DEPARTMENT OF BIO & NANO TECHNOLOGY

Details of the Department

(I) Name : Department of Bio & Nano Technology
(II) Year of Establishment : 1998
(III) (a) Has the Vision, Mission, etc. of your Department been defined? : Yes/No
(b) If answer to (i) above is 'Yes', please state the following:
(1) Vision Statement: As per University
(2) Mission Statement: As per university
(3) Objectives of the Department

- Expose the students in the areas of Microbial, Plant and Animal Biotechnology, Molecular Biology, Genetic Engineering, and Nano Science.
- Expose the students to wide spectrum of Biochemistry, Microbiology, Plant Cell, Tissue and Organ Culture technical skills to infuse versatility and brighten their initiative to develop new range of products.
- Train Students for ability to work independently with technical skill, professional maturity and having adaptability to thrive under diverse pressures, for the innovative undertaking and to liaison with various industries.
- Conduct basic and applied research in the areas of Plant Cell Tissue and Organ culture, Molecular Biology, Biochemistry, Microbial Biotechnology and Nano Science and technology.

(IV) Course Offered in the Department:

Course	**Sanctioned intake**	**Present Strength (Total)**
Ph. D	variable	63=38(Biotechnology)+17 (Nano Technology)+8 (Microbiology)
P. G.	20+4 (DBT Sponsored Biotechnology) 20+2+1+1(Self Financing Biotechnology) 39(Five Year M.Sc. biotechnology) 30+2+1+1(Microbiology) 20 (M.Tech Nano Science)	89 31+34=65 8+5=13
U. G.	35+2+1+1(each year)	43 (Ist Year) +32 (IInd Year)+32 Third Year)=107
Any other		

(V) Faculty Details
(Attach a list of the Faculty along with their qualification and their experience)

Professor		Readers		Lecturers	
Sanctioned	Filled	Sanctioned	Filled	Sanctioned	Filled
01	01	02	01	12	07

Name	Designation	Specialization
Professor Ashok Chaudhury	Professor	Plant Molecular Biology
Professor Neeraj Dilbaghi	Professor	Nano Science & Technology, Molecular Microbiology
Professor Namita Singh	Professor	Microbial Biotechnology, Bio active compound, enzymology, Bioenergy,
Professor Vinod Chhokar	Professor	Biochemistry, Enzymology, Plant Biotechnology, Molecular Biology
Dr. Sandeep Kumar	Associate Professor	Nano Science & Technology
Dr. Rajesh Thakur	Associate Professor	Plant Tissue culture, Nano Technology
Dr. Anil Kumar	Assistant Professor	Animal Biotechnology
Dr. Santosh Kumari	Assistant Professor	Genetics
Dr. Sapna Grewal	Assistant Professor	Plant Biotechnology

(VI) Non-Teaching Position:

Position	Sanctioned	In Position
Tech. Assistant	01	Nil
Lab Technician	02	02
Steno- Typist	02	01
Clerk	02	01
Peon	04	02
Lab Attendant-cum-Cleaner	08	

(VII) a) Students Details:

Ist Year		Final Year	
Sanctioned Intake	Filled	Sanctioned Intake	Filled

Name of the course	Ist Year		Second/Final Year	
	Sanctioned Intake	Filled	Sanctioned Intake	Filled
M.Sc. (Biotechnology)	20+4 20+2+1+1 39	8+4 21 22	24 24 -	13 22 -
M.Tech. (Nano Science and Technology	20	-	20	5
M.Sc. Microbiology	30+2+1+1	34	34	20
B.Sc. M.Sc. Biotechnology	43	43	39+39	32+32

b) Foreign Students Admitted: 01 (Ph.D.)

(VIII) Research Scholars :

Name of the Teacher	Intake Capacity		Total Number of Ph. D. Students	Registered during the Year	Thesis completed during the Year
Prof. Ashok Chaudhary	8		6	-	3
Prpf. Neeraj Dilbaghi	8		8	-	-
Prof. Namita Singh	8		6+1) (co- supervisor)	01	03
Prof. Vinod Chhokar	8		5	3	1
Dr. Anil Kumar	4		-	-	-
Dr. Sandeep Kumar	4		-	1	1
Dr. Santosh Kumari	4		4	1	-
Dr. Rajesh Rhakur	4		4	2	1
Dr. Sapna Grewal	4		3	2	Nil
Total	52		19	9	6

(IX)Sponsored Research Projects :

