Department of Physics
Birla Institute of Technology Mesra
Ranchi-835215 (India)

About Department of Physics:

The Department of **Physics** since its inception in **1955** has played a pivotal role in the institute. A gamut of very motivated, well qualified and talented faculty is actively engaged in teaching as well as research in areas of theoretical and experimental physics and technology. They have, to their credit, numerous research publications and several R&D projects. Some faculty members have been awarded international fellowships from universities abroad and some have received BOYSCAST fellowship awarded by DST, Government of India.

Vision

The vision of the department is to achieve excellence in undergraduate, postgraduate education and research for scholarly inquiry and development of new knowledge and Technology.

Mission

To train the students to be lifelong learners who will contribute to the creation of new knowledge, new technology, and innovation through excellence in research in emerging areas.

To educate students to be the future leaders in science, technology, industry, education and other professions and succeed in a globally competitive environment

To create national and international collaborations for research engagement in strategic areas of research

To provide beneficial service to local, state, national and international communities

The department has well equipped laboratories having several systems viz., RF magnetron sputtering, Plasma Enhanced Chemical Vapour Deposition (PECVD), thermal CVD, RF/DC magnetron co-sputtering, plasma nitriding, anodic vacuum arc deposition, plasma arc generator, polishing setup, Raman spectrometer, nanoindenter, solar simulator, D33 meter, PE loop-tracer, UV Visible Spectrometer, 10K cryostat etc.

The current broad areas of research in the department include quantum optics, nonlinear optics, nanotechnology, condensed matter physics. Specific sub-areas are plasma processing of materials, surface engineering with plasma coating, surface modification, anodic vacuum arc deposition of thin films, carbon nanotubes, diamond-like carbon (DLC) films, nano and ultrananocrystalline diamond films, carbon nanotubes, solar cells, nanocrystalline superhard coatings, high temperature superconductivity, colossal magnetoresistive materials, dilute magnetic semiconductors, piezoelectric materials, electronic composite materials, magnetic composites, soliton and light propagation, optical communication, photonic crystal fibres, optoelectronics, etc.

Programs Offered

Programs

- B.Tech. -Physics courses to all branches of undergraduate engineering programmes

- 5 Year Int. M.Sc. in Physics; (Started 2011; Intake: 30)
- 2 Years M.Sc. in Physics; (Started 2009; Intake: 15)

Research Program:

Ph.D.

- All branches of Physics
- Nanoscience & Technology
- Plasma Science and Technology
- Materials Science
  - Dielectric , Superconducting, Aerospace, Bio-materials etc.
- Photonics, Optical Communication & Nonlinear optics

Faculty Summary

Number of Faculty Members: 20

- **Professor: 04**
- **Associate Professor: 01**
- **Assistant Professor: 14**
- **Adjunct Faculty 01**
- **Scientific Officers 02**

Research Scholars currently Registered for PhD: 34

MSc./IMSc. Students: 75

Name of the Faculty, Designation & Qualification

S. No.	Name	Designation	Qualification
1	Dr. S. K. Sinha	Professor & Head	M.Sc., Ph.D.
2	Dr. S. Konar	Professor	M. Sc,. M. Phil., M. Tech. Ph. D.
3	Dr. S. Keshri	Professor	M. Sc., Ph. D.
4	Dr. S. K. Rout	Professor	M. Sc., Ph. D.
5	Dr. R. K. Paul	Associate Professor	M. Sc., Ph. D.
6	Dr. Rajeev Kumar	Assistant Professor	M. Sc. Ph.D.
7	Dr. E. Sinha	Assistant Professor	M. Sc., Ph. D.
8	Dr. K. Bose	Assistant Professor	M. Sc., Ph. D.
9	Dr. N. Srivastava	Assistant Professor	M. Sc., M. Tech., Ph. D.
10	Dr. R. Sharma	Assistant Professor	M. Sc., M. Tech., Ph.D.
11	Dr. S. K. Mukherjee	Assistant Professor	M. Sc., Ph. D.
12	Dr. M. Priya	Assistant Professor	M. Sc., Ph. D.
13	Dr. S. Lahiri	Assistant Professor	M. Sc., Ph. D.
14	Dr. D. K. Singh	Assistant Professor	M. Sc., Ph. D.
15	Dr. P. K. Tiwari	Assistant Professor	M. Sc., Ph. D.
16	Dr. Ramkrishna Devanjee	Assistant Professot	M. Sc. Ph.D.
17	Dr. Anupam Roy	Assistant Professor	M. Sc. Ph.D.
18	Dr. R. Ray	Assistant Professor	M. Sc. , Ph. D.
19	Dr. Suman Ghosh	Assistant Professor	M. Sc. , Ph. D.
20	Dr. Amitava Mitra	Adjunct Professor	M.Sc. Ph.D.

