DEPARTMENT OF BIOTECHNOLOGY

RESEARCH PROJECTS

Research efforts in the thrust areas of the department reflect in sponsored research grants of ~ ₹ 90 million from premier funding agencies of Govt. of India namely: Department of Biotechnology (DBT), Science and Engineering Research Board (SERB), Department of Science & Technology (DST) and Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), All India Council for Technical Education (AICTE) and Indian Council for Medical Research (ICMR).

ONGOING PROJECTS

Sr. No.	Title of the Project	Duration	Funding Agency	Sanctioned Fund (Lakh)	Investigator/s
1	Building integrated pipeline for cancer genome analysis: Role of mobile genetic elements in cancers.	2017-2020	DBT	29.38	**PI:** Dr. Kamal Rawal **Co-PI**: Dr. Sanjay Gupta
2	Potentially novel carbohydrases (cellulase and related enzymes) for waste management from cultivable bacteria and functional metagenomic library of North East India biodiversity hotspot.	2017-2020	DBT	22.21	**PI:** Dr. Indira P. Sarethy
3	Development of inhibitors to target glyoxylate and methylcitrate cycles essential for persistence of *Mycobacterium tuberculosis*.	2015-2018	ICMR	34	**PI:** Dr. Vibha Gupta **Co-PI:** Dr. Chitranjan Rout
4	Identification of cellular targets of Chikungunya virus non-structural proteins.	2016-2019	ICMR	34.1	**PI:** Dr. Sanjay Gupta **Co-PI:** Dr. Reema Gabrani
5	Evaluation of the heavy metals content in market samples of plant raw drugs used in Ayurveda.	2018-2021	AYUSH	41.1	**PI:** Dr. Pammi Gauba

6	Application of customized PGPM based formulations for reclamation of soil permeated with Organophosphate pesticide residues.	2017-2020	DBT	62.1	**PI:** Dr. S Krishna Sundari **Co-PI:** Dr. Sudha Srivastava
7	Investigating microRNAs as the Next Generation Therapeutic Targets in Diabetic Cardiomyopathy.	2018-2020	SERB-DST	40	**PI:** Dr. Vibha Rani
COMPLETED PROJECTS					
1	Screening of native microbes with tannase ability, production of tannase and gallic acid using alternate growth substrate.	2012-2015	DBT	19.44	**PI:** Dr. S Krishna Sundari
2	Stage Specific microRNAs profiling from developing chick embryonic heart.	2012-2016	DBT	42.4	**PI:** Dr. Vibha Rani
3	Effect of Curcumin on Cardiac hypertrophy.	2012-2016	DBT	32.9	**PI:** Dr. Vibha Rani
4	Ability of select PGPM strains to remediate organophosphate pesticides commonly applied in agriculture.	2013-2015	DBT	6.59	**PI:** Dr. S Krishna Sundari
5	Development of a biocatalyst for the removal of nitrogen and sulphur from diesel.	2014-2016	DBT	24.9	**PI:** Dr. Nidhi Gupta **Co-PI:** Dr Sanjay Gupta
6	Nanoparticles based amperometric biosensor for detection of thyroid dysfunctioning.	2014-2017	DST	37.3	**PI:** Dr. Sudha Srivastava **Co-PI:** Dr. Vibha Gupta
7	Development and evaluation of green tea catechins based intravaginal nanoemulsion gel for the treatment of urinary tract infections.	2013-2016	DBT	23.53	**PI:** Dr. Shweta Dang **Co PI:** Dr. Reema Gabrani

8	Formulation of Microbial Consortia with Parallel biofertilizer and biocontrol properties.	2010-2014	DBT	57.39 (JIIT: 24.22)	**PI:** Dr. S Krishna Sundari **Co-PI:** Dr. Reena Singh (TERI, New Delhi)
9	Designing a nanoparticle based glucose biosensor.	2009-2012	AICTE	8.4	**PI:** Dr. Sudha Srivastava
10	Purification of Chikungunya Virus nsP3 Protein for Peptide Based Inhibitor and Structural Studies.	2013-2016	DBT	68.6	**PI:** Dr. Sanjay Gupta
11	Development for reagents for simple immunochemical tests for the detection of Chikungunya infection.	2014-2017	DBT	141 (JIIT: 18.2)	**PI:** Dr. Sanjay Gupta (For JIIT)
12	Viral-viral and viral-host protein interactions in Chandipura virus mediated encephalitis.	2010-2013	DST	35	**PI:** Dr. Sanjay Gupta **Co-PI:** Dr Reema Gabrani
13	Mapping viral host protein interactions of Chikungunya virus (CHIKV viral-host interactions).	2009-2012	AICTE	15.45	**PI:** Dr. Sanjay Gupta
14	Structural Biology of Cyse from pathogenic organisms - Potential for rational drug design.	2013-2017	DBT	44.11	**PI:** Dr. Vibha Gupta
15	Mapping of the interactions among Chikungunya virus proteins (CHIKV viral-viral interactions).	2008-2011	DBT	23	**PI:** Dr. Sanjay Gupta **Co PI:** Dr Reema Gabrani
16	Upgradation of comparative and functional genomics lab.	2008-2009	AICTE	7	**PI:** Dr Sanjeev Sharma **Co-PI:** Dr. Sanjay Gupta
17	Nanoparticle based Drug delivery system of some antiepileptic drugs for brain drug delivery through nasal route.	2011-2014	DBT	25	P**I:** Dr. Shweta Dang **Co PI:** Ms. Manisha Singh,