Title of the Project	**Funding Agency & Amount**	**Name of the Investigator (s)**	**Project in process**	**Awarded during the current year**	**Completed during the current year**
Radiological assessment of exposure to terrestrial and aquatic non-human biota in the vicinity of proposed plant site in Haryana.	BARC-BRNS	Dr Neeraj Dilbaghi and Dr. Devender Kumar	In Progress	-	-
Development of microbial technology for accelerated multi-component municipal organic waste recycling (Indo-Ukrainian Project)	DST Indo Ukraine 39.10 Lakhs	Dr. Namita Singh	In Progress	20/06/2016	20/06/2019
Phytase enzyme production, purification & characterization of indigenous microbe for food & feed application	HSCST 8 Lakhs	Dr. Namita Singh	In Progress	2016-17	2019-20
"Determination of Natural Uranium in groundwater in Hisar, Bhiwani and Rewari districts of Haryana".	BRNS 22 Lakhs	Prof. Neeraj Dilbaghi	In Progress	2016	2016-19
Synthesis of pesticide-loaded nanoformulation" by International Industry Adama Agricultural Solutions Ltd. Israel	ADMA Agan Ltd Isreal Intrnational Colloboration 24.89 lakhs	Prof. Neeraj Dilbaghi Dr. Sandeep Kumar		2017	2019

2017-2019 (25 Lakhs/38000$)					
Studies on Development of Biosensor for Detection of Explosives (Hydrazine and TNT)" by DRDO, Govt of India. 2017-2020	LSRB-DRDO 38.43 lakhs	Prof. Neeraj Dilbaghi	In Progress	2017	2020
Development of Novel Fluorescent Platforms for the Detection of Heavy Metals in Water" by DBT, Govt of India 2017-2020.	DBT-GOI 66.703 lakhs	Dr. Sandeep (PI) and Prof. Neeraj Dilbaghi (Co-PI)	In Progress	2017	2020
Green Synthesis of Nitrogen Nanofertilizer and its characterization for foliar application in wheat (*Triticum aestivum)*	UGC Start Up Grants 10 Lacs	Dr. Sapna Grewal	In progress	2017	2017-19
'To Develop a Process for bioremediation Chromium from Industrial Effluents using Microbial Consortium'	HSCST 8,33,800	Dr. Namita Singh and Dr. Raman	In Progress	2018	2018-21
Molecular characterization of major associated with milk quality in Egyptian and Indian buffaloes	India- Egypt Joint Project DST DST, Govt of India 6.60 Lacs.	Dr. Vinod Chhokar PI Anil Kumar Co-PI	In Progress	2016	2016-18
Development of low aliphatic glucosinolate *Brassica juncea* using targeted editing of pathway gene (s) by CRISPR-Cas9 system	DBT, Govt of India	Dr. Manju Yadav and Dr.Vinod Chhokar	In Progress	2017	2020
Metal Organic Frameworks-based Platform for Pesticide Removal in Haryana and Punjab Region	HSCST 8.00 Lakh	Dr. Sandeep Kumar and Dr Neeraj Dilbaghi	In Progress	2018	2020

(X) Publications of the Faculty (In total):

Name of The Teacher	Books	Research Papers		Research Papers		Articles
		International	National	Referred	Non-Referred	
Prof. Ashok Chaudhary	1	8		8		
Prpf. Neeraj Dilbaghi	1	24	-	24	-	-
Prof. Namita Singh	1	4	2	6	-	-
Prof. Vinod Chhokar	1	7	-	7	-	-
Dr. Anil Kumar	1	6	-	6	-	-
Dr. Sandeep Kumar	1	36		36		
Dr. Santosh Kumari	1	2	-	2	-	-
Dr. Rajesh Thakur	1	5	-	5	-	-
Dr. Sapna Grewal	1	4	-	4	-	-
Dr. K.D. Rawat	-	1	-	1	-	-
Dr. Rakesh Yadav	-	2	-	2	-	-
Total	1	99	2	99	-	-

(XI) Faculty wise details of Publications during Jan 2018 to June 2019:

(a) Books

Author (s)	Title	Year of Publication	Type of Books
Prof. Ashok Chaudhary	Proceedings of the International Conference on Bio and Nano-Technologies for Sustainable Agriculture, Food, Health, Energy and Industry	2018	Research Report 2: Published online: 2:e1-e244. doi:10.9777/rr.2018.1001-10322
Prpf. Neeraj Dilbaghi	Proceedings of the International Conference on Bio and Nano-Technologies for Sustainable Agriculture, Food, Health, Energy and Industry	2018	Research Report 2: Published online: 2:e1-e244. doi:10.9777/rr.2018.1001-10322
Prof. Namita Singh	Proceedings of the International Conference on Bio and Nano-Technologies for Sustainable Agriculture, Food, Health, Energy and Industry	2018	Research Report 2: Published online: 2:e1-e244. doi:10.9777/rr.2018.1001-10322
Prof. Vinod Chhokar	Proceedings of the International Conference on Bio and Nano-Technologies for Sustainable Agriculture, Food, Health, Energy and Industry	2018	Research Report 2: Published online: 2:e1-e244. doi:10.9777/rr.2018.1001-10322
Dr. Anil Kumar	Proceedings of the International Conference on Bio and Nano-Technologies for Sustainable Agriculture, Food, Health, Energy and Industry	2018	Research Report 2: Published online: 2:e1-e244. doi:10.9777/rr.2018.1001-10322
Dr. Sandeep Kumar	Proceedings of the International Conference on Bio and Nano-Technologies for Sustainable Agriculture, Food, Health, Energy and Industry	2018	Research Report 2: Published online: 2:e1-e244. doi:10.9777/rr.2018.1001-10322
Dr. Santosh Kumari	Proceedings of the International Conference on Bio and Nano-Technologies for Sustainable Agriculture, Food, Health, Energy and Industry	2018	Research Report 2: Published online: 2:e1-e244. doi:10.9777/rr.2018.1001-10322