Dr. Sanjay K. Sinha (M.Sc., Ph.D), *Professor*

Date of Joining: 1 November, 2000

R & D Projects:

Completed (As PI)	Completed (As Co-PI)
ARDB (1) : Rs. 7.429 lakh	DST (2) : Rs. 62.49 lakh

Ph.D. Supervision:

Awarded :4	**Pursuing : 1**

PG Supervision:

M.Tech. :4	**M.Sc.: 8**	**Pursuing : 2**

Publications:

Research Paper	Books
Total Publications in Journal :45 Citations : 241, h-index: 8, i-10 index: 6	**01 (Edited) + 1 book chapter** **Reviewer: >10 Journals**
Papers in Conference : 07	
Conference Attended:33	

Conference Organized:

Convener, "Recent Developments in Engineering Materials" held during 12-14th May 2011, BRNS, DST Jharkhand, CSIR, BIT
DST-SERC School on "Science and Technology of Processing Plasmas", during December 15-27, 2008
National Symposium on Plasma Science and Technology, PLASMA-2003, Dec. 08-11, 2003

Award & Recognition:

Merit Certificate in B. Sc. (Ramnaryan Riua College) (1991).
ICTP TRIL Program: PDF at University of Padua (March 1998 to Oct. 1999). (Italy)

Dr. S. Konar (M.Sc., M.Phil., M.Tech., Ph.D), *Professor*

Date of Joining: 7 September, 2000

R & D Projects:

Completed
DST (4) : Rs. 57.52 Lakhs
DRDO (1) : Rs. 39.44 Lakhs
UGC(1) : Rs 10.14 Lakhs

Ph.D. Supervision:

Awarded :7		

Publications:

Research Paper	Books
Total Publications in Journal : 135	Introduction to Non-Kerr Law Optical Solitons, A. Biswas and S. Konar (Chapman & Hall,/CRC Press, USA, 2006)
Papers in Conference : 39	

Award & Recognition: **Citations : 2200, h-index: 22, i-10 index: 50**

National Scholarship (1973).	**Senior Editor:** Physics Express
Senior Associate of International Center for Theoretical Physics **(ICTP, Italy)**, (2007-2014).	**Editorial Board Member**: International Journal of Science, Technology and Society
Visiting Fellow: University of NewSouth Wales@ADFA, ACT, Canberra, Australia (May- July 2009)	**Reviewer of International Journals (15+)**

Dr. Sunita Keshri (M.Sc., Ph.D), *Professor*

Date of Joining: 1 September, 1995

R & D Projects:

Completed (As PI)	Completed (As CI/Co-PI)
DST- RFBR : 9 Lacs	ISRO (~ 10 Lacs)
DST (2) : 17.69 + 31.72 Lacs	
UGC (2) : ~5 + 5 Lacs	**SUBMITTED:1**
UGC-DAE CSR : 4.4 Lacs	

Ph.D. Supervision: **Awarded :5** **Pursuing : 1**

Publications:

Research Paper	Books
Total Publications in Journal : 52	**Book (Elsevier Publisher) Chapter: 1 (Writing another)**
Conference Abstract: 46	

Award & Recognition: **Citations : 345, h-index: 10, i-10 index: 11**

Secured Gold Medal in B.Sc. (Univ. Topper, Burdwan University, WB)	Life member of Indian Assoc of Phys Teachers
Worked as a coordinator of an Indo-Russian (DST-RFBR) bilateral project	Life member of Nano & Molecular Society
Served as Resource person of several Refresher Courses of UGC and AICTE and Invited speaker.	Having several International Collaborations

Dr. S. K. Rout (M.Sc., Ph.D), *Professor*

Date of Joining: 14 November 2006

R & D Projects:

Ongoing		Completed	
BRNS (1)	: Rs. 35.00 Lac	DST (2)	: Rs. 23.35 Lac + Rs. 24 Lac
DST	: Rs. 59.00Lac	UGC(1)	: Rs 12.07Lac
		NRB (I)	: Rs. 15.90 Lac
		AICTE (I)	: Rs 5.75 Lac (CI)

Ph.D. Supervision:

Awarded :5	Pursuing : 5

Publications:

Research Paper
Total Publications in Journal : 109
Papers in Conference : 5

Award & Recognition:

Research ID: Citations : 1,539, h-index: 22, Average:15

Google Scholar: Citations : 2391, h-index: 27, i-10 index: 64

Associate Editor	--Physics Express (Till 2015)
Guest Editor	-- Journal of Nanomaterials (During 2014)
Bharat Jyoti Award, 20012 by India International Friendship Society, New Delhi.	
BOYSCAST fellow -1st April, 2008 to 31st Mar 2009	

Conference Organized

Condensed Matter Days-2013

Dr. R. K. Paul(M.Sc., Ph.D), Assoc. *Professor*

Date of Joining: 1 October, 2001

R & D:

Field of Specialization/Research	Plasma Physics

Publications:

Research Paper
Total Publications in Journal : 14

Academic Qualifications :

a) Passed B.Sc. (Honours in Physics) with 62.6%, from the University of North Bengal (1980-1983)

b) Obtained M. Sc. (Post Graduate, Spl. Paper – Nuclear Physics) degree in Physics with 62% from the University of North Bengal

c) Obtained Ph.D. degree in Physics (October 1996) from the University of Calcutta(worked at SINP as Research fellow)

d) Post Doctoral Fellow at Saha Institute of Nuclear Physics, Kolkata (October 1996-April 1999)

e) Visiting Scientist at Saha Institute of Nuclear Physics, Kolkata (16.10.2000-16.12.2000)

Work Experience:

- Lecturer at Birla Institute of Technology, Mesra, Ranchi from October 1, 2001 to January 31, 2003.
- Lecturer (selection Grade) at Birla Institute of Technology, Mesra, Ranchi , October 1, 2005 to 2008
- Associate Professor and In-charge Physics dept, BIT Mesra, extension centre Deoghar from 2008 to Dec 2015.
- At present Associate Professor Physics dept, BIT Mesra.