					Dr. Javed Ali (Jamia Hamdard, New Delhi)
18	Development and evaluation of green tea catechins based intravaginal nanoemulsion gel for the treatment of urinary tract infections.	2013-2016	DBT	23.35	**PI:** Dr. Shweta Dang **Co PI:** Dr. Reema Gabrani, Dr. Javed Ali (Jamia Hamdard, New Delhi)
19	Cardio-protective properties of Curcumin: Molecular Interaction of Cardiac Transcription Factors.	2009-2012	DST	19.9	**PI:** Dr. Vibha Rani
20	Studies on the Phylogenomics and Population Genomics of Indian Drosophila.	2014-2017	DST	34.01	**PI:** Dr. Sujata Mohanty
21	Scientific documentation (digitization) of selected Indian medicinal plants (*Salacia reticulata* and *Andrographis paniculata*) used for anti-diabetic activity	2008-2011	Ayush	7	**PI:** Dr. Rachana
22	Inferring the Origin, Population Structure and Demographic History of *Drosophila malerkotliana* with Population Genomic Approach.	2007-2010	DST	7.44	**PI:** Dr. Sujata Mohanty
STUDENT'S EXTRAMURAL PROJECTS					
1	Development PLGA nanoparticles loaded with donepezil and memantine for brain drug delivery through nasal route in Alzheimer's disease.	2017-2020	BioCARe-DBT	26	**PI:** Ms. Atinderpal Kaur **Mentor:** Dr. Shweta Dang
2	Studies on production of therapeuticaly important saponins using *in-vitro* culture of *Bacopa monnieri.*	2014-2018	DST	19.61	**PI:** Ms. Pragya Bhardwaj **Mentor:** Dr. Ashwani Mathur

3	Rational Structure-based development of potent inhibitors targeting mycobacetrial cysteine biosynthetic pathway: in silico and experimental drug design against *M. tuberculosis* CysE.	2015-2018	DST	15.95	**PI:** Mrs. Sunita Gupta **Mentor:** Dr. Vibha Gupta
4	Bioprospection of microorganisms from selected niche habitats (soil/rock) for antimicrobial products.	2014-2019	ICMR	21.67	**PI:** Mrs. Nidhi Srivastava **Mentor:** Dr. Indira P Sarethy
5	Analysis of Chikungunya virus nsP3 protein micro/macro interactors.	2018-2021	DST-(WOS- A)	20	**PI:** Ms. Ipsita Nandi **Mentor:** Dr. Sanjay Gupta
6	Identification of peptide/protein binders of Chikungunya Virus.	2015-2019	DST-Inspire	21.9	**PI:** Ms. Garima Agarwal **Mentor:** Dr. Sanjay Gupta
7	Structure, function and inhibition of isocitrate lyases of *Mycobacterium tuberculosis*.	2016-2021	DST - Inspire	21.9	**PI:** Ms. Monika **Mentor:** Dr. Vibha Gupta
8	Fabrication of nanotechnology based point-of-care device for thyroid disease diagnosis.	2016-2021	DST - Inspire	21.9	**PI:** Rahul **Mentor:** Sudha Srivastava
9	Nanotechnology based vaccine development against Hepatitis E virus.	2015-2020	DST - Inspire	21.9	**PI:** Dibya Rani **Mentor:** Sudha Srivastava
10	Differential expression pattern of miRNAs in rice root during Cr(VI) stress.	2015-2018	DST	33	**Young Scientist:** Dr. Sonali Dubey **Mentor:** Dr. Vibha Rani

DEPARTMENT OF PHYSICS & MATERIALS SCIENCE & ENGINEERING

RESEARCH PROJECTS

Department of Physics and Materials Science and Engineering lays strong emphasis on the research in both the field of Physics: experimental and theoretical. Department used to receive research grants from various reputed government agencies namely; Defence Research and Development Organisation (DRDO), Department of Science & Technology (DST), All India Council for Technical Education (AICTE) and Science and Engineering Research Board (SERB). The approximate grant received currently is about Rs. 160 lakhs.

