



Department of Materials Science

Sardar Patel University



UGC-CPEPA Phase-II (Associated Department)

UGC-CAS Phase-II

FIST level II, DST, New Delhi

Centre for Excellence in Nanoscience and Nanomaterials, GUJCOST, Gujarat

The Department of Materials Science was **established in 1990** as an Institution providing Interdisciplinary post-graduate courses in Materials Science and Nanoscience. Students from all over the country take admission in these courses and many of them go for higher studies in reputed institutes like IIT, NIT, Central Universities and for jobs at leading industries/organizations in India and abroad.

Department has achieved an excellent research progress record and is reflected from the number of frontier areas of research Projects in the last thirty three years. Distinguished faculty members provide guidance to students in order to improve their future prospects.



Facilities

- Sophisticated Instruments
- Classrooms with ICT facilities
- M.Sc. Practical
- Projects Laboratories
- Research Laboratories
- Library
- Networking Lab
- Seminar Hall
- Girls' and Boys' Room
- Counseling Room
- RO water cooler

Special Features

- Industrial Tour
- Internship
- Project Dissertation
- Seminar/assignment
- Placement



Vision

To produce skilled personalities
by broadening their knowledge in advanced Materials Science
which will be helpful to
build up their career in industries, academia and government organizations

Mission

To educate rural as well as urban students
in the interdisciplinary area of science through teaching and research



Curricular Aspects

Department of Materials Science is the only Department in Gujarat which offers M.Sc. and Ph.D. program in Materials Science

Academic Programmes

COURSE	INTAKE OF STUDENTS
M.Sc. (Materials Science)	20 GIA + 10 SF
M.Sc. (Nanoscience and Nanotechnology)	05 SF
Ph.D. programme (full time) offered in Materials Science	
For More details: https://www.spuvvn.edu/academics/departments/materials-science/academic-programmes/	

- ✓ The courses contain:
 - **Interdisciplinary aspects** of Physics, Chemistry and Engineering relevant to different types of materials
 - Different aspects of **Nanoscience and Nanotechnology**
 - Syllabi have verified and **revised** in 2016-17 and 2020-21
 - **Revision** of the syllabus is based on
 - Syllabus of GATE entrance test
 - Students/alumni feedback and suggestions
 - Suggestions from the members of board of studies, experts from the academics and industries.

Curriculum Design

Credits per semester		
Paper	Credits (Per paper)	Total credits (Each Semester)
Theory (Core + Elective) (04)	04	16
Practical/Project (02/01)	04	08
Comprehensive Viva-voce (01)	01	01
TOTAL		25
Total Credit for a course		25 × 4 = 100

- Continuous Evaluation through **Internal (30%)** and **External (70%)**
- Seminars, Quizzes, Tests, Attendance



Curricular Aspects

Courses focus on Employability (E), Skill Development (SD), Entrepreneurship (ET) and interdisciplinary (ID)

Core Courses

- Basic Concepts in Materials Science (E, SD)
- Polymer Science (E, SD, ET, ID)
- Interfacial Aspects of Materials Science (E, SD, ID)
- Thin Film Materials (E, SD, ET, ID)
- Semiconducting and Superconducting Materials (E, SD, ID)
- Spectroscopy (E, SD, ID)
- Microstructure Control and Metallic Processing (E, SD, ET, ID)
- Glass, Ceramic and Carbon Materials (E, SD, ET, ID)
- Fibers, Plastics and Elastomers (E, SD, ET, ID)
- Modern Characterization Techniques (E, SD, ID)
- Engineering Polymers (E, SD, ET, ID)
- Selected Topics in Nanoscience and Nanotechnology (E, SD, ID)
- Optical, Magnetic and Dielectric Properties of Materials (E, ID)

Elective Courses

- Defect Structures and properties of Materials (E, SD, ID)
- Solar Energy (E, SD, ET, ID)
- Composite Materials (E, SD, ET, ID)
- Testing Methods for films and rubbers (E, SD, ID)
- Materials and Environment (E, ID)
- Ceramic Technology (E, SD, ET, ID)