Dr. Rajeev Kumar (M.Sc., Ph.D), Asst. *Professor*

Date of Joining: 1 Dec 2005

Field of Specialization/Research	Plasma Physics

Publications:

Research Paper
Total Publications in Journal : 07

Dr. Kinshuk Bose (M.Sc., Ph.D), Asst. *Professor*

Date of Joining: 1 January 2008

R & D Projects:

Completed
DST (1) : Rs. 25 Lacs

Ph.D. Supervision:

Awarded :01

Publications:

Research Paper
Total Publications in Journal : 7
Papers in Conference : 10

Award & Recognition:

Citations : 08, h-index: 1, i-10 index: --

Dr. Ela Sinha (M.Sc., Ph.D), Asst. *Professor*

Date of Joining: 17 July 2010

R & D Projects:

Ongoing	Completed
DST (1) : ~Rs. 29.68 Lac	DST (1): Rs. 20.50Lac (fast track)
BRNS (1) : Rs. 35.00 Lac (as CI)	

Ph.D. Supervision: Awarded: 1, Pursuing : 02

Publications:

Research Paper
Total Publications in Journal : 33
Papers in Conference : 02

Award & Recognition:

Research ID: Citations : 567, h-index: 13, Average:15.62

Google Scholar: Citations : 714, h-index: 15, i-10 index: 15

DST-Women scientist awarded during Ph.D study at NIT, Rourkela

Dr. Nishi Srivastava (M.Sc.,M.Tech. Ph.D),

Asst. *Professor*

Date of Joining: 30 August 2012

R & D Projects:

Completed
DST (1): Rs. 20.5 Lacs

Ph.D. Supervision: Awarded :01; Purcuing:1

Publications:

Research Paper	Books
International Journal (SCI) : 11	**Book Chapter:2** • (IGI Global) 701 E. Chocolate Avenue Hershey PA, USA 17033) • forthcoming Book with NOVA Book
Proceeding : 5	
Papers in Conference : 28	

Award & Recognition: **Citations : 85, h-index: 4, i-10 index: 1**

I.I.Sc. Bangalore Ph.D. Fellowship	Cellular-Mix- PRoFIRMEC PhD" scholarship of the Embassy of France
CSIR-UGC JRF (2009)	Life member : The Indian Aerosol Science and Technology Association Indian Meteorological Society, India Association of Aerosol research Life Member of South Asian Meteorological Association
GATE (2003,2004,2006)	SERB Overseas Post Doctoral Fellowship 2016 Nodal person under National Clean Air Program

Dr. Rishi Sharma (M.Sc., M.Tech, Ph.D), Assistant Professor

Date of Joining: 1 April, 2008

R & D Projects:

Ongoing (PI)	Completed (PI)	Completed (Co-PI)
Rs. 27.465 lakhs	Rs. 25.185 lakhs	55.99 lakhs

Ph.D. Supervision:

Awarded :1	Pursuing : 4

PG Supervision:

M.Tech. :06	M.Sc.: 14	B.Tech: 03	Pursuing : 2

Publications:

Patent: 01	Book Chapter: 01
Publications in Journal :18	Conference/Training Attended: 22
Conference Proceeding : 01	Citations : 172, h-index: 5, i-10 index: 3

Award & Recognition:

Visited University of Duisburg-Essen, Germany, twice as a 'Visiting Scholar' under DST-BMBF, Indo-German Bilateral Cooperation in Science & Technology (from 2008 to 2010)

GATE 2003; Reviewer 8 SCI Journals; Reviewed 2 DST Projects; Monitoring Committee Member: 1 CSIR Project

Research Areas: *Graphene, Diamond-like Carbon films, Nanocrystalline Diamond films, Solar Cells, Plasma processing of materials*

Dr. Sanat Mukherjee (M.Sc., Ph.D),

Asst. *Professor*

Date of Joining: 1 Sep 2009

R & D Projects:

Ongoing
UGC-DAE CSR: Rs. 10.80 lacs

Ph.D. Supervision: Awarded: 1, Pursuing : 02

Publications:

Research Paper	Books
Total Publications in Journal : 19	Lambert Publication
Papers in Conference : 01	

Award & Recognition:

Citations :106 , h-index: 5, i-10 index:2

JRF-NET (2008, CSIR).	Academic Staff member (Universität Duisburg-Essen, Germany, Nov 2010-Apr 2011)
GATE 2008 (AIR159; percentile 97.25)	Post Doctoral Research Associate (Universität Duisburg-Essen, Germany, Apr 2012-July 2013)
CSIR-SRF 2008	