Dr. Rajesh Thakur	Proceedings of the International Conference on Bio and Nano-Technologies for Sustainable Agriculture, Food, Health, Energy and Industry	2018	Research Report 2: Published online: 2:e1-e244. doi:10.9777/rr.2018.1001-10322
Dr. Sapna Grewal	Proceedings of the International Conference on Bio and Nano-Technologies for Sustainable Agriculture, Food, Health, Energy and Industry	2018	Research Report 2: Published online: 2:e1-e244. doi:10.9777/rr.2018.1001-10322
Prof. K. K. Kapoor	Sequeira, M.G., **Kapoor, K.K.** ,Tauro, P., and K.S. Yadav *An Introduction to Microbiology, Third Edition*	2019, New Age International Pvt. Ltd., New Delhi, pp. 960	Text Book
Dr.Anita Rani gill	Proceedings of the International Conference on Bio and Nano-Technologies for Sustainable Agriculture, Food, Health, Energy and Industry	2018	Research Report 2: Published online: 2:e1-e244. doi:10.9777/rr.2018.1001-10322
Dr. Rakesh Yadav	Proceedings of the International Conference on Bio and Nano-Technologies for Sustainable Agriculture, Food, Health, Energy and Industry	2018	Research Report 2: Published online: 2:e1-e244. doi:10.9777/rr.2018.1001-10322

(b) Papers

Prof . Ashok Chaudhury

Pooja Bangar, Ashok Chaudhury, Suraj Umdale, Ratna Kumari, Bhavana Tiwari, Sanjay Kumar, Ambika B. Gaikwad and K. V. Bhat. 2018 Detection and characterization of polymorphic simple sequence repeats markers for the analysis of genetic diversity in Indian mungbean [Vigna radiata (L.) Wilczek] 10.5958/0975-6906.2018.00013.5 Impact Factor 0.409. Indian Journal Genetics and Plant Breeding 78(1) 111-117 Springer

Uma Gaur, Madhu Sudan Tantia, Bina Mishra, S T Bharani Kumar, Ramesh Kumar Vijh and Ashok Chaudhury 2018 Mitochondrial D-loop analysis for uncovering the population structure and genetic diversity among the indigenous duck (Anas platyrhynchos) populations of India. Mitochondrial Part A: DNA Mapping, Sequencing and Analysis. 29(2) 212-219 Springer

Ashok Chaudhury, Tanvi Kaila, Kishor Gaikwad. (2019). Transcriptome Sequencing of Seeds Collected at Different Developmental Stages of Commercially Important Indian Varieties of Cluster Bean (Cyamopsis tetragonoloba L.) for Elucidation of Galactomannan Biosynthesis Pathway Genes. Scientific Reports 9 11539 Springer Nature

Ashok Chaudhury, Anita Devi Dalal, Nayan Tara Sheoran. 2019 Isolation,Cloning and Expression of CCA1 Gene in Transgenic Progeny Plants of Japonica Rice Exhibiting Altered Morphological Traits. PLOS ONE 14(8)e0220140 PLOS

Tanvi Kaila, Swati Saxena, G. Ramakrishna, Anshika Tyagi, Kishor U Tribhuvan, Sandhya, Ashok Chaudhury, Nagendra Kumar Singh, Kishor Gaikwad 2019 Comparative RNA editing profile of mitochondrial transcripts in cytoplasmic male sterile and fertile pigeonpea reveal significant changes at the protein level. Molecular Biology Reports 462067-2084 Springer

Pooja Bangar, Ashok Chaudhury, Bhavana Tiwari, Sanjay Kumar, Ratna Kumari, Kangila Venkataramana Bhat 2019 Morpho-physiological and biochemical response of mungbean [Vigna radiata (L.) 2 Wilczek] varieties at different developmental stages under drought stress. Turkish Journal Biology 48 53-69 Scientific & Technological Council of Turkey-Academic Journals

Kavita Ahuja, Mirza Adil Beg, Ruby Sharma, Ajay Saxena, Nilofer Naqvi, Niti Puri, Ashok Chaudhury, Robert Duncan, Poonam Salotra, Hira Nakhasi, Angamuthu Selvapandiyan 2018 A novel signal sequence negative multimeric glycosomal protein required for cell cycle progression of Leishmania donovani parasites. Biochemia et Biophysica Acta (BBA)-Molecular Cell Research. 1865(8)1148-1159 Elsevier