ONGOING PROJECTS

Sr. No.	Title of the Project	Duration	Funding Agency	Sanctioned Fund (Lakh)	Investigator/s
1	Entangled and other nonclassical state and their applications in the field of quantum computation and communication	2016-2019	DST	39.50	**PI:** Prof. Anirban Pathak
2	Design and cryptanalysis of protocols of secure quantum communication	2016-2019	DRDO	34.07	**PI:** Prof. Anirban Pathak
3	Structurally manipulated stannate nanostructures for magnetic and optoelectronic applications	2016-2019	DST	11.00	**PI:** Dr. Sandeep Chhoker
4	Experimental investigations on surface plasmon resonance based fiber optic refractive index sensors	2017-2020	DRDO	27.71	**PI:** Dr. Navneet Kr. Sharma

5	Investigation of Novel Heusler Alloy Thin films for Energy and Spintronic Applications	2018-2021	SERB	47.30	**PI:** Dr. Himanshu Pandey
COMPLETED PROJECTS					
1	Theoretical study of single photon sources used in quantum computing	2006-2009	DST	2.16	**PI:** Prof. Anirban Pathak
2	Modernisation of Physics and Material Science & Engineering Lab	2008-2011	AICTE (MODROB)	7.00	**PI:** Prof K.C.Mathur **Co- PI:** Prof.R. K. Dwivedi
3	Investigations on Multifunctional Properties in substituted Multiferroics	2010-2012	DRDO	16.12	**PI:** Prof. R. K. Dwivedi
4	Synthesis and study of structural, dielectric, magnetic and magnetoelectric properties of multiferroic materials	2010-2014	DST	11.58	**PI:** Dr. Manoj Kumar
5	Bistability due to intr-amolecular and inter-molecular charge transfer in different environments	2010-2014	DST	9.36	**PI:** Dr. Papia Chowdhury
6	Investigations on Multifunctional Properties of alkaline earth and rare earth doped BFe1-xTixO3 solid solutions	2011-2014	DST	51.31	**PI:** Prof. R. K. Dwivedi
7	Theoretical studies of higher order non-classicality and its applications	2011-2014	DST	12.75	**PI:** Prof. Anirban Pathak

STUDENT'S EXTRAMURAL PROJECTS

Title of the Project	Duration	Funding Agency	Sanctioned Fund (Lakh)	Investigator/s
Study of isovalent and aliovalent ions substitution in BiFeO3 multiferroic ceramics	2011-2016	DST	12.02	**PI:** Dr. Prakash Chandra Sati **Mentor:** Dr. Dr. Manoj Kumar
Synthesis and Characterization of Metal Oxide Nanostructures	2012-2017	DST	9.77	**PI:** Dr. Anshuman Sahai **Mentor:** Dr. Dr. Navendu Goswami

DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

RESEARCH PROJECT

HSS Department is growing in its research efforts in the thrust areas of the department through sponsored research grants.

ONGOING PROJECT					
Sr. No.	**Title of the Project**	**Duration**	**Funding Agency**	**Sanctioned Fund (Lakh)**	**Investigator/s**
1	A Study on Financial Inclusion Initiatives and their Impact on Performance of Commercial Banks in Ghaziabad District	2018-2020	Indian Council of Social Science Research (ICSSR)	5.5	**PI:** Dr. Mukta Mani

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

RESEARCH PROJECTS

ONGOING PROJECT					
Sr. No.	**Title of the Project**	**Duration**	**Funding Agency**	**Sanctioned Fund (Lakh)**	**Investigator/s**
1	Design and Development of a Cognitive System for Leukocytes Identification in Hematoxylin and Eosin (H & E) Stained Rat Skin Images	2017-2020	SERB-DST, India	Allotted: Rs. 28,18,178 Recd.: 15,04,632	**PI :** Dr. Mukesh Saraswat **Co-PI:** Dr. Harish Sharma Mr. Himanshu Mittal Mr. Raju Pal
COMPLETED PROJECTS					
1	Psyche Monitoring and regulating System for e-counseling – Multimodal affect recognizer	2009-2012	AICTE	Rs. 12,65,000	**PI :** Dr. Krishna Asawa