Dr. Madhu Priya (M.Sc., Ph.D), *Assistant Professor*

Date of Joining: 24 May, 2017

R & D Projects:

Awarded (As Co-PI) : DST-SERB, CRG (2022)
Completed (As PI): DST-SERB : Rs. 22.45 lakh

Ph.D. Supervision:

Ongoing : 2

PG Supervision:

M.Sc.: 6	**Pursuing : 2**

Publications:

Research Paper	Books
Total Publications in Journal : 5	**1 book chapter**
Papers in Conference : 2	
Conference Attended: 22	

Citations : 27, h-index: 3, i-10 index: 1

Award & Recognition:

DAAD Postdoctoral Fellowship, June 2013-November 2015

Dr. Sourabh Lahiri (M.Sc., Ph.D),

Asst. *Professor*

Date of Joining: 12 June 2017

R & D Projects:

Ongoing
DST (1): Rs. 21.5 Lacs

PG. Supervision:

Awarded :1	Pursuing : 02

Publications:

Research Paper
Total Publications in Journal :22

Award & Recognition:

Citations :216 , h-index: 8, i-10 index: 6

Certificate of Merit awarded by IAPT in 2004

Dr. D.K. Singh (M.Sc., Ph.D), Asst. *Professor*

Date of Joining: 13 June 2017

R & D Projects:

Ongoing
DST(1) :Rs. 35 Lacs

Ph.D. Supervision: Awarded: 1, Pursuing : 02

Publications:

Research Paper
Total Publications in Journal :34
Proceedings:5
Papers in Conference :34

Award & Recognition: Citations :623 , h-index:12 , i-10 index:15

Award:

1. **DST-Inspire Faculty award (2013) Physical Sciences.**

Reviewer:

Physical Review Letters (APS), Journal of Applied Physics (AIP), Scientific Reports, Colloids and Surfaces B: Biointerfaces, New Journal of Chemistry

Life Membership :

1. Indian Carbon Society
2. Material Research Society of India (MRSI)
3. Electron Microscope Society of India
4. Plasma Science Society of India (PSSI)
5. Ion-beam society of India (IBS)

Dr. P.K. Tiwari (M.Sc., Ph.D),

Asst. *Professor*

Date of Joining: 1 Feb 2018

PG/UG Supervision:

Awarded :	Pursuing : 04 (PG)+04 UG

Publications:

Research Paper
Total Publications in Journal : 20
Papers in Conference (National+ International) : 02

Award & Recognition: **Citations :109 , h-index:5 , i-10 index:2**

Awarded Prize for excellence in the poster presentation at 6th International THz-Bio workshop 2015, Seoul National University, Seoul,	Qualified Graduate Aptitude Test in Engineering(GATE), 2007. All India Rank: 146, Percentile: 97.4
Awarded Brain Korea 21 Plus Post-doctoral fellowship: Department of Physics & Astronomy, Seoul National University, Korea	Qualified Joint Entrance Screening Test (JEST 2007) All India rank 101, Percentile 97.51.
Young researcher fellow award in International Conference on Nanoscience and Nanotechnology (ICONSAT 2012).	Qualified National Eligibility Test (NET) (2007). , Conducted by CSIR, India
UGC meritorious fellow Research scholarship (January 2008)	

Dr. Anupam Roy (Ph.D.), *Asst. Professor*

Date of Joining: 29 October, 2021 (requested)

Specialization: *Experimental Condensed Matter Physics, Surface Physics and Materials Science, Epitaxial Thin Films and Nanostructures, Layered Materials.*

Publications:

Research Publication(s)	Book(s)
Total Publications in Journal : 61	02 Book Chapters
Papers in Conferences : 12	
Conferences : 48	

Award & Recognition: Citations: 1243, h-index: 17, i-10 index: 34

National Scholarship at Secondary Exam (1998), B.Sc. (Physics Hons) (2001).
Ranked 14th (99.49 percentile) in All India Joint Entrance Screening Test Physics (JEST) 2003.
Postdoctoral Fellow at The University of Texas at Austin USA (February 2012 – June 2014).
Research Associate at The University of Texas at Austin USA (Current position since July 2014).
Onsite Expert at Texas Nanofabrication Facility (TNF), The University of Texas at Austin supported by National Nanotechnology Coordinated Infrastructure (NNCI), National Science Foundation (NSF), USA.
Reviewer of 25 International Journals. National Nanotechnology Coordinated Infrastructure (NNCI) Outreach Leader. Supervised a student as part of NNCI Research Experience for Undergraduates (REU) program managed by UT Austin.

Dr. Rajyavardhan Ray (Ph.D), Asst. Prof.