Pawan Kaur, Rajesh Thakur, Joginder Singh Duhan, Ashok Chaudhury 2018 Management of wilt disease of chickpea in vivo by silver nanoparticles; biosynthesized by rhizospheric microflora of chickpea (Cicer arietinum) Journal of Chemical Technology & Biotechnology 93(11) 3233-3243 Elsevier

Pawan Kaur, Rajesh Thakur, Himanshu Malwal, Anju Manuja, Ashok Chaudhury 2018 Biosynthesis of biocompatible and recyclable silver/iron and gold/iron coreshell nanoparticles for water purification technology. Biocatalysis and Agricultural Biotechnology14 189–197 Elsevier

Annu Sindhu, S K Tehlan Ashok Chaudhury 2018 Effect of morphological trait variance on plant yield in different Trigonella foenum-graecum L. VarietiesAustralian Journal of Crop Science. 12(1)1-10Southern Cross Publishing Australia

Prof. Neeraj Dilbaghi:

Nano-based smart pesticide formulations: Emerging opportunities for agriculture (2019) Sandeep Kumar, Monika Nehra, Neeraj Dilbaghi, Giovanna Marrazza, Ashraf Aly Hassan, and Ki-Hyun Kim, Journal of Controlled Release (294), 131-153. https://doi.org/10.1016/j.jconrel.2018.12.012 (IF:7.901)

Nanodiamonds: Emerging face of future nanotechnology (2019) Sandeep Kumar, Monika Nehra, Deepak Kedia, Neeraj Dilbaghi, K. Tankeshwar, and Ki-Hyun Kim, Carbon (143), 678-699. https://doi.org/10.1016/j.carbon.2018.11.060 (IF:7.466)

Antidiabetic activity enhancement in streptozotocin-nicotinamide rats through combinational polymeric nanoformulation (2019) Ruma Rani, Shakti Dahiya, Dinesh Dhingra, Neeraj Dilbaghi, Ajeet Kaushik, K H Kim, Sandeep Kumar, International Journal of Nanomedicine (14) 4383-4395. https://doi.org/10.2147/IJN.S205319 (IF.: 5.471).

Novel electrochemical sensor for mononitrotoluenes using silver oxide quantum dots (2019), Gaurav Bhanjana, G R Chaudhary, Neeraj Dilbaghi, Moondeep Chauhan, Ki Hyun Kim and Sandeep Kumar, Electrochimica Acta (293), 283-289. https://doi.org/10.1016/j.electacta.2018.10.042 (IF: 5.383).

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Potential use of ZnO@activated carbon nanocomposites for the adsorptive removal of Cd2+ ions in aqueous solutions (2019) Sarita Alhan, Monika Nehra, Neeraj Dilbaghi, Nitin Kumar Singhal, Ki-Hyun Kim, and Sandeep Kumar, Environmental Research (173), 411-418. https://doi.org/10.1016/j.envres.2019.03.061 (IF: 5.026)

Metal organic frameworks MIL-100 (Fe) as an efficient adsorptive material for phosphate management (2019) Monika Nehra, Neeraj Dilbaghi, Nitin Kumar Singhal, Ashraf Aly Hassan, Ki-Hyun Kim, and Sandeep Kumar, Environmental Research (169), 229-236. https://doi.org/10.1016/j.envres.2018.11.013 (IF: 5.026)

Manganese Oxide Nanochips as a Novel Electrocatalyst for Direct Redox Sensing of Hexavalent Chromium (2019) Gaurav Bhanjana, Pooja Rana, Ganga Ram Chaudhary, Neeraj Dilbaghi, Ki-Hyun Kim, Sandeep Kumar, Scientific Reports (9) 8050. https://doi.org/10.1038/s41598-019-44525-4 (IF: 4.011)

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Up to date review on the synthesis and thermophysical properties of hybrid nanofluids (2018) Munish Gupta, Vinay Singh, Satish Kumar, Sandeep Kumar, Neeraj Dilbaghi, and Zafar Said, Journal of Cleaner Production (190), 169-192. https://doi.org/10.1016/j.jclepro.2018.04.146 (IF: 6.395)

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Modification of cellulose foam paper for use as a high-quality biocide disinfectant filter for drinking water (2018) Solmaz Heydarifard, Kapila Taneja, Gaurav Bhanjana, Neeraj Dilbaghi, Mousa M Nazhad, Ki-Hyun Kim, and Sandeep Kumar, Carbohydrate Polymers (181), 1086-92. https://doi.org/10.1016/j.carbpol.2017.11.038 (IF:6.044)

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DNA interaction, anti-proliferative effect of copper oxide nanocolloids prepared from metallosurfactant based microemulsions acting as precursor, template and reducing agent (2018), Gurpreet Kaur, Varsha Dogra, Rajeev Kumar, Sandeep Kumar, Gaurav Bhanjana, Neeraj Dilbaghi, and Nitin Kumar Singhal, International Journal of Pharmaceutics (535), 95-105. https://doi.org/10.1016/j.ijpharm.2017.10.059 (IF: 3.649)

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Potentiation of nootropic activity of EGCG loaded nanosuspension by piperine in Swiss male albino mice (2018) Shakti Dahiya, Ruma Rani, Dinesh Dhingra, Sandeep Kumar, and Neeraj Dilbaghi, Future Journal of Pharmaceutical Sciences (4), 296-302. https://doi.org/10.1016/j.fjps.2018.10.005.

