **Dr. M. E. James**
Qualification : M.Sc., Ph.D.
Designation : Associate Professor
Areas of Specialization : Atmospheric Physics/ Meteorology
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Name : **Dr. (Mrs.) Deepti S. Tripathi**
Qualification : M.Sc., Ph.D.
Designation : Associate Professor
Areas of Specialization : Semiconductor Microwave Electronics
Contact No. : 26303041 (Off) 26761473 (Res)
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Name : **Dr. P. R. Vyas**
Qualification : M.Sc., Ph.D.
Designation : Associate Professor
Areas of Specialization : Theoretical Condensed Matter Physics
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Name : **Dr. V. A. Rana**
Qualification : M.Sc., Ph.D.
Designation : Associate Professor
Areas of Specialization : Microwave Dielectrics
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Name : **Dr. Utpal S. Joshi**
Qualification : M.Sc., Ph.D.
Designation : Associate Professor
Areas of Specialization : Experimental Condensed Matter, Electronics
Contact No. : 26303041 (Off) 26925686 (Res)
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Name : **Dr. S. M. Vyas**
Qualification : M.Sc., Ph.D.
Designation : Assistant Professor
Areas of Specialization : Condensed Matter
Physics (Experiment)
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