Date of Joining	December 2021
Research Interests	Strongly correlated and spin-orbit coupled systems
Areas of Expertise	Density Functional Theory (DFT), Classical Monte Carlo simulations, Effective Hamiltonian techniques

R & D Projects	**As PI**	Leibniz-Inst fur Feskorper und Werkostfforschung (IFW) Excellence Project 2020: ~ Rs 1 Crore	**Ongoing**
	As Co-PI	0	
Publications	**Citations: 430, h-index: 9, i-10 index: 9**		
	Journals Published	**26**	
	Conference Proceedings	**5**	
	Pre-prints	**7**	
Other Research Contributions	**Invited Talks**	**8**	
	Contrib. Talks/Posters	**6**	

Research Highlights

- Tunable chirality of noncentrosymmetric Weyl semimetals arXiv: 2006.10602 (2020).
- Topological electronic structure and intrinsic magnetization in $MnBi_4Te_7$: A Bi_2Te_3 derivative with a periodic Mn sublattice, Phys. Rev. X **9**, 01065 (2019).
- Air-stable redox-active nanomagnets with lanthanide spins radical-bridged by a metal–metal bond, Nature Commun. **10**, 571 (2019).

Dr. Suman Ghosh

(M.Sc., Ph.D), Asst. *Professor*

Date of Joining: 16 December 2021

Area of Interest: Theoretical Physics Quantum field theory in curved space time

Publications:

Research Paper
Total Publications in Journal : 14

Dr. Ram K. Dewanjee (M.Sc., Ph.D),

Asst. *Professor*

Date of Joining: 20 December 2021

Area of Interests: Particle Physics One of the main analysts in the search for top-quark associated Higgs boson production (tt'H/tH) in the multi-lepton final state

Publications:

Research Paper
Total Publications in Journal : 7
Papers in Conference : 5

Award & Recognition:

- Gold Medalist at the National Graduate Physics Exam (NGPE-2008)
- Diploma in advanced computing from CERN IT Department and Universidad Polytechnica de Madrid (Spain)

Citations :83 , h-index: 2, i-10 index:1

Dr. Amitava Mitra (M.Sc., Ph.D),

Adjunct Faculty

Date of Joining: 22 Feb 2021

Field of Specialization/Research	Magnetism & Magnetic Materials and their applications

Publications:

Research Paper
Total Publications in Journal : More than150

Patent
About 15 Patents filed in India and Abroad

Award & Recognition:

1. Recipient of National Metallurgist Day Award: Metallurgist of the year-2006 conferred by Ministry of Steel, Government of India for his contributions in the field of Metal Science.
2. Recipient of National NDT award in the year 1997 for R&D and in the year 2000 for system development which were conferred by Indian Society for NDT.
3. Received Materials Research Society of India Medal in the year 2011.
4. US AID Fellow and worked at Ames Laboratory, Iowa state University, USA
5. JSPS invitation Fellow and worked at Institute of Materials Research, Tohoku University, Sendai, Japan and Iwate University, Morioka, Japan.
6. Fellow of Indian Institute of Metals, Institute of Engineers (India) and Indian Society for NDT.
7. Has developed important Technologies at CSIR-National Metallurgical Laboratory, Jamshedpur

Area of Research at PhD Level

- Photonic Crystal Fibres
- Optical Solitons and Nonlinear Optics
- Optical Communication
- Nanotechnology
- Colossal Magneto-resistive Materials
- Solar Cells & MOS Devices
- Graphene and Carbon Nanotubes
- Thin film thermocouple
- Diamond-like Carbon Films & Nanocrystalline Diamond Coatings
- Raman Spectroscopy
- Device Physics / Electronics
- Fluid Dynamics
- Ferroelectric Materials
- Piezoelectric Materials
- Hard Coatings
- Fiber Composite Materials
- Electronic and Magnetic Composite Materials
- Non-equilibrium Statistical Mechanics
- Theoretical Soft Condensed Matter Physics
- High Temperature Superconductivity
- Dilute Magnetic Semiconductors
- Atmospheric Physics
- Air Pollution Modeling

Research Papers Publication in Journal

(in last 5 Years)

Total No of Journal Research Paper Publications by Faculty Members in the Department : > 400

Ongoing Projects

Total **Ongoing** projects in the department :6
Total Projects Grant Amount : **Rs 130.45 Lakhs**

1 Development of super-lubricated Nano-crystalline Diamond film on bearing materials for aerospace applications				
Dr. Rishi Sharma, Dr. S.K. Mukherjee	AR&DB	18.12.19	3 Years	26.115 Lakhs
2. Faster and brighter single photons from 2D crystals and their interfacing with plasmonic waveguides.				
Dr. D.K. Singh, Dr. L.N.Tripathy, Dr. R.V. Nair (IIT Ropar)	CRS Scheme NPIU TEQIP MHRD	11.07.2019	1 Year	13.69 Lakhs
3. Electrical and magnetotransport studies of nano-devices of few/mono-layer transition metal dichalcogenides.				
Dr. S. Baruah Dr. D.K. Singh	CRS Scheme NPIU TEQIP MHRD	11.07.2019	1 Year	19.00 Lakhs
4. Nonlinear rheology of dense colloidal suspensions				
Dr. Madhu Priya	DST-SERB	24.08.2018	3 Years	22.45 Lakhs
5. Study of Stochastic Heat Engines using Active Particles				
Sourabh Lahiri (PI)	DST-SERB	25.10.2018	3 years	21.49 Lakhs
6. Biocompatibility and mechanical studies of nanostructured HAP, metal doped nanostructured HAP on alumina by RF Magnetron Sputtering				
S K Sinha(Co-PI)	DST-SERB	28 Feb 2022	3 years	27.72 Lakhs