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Prof. Namita Singh

Ruchi Urana, Avni Dahiya, Praveen Sharma, **Namita Singh** (2019) Effects of Plant Growth Promoting Rhizobacteria on Phytoremediation of Phenanthrene Contaminated Sodic Soil. Polycyclic Aromatic Compounds.

Namita Singh, Anita Lathwal, Manju Bala Bishnoi, Rajneesh Jaryal, Avni Dahiya, Oleksandr Tashyrev, Vira Hovorukha (2019) Overview of the Process of Enzymatic Transformation of Biomass. Intechopen. 1-30

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Prof. Vinod Chhokar

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Dr. Anil Kumar

AK Jaya Devi, Manju Yadav, Anil Kumar(2018) Synthesis, characterization, biological activity and QSAR studies of transition metal complexes derived from piperonylamine schiff bases. Chemical Papers

RK PinkiYadav, Kashmiri Lal, Lokesh Kumar, Ashwani Kumar, Anil Kumar, Avijit (2018)Synthesis, crystal structure and antimicrobial potential of some fluorinated chalcone-1,2,3-triazole conjugates. European Journal of Medicinal Chemistry 155, 263-74

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AKVC Pragati Choudhri, Muniya Rani, Rajender S. Sangwan, Ravinder Kumar (2018) De novo sequencing, assembly and characterisation of Aloe vera transcriptome and analysis of expression profiles of genes related to saponin and anthraquinone metabolism. BMC Genomics 19, 427

AK Satbir Mor, Suchita Sindhu, Savita Nagoria, Mohini Khatri, Prabha Garg(2019) Synthesis, Biological Evaluation, and Molecular Docking Studies of Some N-thiazolyl Hydrazones and Indenopyrazolones. Journal of Heterocyclic Chemistry 56 (5), 1622-33

Dr. Sandeep Kumar

Gaurav Bhanjana, G R Chaudhary, Neeraj Dilbaghi, Moondeep Chauhan, Ki Hyun Kim and Sandeep Kumar, Electrochimica Acta (293), 283-289.
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Dr. Santosh Kumari

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Dr. Sapna Grewal

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Sonia Goel, Kalpana Singh, Sapna Grewal, Neeta Dwivedi.2019 Use of biotechnology & nanotechnology for improving the art of bread making-By understanding the science behind it The Indian Journalof Agricultural Sciences (NAAS 6.6) (Impact factor of 0.156) Vol 84:39-41

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Dr. K. D. Rawat

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Kumar N, Khandelwal N, Kumar R, Chander Y, Rawat KD, Chaubey KK, Sharma S et al.2019Inhibitor of Sarco/Endoplasmic Reticulum Calcium-ATPase Impairs Multiple Steps of Paramyxovirus ReplicationFrontiers in microbiology 10: 1-12 1-12 Frontiers

(XII) Participation in Seminars/Conferences/Workshops, etc. during 2018:

(a) International Conferences:

Name of the Faculty	Title of the paper presented	Theme of the Conference/Seminar	Name of the Host organization	Place	Dates
Prof. Ashok Chaudhary					
Prof. Neeraj Dilbaghi					
	Fabrication And Evaluation Of Nanomaterial Based Sensors For Detection Of Chemical Explosives Invited Talk	63rd DAE Solid State Physics Symposium (DAE-SSPS 2018)	GJUST	Hisar	18-22 Dec 2018

Prof. Namita Singh

- Anubha Sharma, Parul, Tapti Bhanja Dey and Namita Singh.A Comparative Study of Hydrolytic Enzymes Production from Fungal Cultures through Solid Substrate Fermentation of Wheat Bran and Their Applications.ICBN-2018. February 21-23, 2018 Hisar, India.pp.40
- Anubha Sharma, Neelu, Sonia Dabas, and Namita Singh.Screening and Optimization of Phytase Enzyme Production Using Indigenous Microbes Isolated from Different Environmental Conditions. International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India (ICBN-2018). February 21-23, 2018 Hisar, India.pp.40
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- Manju Bala Bishnoi, Sandeep Kumar, Devanshu Gupta, Kanupriya, Namita Singh. Statistically Optimization of Physiochemical Parameters, Extraction Method and Partial Purification of Natural Colorant from Cyanobacterial Isolate. International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India.pp.60