- Practicals in three semesters
- Project work in 4th semester



Programs and Fees Structure

Programs	Programme Type	Intake	Fees				
			1 st Sem	2 nd Sem	3 rd Sem	4 th Sem	PS/PY
M.Sc. (Materials Science)	Grant In Aid	20	3430	2510	2530	2510	PS
	Self-Finance	10	16600	15800	15800	15800	PS
M.Sc. (Nanoscience and Nanotechnology)	Self-Finance	5	16600	15800	15800	15800	PS



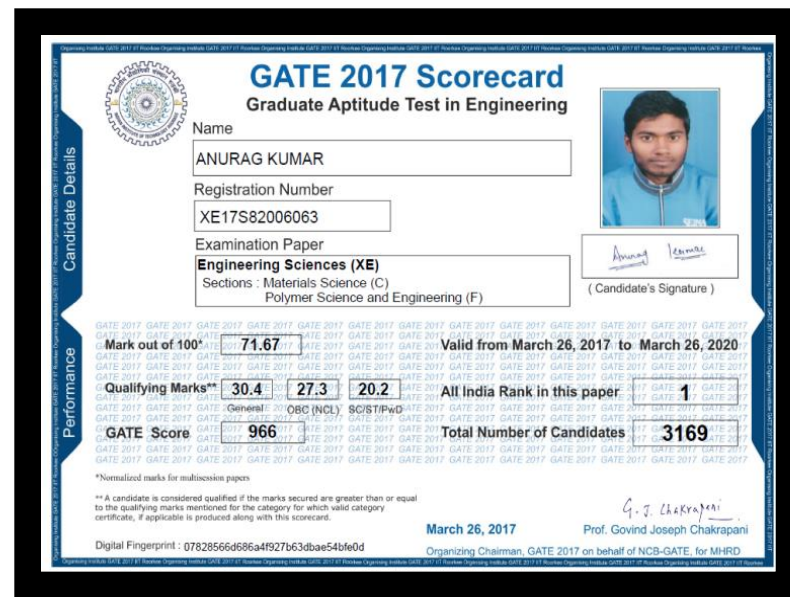
Faculty Members

Name	Designation	Exp. in Years	No. of Citations	h-index	I10 index
Prof. R. H. Patel M.Sc., Ph. D.	Professor & Head	33	444	11	14
Dr. J. K. Valand M.Sc., Ph. D.	Associate Professor	18	316	09	08
Dr. B. N. Socha M.Sc., Ph. D.	Adhoc Assistant Professor	03	249	09	06
Dr. S.U. Gupta M.Sc., Ph. D.	Adhoc Assistant Professor	01	69	06	04

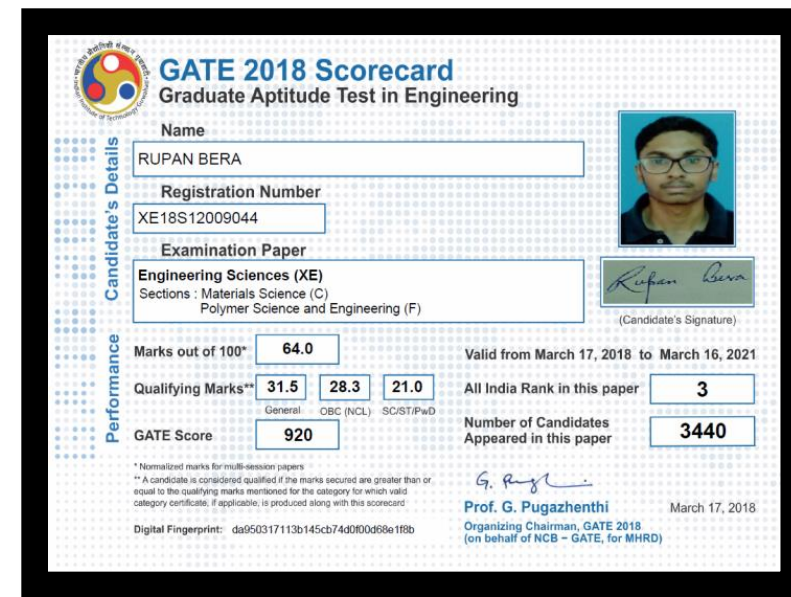


Students Performance at National Level Exams

Name of Examination	Year (Numbers)					Total
	2016-17	2017-18	2018-19	2019-20	2020-2021	
GATE	02	08	01	02	01	14