Recent Conference /Short Term Course/ Workshop / School Conducted in the Department

Name of the Conference / Short Term Course/ Workshop /S	Chairperson	Convener/ Coordinator/	Year
One Day Workshop on "Intellectual Property Rights (IPR)"	Prof. S. Konar	Dr. Dilip Kumar	2019
Science Academic Refresher Course on Experimental Physics	Prof. S. Keshri (Ex-Officio, HOD Physics)	Dr. S. K. Mukherjee/ Dr. R.Sharma	2018
National Conference on Nanoscience, Nanotechnology and Advanced Materials	Prof S. Keshri Prof. S. Konar	Dr. S. K. Rout	2016
One Day Workshop On Solar Cell	Prof. S. Konar	Dr. R.Sharma	2014
Condensed Matter Days	Dr. Jairath	Dr. S. K. Rout	2013
Recent Development in Engg. Materials	Dr. Jairath	Dr. S. K. Sinha	2011

R & D Equipments in the Department

Software and computational facilities

Matlab (For scientific computation)

Mathematica (For calculations)

VASP (For Molecular & CMP simulations and Modeling)

Labview (For automation and instrumentation)

Workstation for Heavy computation (02)

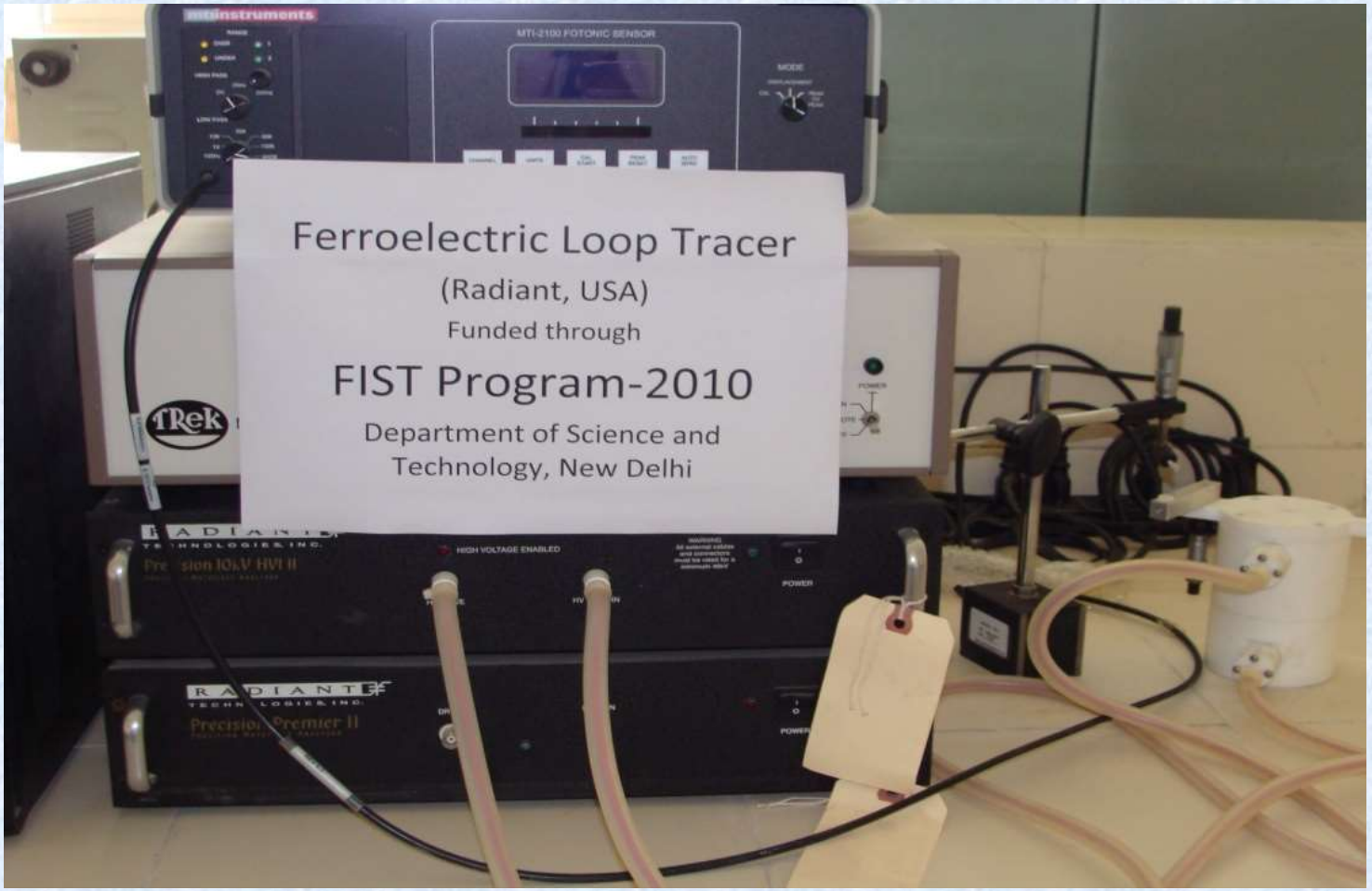
Computation terminals for M.Sc students (~ 50 Nos)