- Anita Devi, Neelu, Anubha Sharma, Meenakshi, Namita Singh. The Study designed to track an efficient cellulolytic fungal isolate. International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-

- Meenakshi Pahwa, Pooja Yadav, Komal Shishodia, Priyanka, Rajneeshjaryal,Sunil Kumar, Krishan K. Kapoor, Namita Singh. Molelecular Identification of Plant Growth Promoting *Bacillus* spp. Isolated From Arid Zone Soils. International Conference on Bio and Nano Technologies forSustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India.pp.99
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- Punita Sharma, Jyoti Rani, Seena Kumari, ,Charu Chauhan, Vartika Srivastava, Sanjay Tavetiya, Tanwee Das De, Deepak Singla, Kailash Chand Pandey, Neena Valecha, Namita Singh, Rajnikant Dixit. An Early Infection of *Plasmodium vivax* Suppresses the Mosquito Gut Microbiome in *Anopheles Stephensi*: A Smart of *Plasmodium* Survival and Transmission. International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India.pp.106
- Ruchi Urana, Namita Singh and Praveen Sharma. Effect of Polyaromatic Hydrocarbons on Efficiency of Photosystem of *Brassica nigra.* International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India.pp.177

- Rajneesh Jaryal, Namita Singh, Anita Devi, Manju Bala Bishnoi, Meenakshi Pahwa and Sonia Dabas.Antimicrobial Metabolites from Bacterial Species: A Review. International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India.PP.151
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- Suryakant Panchal, Sheetal Mehla, Manju Kumari, Rajneesh Jaryal,Avni, Namita Singh.A Metagenomic Approach to Identify PAH Degrading Microbial Consortium.

Prof. Vinod Chhokar

- Rohit, Pradeep Dhanwal, Abhishek Kumar, Hemlata, Shruti Dudeja, Sweeta, Vinod Chhokar, and Anil Kumar Isolation and Screening of Monocrotophos Degrading Bacterial Isolates from Agriculture Field Soil International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India (ICBN-2018). February 21-23, 2018 Hisar, India.pp.50
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- Muniya Rani, Pragati Choudhri and Vinod Chhokar. Isolation of Squalene Epoxidase Gene Involved in Saponin Biosynthesis in *Aloe vera.* International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India.pp.107

- Chanchal, Sudhanshu Dwivedi, Monika, and Vinod Chhokar. *De novo* Transcriptome Analysis of *Asparagus racemosus* and Expression Analysis of Genes Related to Flavonoid Synthesis. International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India.pp.108
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- Monika, Chanchal and Vinod Chhokar. Isolation and Identification of Endophytic Fungi from Roots of *Asparagus racemosus.* International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India.pp.162
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- ManjuYadav and Vinod Chhokar Study of Antimicrobial and Anticancer Activity of Silver and Gold Nanoparticles from the Brassicaceae Family. International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India.pp.161

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  International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India.pp.169
- Sunena Dhania and Dr. Rajesh Thakur Isolation of PHB-Producing Bacterium from Activated
- Sludge and its Characterization. International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India.pp.37
- Rohit, Pradeep Dhanwal, Abhishek Kumar, Hemlata, Shruti Dudeja, Sweeta, Vinod Chhokar and Anil Kumar.Isolation and Screening of Monocrotophos Degrading Bacterial Isolates from Agriculture Field Soil. International Conference on Bio and

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- Mahima Rastogi, Anisha, Rohit Chauhan, Anil Kumar.Optimization and Characterization of Diclorvos Degrading Bacteria Isolated from Agriculture Soil. International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry (ICBN-2018) February 21-23, 2018 Hisar, India.pp.51

Dr. Santosh Kumari

- GIAN course on "**Methods and techniques in integrated Structural Biology: Toward structure based drug development**" from 15th to 21st January 2018 at IIT Roorkee.
- GIAN course on “Genome Manipulations, Editing and Interference by VIGS, CRISPR and RNAi” organised by Dept of Bio & Nano Technology ,GJUS&T ,Hisar from March 5 - 14, 2019

Dr. Sapna Grewal

Dr. Sapna Grewal	Synthesis of Zinc Oxide nanoparticles and its Antibacterial Activity	International Conference on Bio & Nano Technologies for Sustainable Agriculture, Food, Health, Energy & Industry	GJUS&T	Hisar	Feb 21-23, 2018
Dr. Sapna Grewal	Antibacterial activity against bacterial	Nanotechnology in Agriculture	TERI, Gurugram.	Gurugram	Dec 13-14, 2018

	blight disease of cotton by synthesized zinc oxide nanoparticles				
Dr. Krishan Dutta Rawat	Therapeutic effect of heat killed Mw vaccine during MTB Infection (H37Rv) in Guinea pig, the growth kinetic and genes expression analysis	Technologies for Sustainable Agriculture, Food, Health, Energy and Industry	Guru Jambheshwar University of Science & Technology	Hisar	Feb 21 -23 , 2018
Dr. Rakesh Yadav					
Dr. Rakesh Yadav	-	Two week GIAN workshop on "Application of Thermodynamic Prediction for Development of Microbial Biotechnological Approaches"	Guru Jambheshwar University of Science and Technology, Hisar-125001	HISAR	12-21 NOVEMBER, 2018
Dr. Rakesh Yadav	-	Two week GIAN workshop on "Genome Manipulations, Editing and Interference by VIGS, RNAi and CRISPR	Guru Jambheshwar University of Science and Technology, Hisar-125001	HISAR	5-14 MARCH, 2019