Anurag Kumar
AIR – 1 (2017)



Rupan Bera
AIR – 3 (2018)



Major Sophisticated Instruments



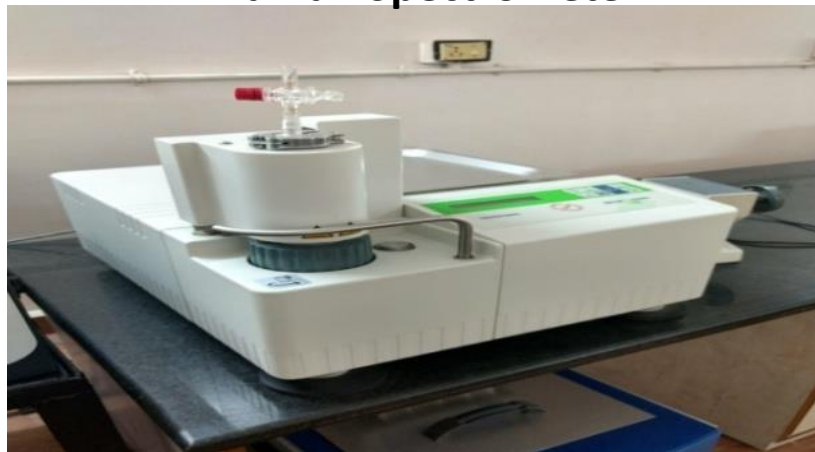
Raman Spectrometer



Scanning Electron Microscope



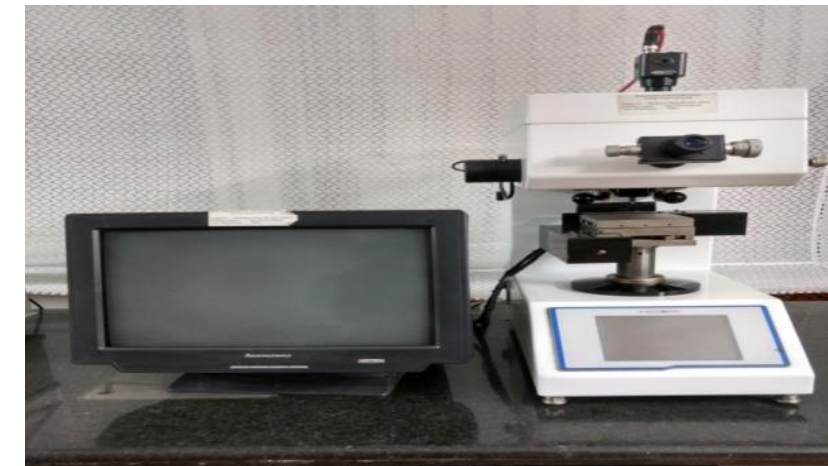
Tribometer



Thermo mechanical analyzer



Surface Area Analyzer



Micro Hardness Tester



Universal Testing Machine (Instron)



Particle Size Analyzer



Differential Scanning Calorimeter



Physical Facilities

The Department has adequate facilities for teaching and learning



ICT Enabled Class Rooms

04

Library & Networking lab

(Each 01)

Practical labs

(06)

Project and Research lab

(07)