Experimental Facilities

Raman Spectrometer

NanoIndenter & NanoTribometer

Ferroelectric Loop Tracer

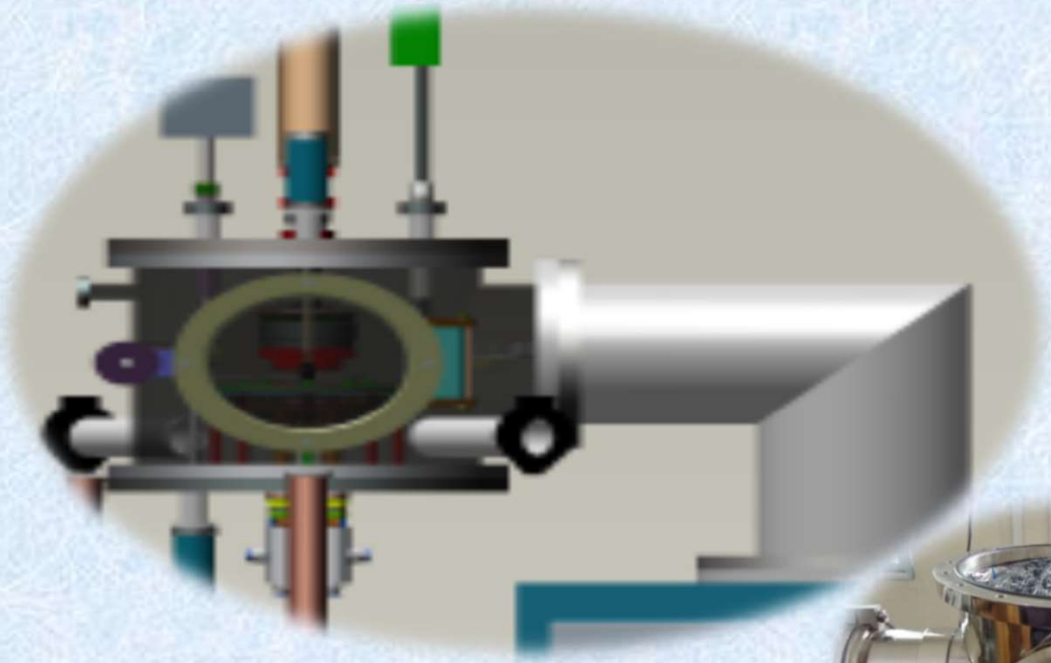


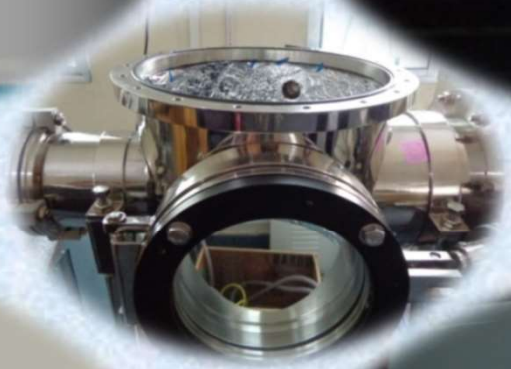
RF-PECVD system

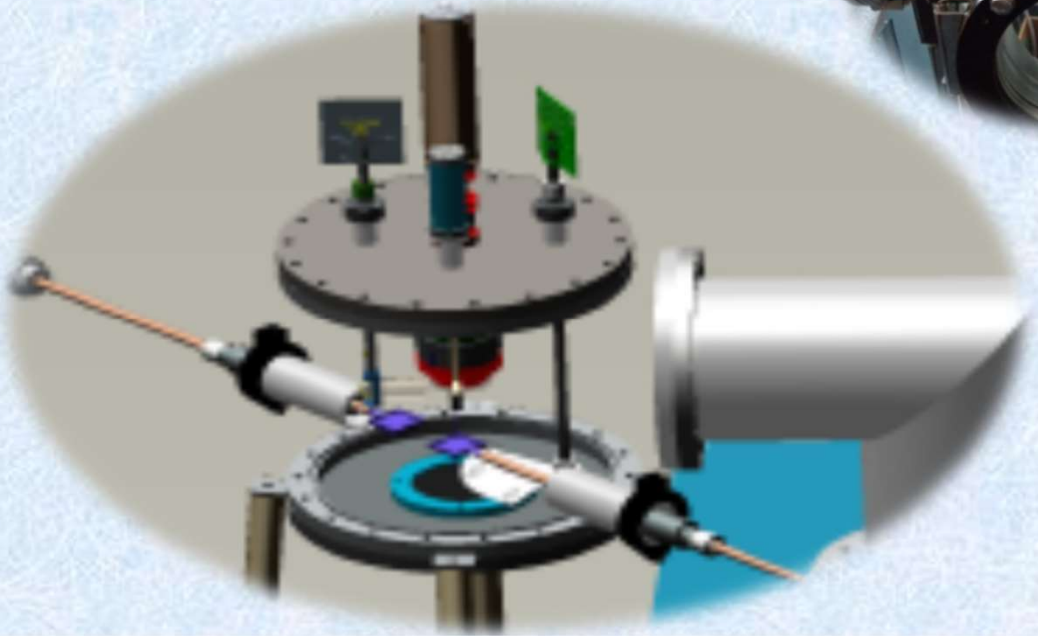
Microwave PECVD System

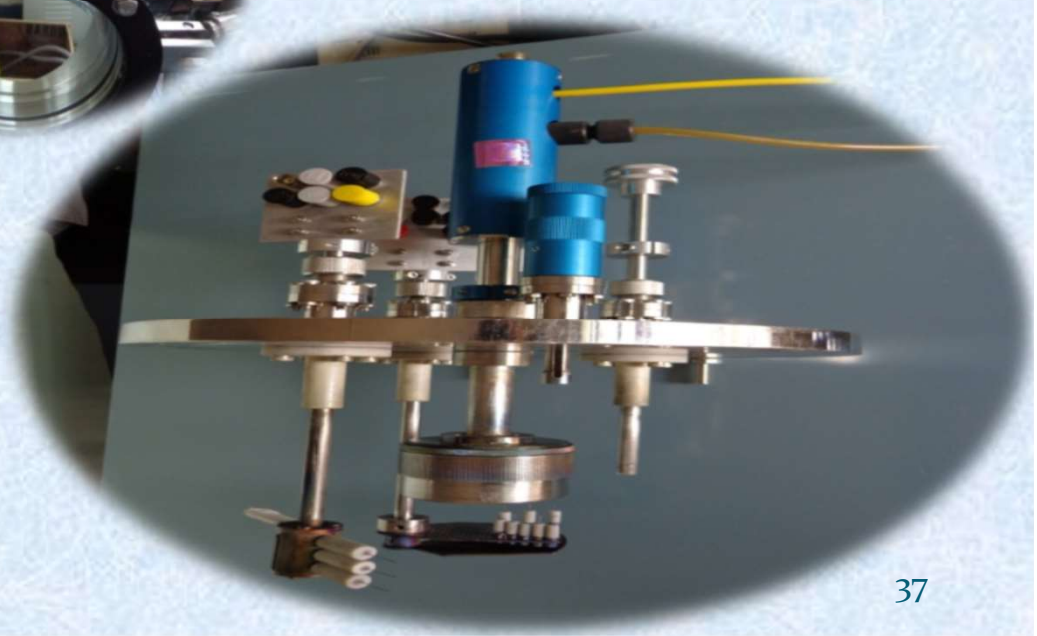
DC-PECVD system

System for Plasma Diagnostic









Thermal CVD System

RF/DC Magnetron Co- sputtering system

Nitriding System

Anodic vacuum Arc Plasma Deposition System

Plasma Torch

Solar Simulator

Three Target RF Magnetron Sputtering System

Cryostat Setup with Magnet (2 tesla)

APPJ System with RF supply

Central Research Facility at BIT Mesa

1. Gel Permeation Chromatography, GPC		Molecular wt of polymers
2. Differential Scanning Calorimeter (DSC)	TA Instruments,	Thermal Analysis
3. Thermo Gravimetric Analyzer (TGA)		Thermal analysis
4. FT-IR Spectrophotometer		Group determination
5. Spectro fluorophotometer		fluorescent group
6. Particle Size Analyzer and Zeta Potential Measurement System		Elemental analysis
7. Electrochemical Analyzer	CH Instruments,	Corrosion measurements
8. Surface Tensiometer		Surface tension
9. Optical Contact angle		Wettability
10. C, H, N, S, O Analyzer		Elemental analysis
11. Color Measurement System	Hunter Lab,	Nanomaterials analysis
12. Atomic Force Microscope(AFM)		Surface analysis
13. Ellipsometer	Nano-View Inc.,	RI measurement
14. Scanning Electron Microscope(SEM)	JEOL,	Surface and EDX
15. Porosity Measurement System	Thermo Fisher Scientific,	Porosity measurements
16. Gas Chromatography(GC)		Elemental analysis
17. Universal Testing Machine		Mechanical properties
18. Pulse Analyzer	OROS	Analysis
19. FESEM		Surface analysis
20. GXRD		Compound, Phase formation
21. Polishing Machine		Polishing purpose
22. Dynamic Contact Angle (DCA)	; DCAT21	Wettability
23. Impedance Analyser	Novocontrol ;	Impedance measurements
24. UV·Visible Spectrophotometer	Perkin ; Lambda-25	Band gap measurements
25. Mercury Porosity Meter	Thermo electronics, ; PASCAL 440	Porosity measurements

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