(b) National Conferences :

Name of the Faculty	Title of the paper presented	Theme of the Conference/Seminar	Name of the Hose organisation	Place	Dates
Prof. Ashok Chaudhary					
Prof. Neeraj Dilbaghi	Nano Science in Food Processing- Applications and Challenges in Food Quality Control, Food Packaging	Third National Conference on "Contemporary Food Processing and Preservation Technologies"	Shoolini University	Solan (HP)	12-13 April, 2018

	and Food Safety Plenary Speaker				
	Invited Talk Nanotechnology & Environmental Sustainability	Inter disciplinarily in the Environmental Sciences and Frontiers: Challenges and Frontiers	Dept of Biotechnology, UIET. KUK	Kurukshetra	19th April, 2019
	Invited Talk *Graphene and Quantum Dot Based Sensors for Environmental Applications*	National Level Workshop on graphene based device Fabrication and Characterization	Dept of ECE, UIET. KUK	Kurukshetra	26-27 Feb 2019
	Invited Talk *Nanodevices for Environmental Sustainability Key Note Speaker*	National Conference on Biodiversity & Environmental Sustainability in Modern Era	CRM Jat College Hisar	Hisar	16 Feb 2019
Prof. Namita Singh	Expert Talk as coordinator of GIAN Program	Two week GIAN workshop on "Application of Thermodynamic Prediction for Development of Microbial Biotechnological Approaches"	GJUS&T, Hisar	Hisar	12-21 NOVEMBER, 2018
	International Symposium on Host-Pathogen Interactions The theme for **AMI-2018** was "Microorganisms for Sustainable Development"		School of Life Sciences, **University of Hyderabad** in association with Department of Microbiology, Osmania **University**	Hyderabad	09-12 DEC 2018
Prof. Namita Singh	ICBN 2018	Decoding the tissue specific molecular complexity of mosquito-parasite interaction: An RNAseq analysis of *Plasmodium*	Department of Bio and Nano technology GJUS&T, Hisar Haryana	Hisar	21-23 FEB , 2018

		vivax infected mosquito *Anopheles stephensi*			
Prof. Vinod Chhokar					

Dr. Anil Kumar

Participated in 63rd DAE solid state physics symposium held at Guru Jambheshwar University of science and Technology, Hisar (Haryana) during 18-22 December 2018

(c) Workshops and Refresher Courses:

Name of the Teacher	Title of Refresher Courses	Host organization	Deptt.	University	Place	Dates
Prof. Ashok Chaudhary						

Prof. Neeraj Dilbaghi

Organized one week Global Initiative for Academic Networks (GIAN: MHRD-Scheme) Workshop entitled "NANOPARTICLE SYNTHESIS AND CONJUGATION CHEMISTRY FOR BIOAPPLICATIONS" from 16th July to 20th July, 2018 in collaboration with Dr. D.K. Lim, South Korea.

Organized 5 Refresher Courses, 5 Orientation courses, 9 Short term courses as Course Director of HRDC.

Organized and launched Ist Annual Refresher Program for Teachers (ARPIT-2018) as Course Director of HRDC through SWAYAM Portal.

Prof. Namita Singh

1.(**Co-Convener**) International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry" from February 21-23, 2018 partly supported by **Department of Biotechnology** Govt. of India New Delhi

2. (**Coordinator**) Two Week GIAN Workshop on "Applications of Thermodynamic Prediction for Development of Microbial Biotechnological Approaches" from November 12-21, 2018 under GIAN-MHRD, Government of India.

Prof. Vinod Chhokar

1. International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry" from February 21-23, 2018 (As Convener)

2. Two Week GIAN Workshop on " GIAN Workshop on "Genome Manipulations, Editing & Interference by VIGS, CRISPR and RNAi" from March 5-14, 2019 under GIAN MHRD, Government of India. (**Coordinator**)

3. Two days Workshop in Bioinformatics on "National Workshop on Computational System Biology and Bioinformatics" during February 25-26, 2019 under the BIF program sponsored by Department of Biotechnology Govt. of India New Delhi.