Sophisticated instrument lab

04

Student room

02

RO water cooler facility

01

Gas generator 50 KV

01

Building fire safety

05

Air conditioned Seminar Hall

01

Store room

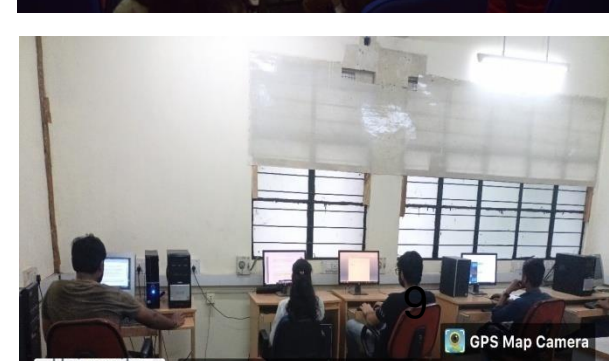
01

Faculty room

06

UPS 5 KV

04



Common facilities such as Health Centre, Gymnasium, Swimming Pool, Sports Facility and Hostels at University level

Ramp and Wheel Chair Facility



Library as Learning Resources

Departmental Library Facilities

Year	No. of Books/Journals Added	Amount (Rs. In lakhs)
2016-17	00/01	2.90
2017-18	68/01	14.33
2018-19	00/01	3.12
2019-20	06/01	2.93
2020-21	-	-
Total	74/04	23.28

IT Infrastructure Facilities

Computers 28 (M.Sc. 10)	LASER Printers 10	Scanners 01
Laptop 04	LASER Color Printer 01	Projector 06

Number of Books : **832**, Journals : **39**, Magazines: **20**

- Access to more than 250 journals through UGC (INFLIBNET)(up to 2019)
- Library Committee: Purchase



Student Support & Progression

Scholarships Received by PG Students

Year	SC	ST	OBC	Trust/ Endowment
2016-17	01	01	05	01
2017-18	02	---	05	01
2018-19	---	---	05	---
2019-20	02	---	05	---
2020-21	02	01	06	---
Total	07	02	26	02

Student Progression

Year	PG to MTech./Ph.D.	Placement
2016-17	01	11
2017-18	05	21
2018-19	08	10
2019-20	01	16
2020-21	03	22
Total	18	80



Materials Science Alumni Association (MSAA)



- **Alumni Meets** are organized specially on the convocation day
- **Alumni interactions** with present students are arranged
- Alumni members give moral support for the placement
- Financially help to the needy students
- Undertake collaborative research work with Department





Our Proud Alumni

Name	Affiliation and Organization
Mr. Anurag Kumar	Research Officer, DRDO , New Delhi
Dr. Hasmukh Patel	Senior Scientist, Aramco Americas , Texas, United States
Dr. Deval Vashistha	Senior Engineer, Automotive and Aerospace Solutions Division, 3M India Limited , Bengaluru
Dr. Chetan Panchal	Manager, First Solar , Malaysia
Dr. Vanraj Chauhan	Senior Engineer, Hazardous Materials , Transport for London, London
Dr. Raviraj Shah	Senior Scientist (R & D), HEG Limited , Bhopal
Dr. Mayank Shah	R & D Manager, Pidilite Industries Limited , Mumbai
Dr. Bharat Patel	Proprietor, Kana Advanced Composite Industries , Por, Vadodara
Mr. Hardik Patel	Proprietor, HSV Aditya Glass Line Pvt. Ltd. , Vitthal Udyognagar
Dr. Nilesh Parmar	Co-founder, Sahajanand Renewable Energy , Vadodara





Extension Activities & Institutional Social Responsibility

- Welcome ceremony of fresher (4)
 - Swacchta Diwas (3)
 - Garba day (4)
 - Blood Donation Camp (1)
 - Kite Flying Day (4)
 - National Science Day (3)
 - Expert Lectures (4)
 - Environment Day (2)
 - Talent Evening (3)
- Visits to academic institutes and Industries (3)
 - Sports Day (4)
 - Annual Function (3)





Science Day Celebration





Workshop





Kite Flying/ Navaratri / Department Day Celebration





Swacchta Diwas/ Environment Day





Industrial Visit