Dr. Rajesh Thakur

Dr. Rajesh Thakur	Nanotechnology: Nanoparticle Synthesis and Conjugation Chemistry for Bioapplications	Guru Jambheshwar University of Science and Technology, Hisar	Bio and Nano Technology	Guru Jambheshwar University of Science and Technology, Hisar	Hisar	16th July to 20th July, 2018.
Dr. Rajesh Thakur	National Workshop on "Computational system biology and bioinformatics" supported by DBT, Govt. of India, under BIF programme	Guru Jambheshwar University of Science and Technology, Hisar	Dept. of Bio and Nano Technology, GJUS&T	Guru Jambheshwar University of Science and Technology, Hisar		25-26 Feb, 2019
Dr Sapna Grewal	GIAN Workshop on "Genome Manipulations, Editing & Interference by VIGS, CRISPR and RNAi"	GJUS&T, Hisar	Bio & Nano Technology	GJUS&T	Hisar	March 5-14, 2019
	National workshop on Computational System Biology and Bioinformatics	GJUS&T, Hisar	Bio & Nano Technology	GJUS&T	Hisar	Feb 25-26, 2019

Dr. K.D. Rawat

Dr Krishan Dutta Rawat	Application od thermodynamics prediction for development of microbial biotechnological approaches	Guru Jambheshwer University of Science & Technology	Bio & Nano technology	Guru Jambheshwar University of Science & Technology	Hisar	12 -21 NOV 2018

Dr. Rakesh Yadav

Dr. Rakesh Yadav	Textiles Application of Dye Doped Silica Nanoparticles	International Conference on Bio and Nano Technologies For Sustainable	Guru Jambheshwar University of Science and Technology,	HISAR	21-23 FEBRUARY, 2018

		Agriculture, Food, Health, Energy and Industry (ICBN 2018)	Hisar-125001		
Dr. Rakesh Yadav	Genome Wide Study of Magnesium Transport Gene Family in *Populus Trichocarpa.*	International Conference on Bio and Nano Technologies For Sustainable Agriculture, Food, Health, Energy and Industry (ICBN 2018)	Guru Jambheshwar University of Science and Technology, Hisar-125001	HISAR	21-23 FEBRUARY, 2018
Dr. Rakesh Yadav	Bioinformatics of UDP glycosyltransferases	International Conference on Bio and Nano Technologies For Sustainable Agriculture, Food, Health, Energy and Industry (ICBN 2018)	Guru Jambheshwar University of Science and Technology, Hisar-125001	HISAR	21-23 FEBRUARY, 2018
Dr. Rakesh Yadav	-	Two week GIAN workshop on "Application of Thermodynamic Prediction for Development of Microbial Biotechnological Approaches"	Guru Jambheshwar University of Science and Technology, Hisar-125001	HISAR	12-21 NOVEMBER, 2018
Dr. Rakesh Yadav	-	Two week GIAN workshop on "Genome Manipulations, Editing and Interference by VIGS, RNAi and CRISPR	Guru Jambheshwar University of Science and Technology, Hisar-125001	HISAR	5-14 MARCH, 2019

(XIII) Association with National and State Level Bodies (Give teacher-wise details):

(i) Member of Professional bodies

Name of the Teacher	**Member of Professional bodies**
Prof. Ashok Chaudhary	Member of All India Microbiologists Association
Prpf. Neeraj Dilbaghi	Association of Microbiologists of India. (Life Member) Society for Conservation of Domestic Animal Biodiversity (Life Member)

	Society for Sustainable Agriculture & Resource Management. (Life member & Coordinator GJUST Chapter)
Prof. Namita Singh	Association of Microbiologists of India.(Life Member) Executive member of Hisar unit for the year 2005-2006, 2009-2010,2016-2019, Elected General Secretory AMI Hisar Unit 2019-20, General Secretory (Elect) 2020 -2022 Association of Microbiologist of India Association for promotion of DNA Fingerprinting & other DNA Technologies. (Life Member L-595) Indian Science Congress. Indian Society of Cell Biology Indian Science Congress. Indian Women scientists Association. Society for conservation of Domestic Animal Biodiversity (Life Member) Society for Sustainable Agriculture & Resource Management. (Life member)
Prof. Vinod Chhokar	Life Member, Society of Biological Chemist, India Life Member, Association of Microbiologists of India life Member, Society for Conservation of Domestic Animal Biodiversity, India Life Member, International Aloe Science Council, Texas, USA
Dr. Rajesh Thakur	Member of All India Microbiologists Association
Dr. Sapna Grewal	Member of "The Society for Plant Biochemistry & Biotechnology", New Delhi. Life Member of "The Indian Society of Genetics & Plant Breeding", New Delhi.

(i) Member of Expert Committee

Name of the Teacher	**Member of Expert Committee**
Prof. Ashok Chaudhary	
Prpf. Neeraj Dilbaghi	Jury member for the Health Sciences and Allied subjects including Pharmacy Category- Zonal level Research Convention- ANVESHAN on 16^{th} -17^{th} January 2019 at NIFTEM in collaboration with Association of Indian Universities (AIU) Member, Executive Council of Haryana State Council for Science and Technology, Sector-2, Panchkula. Institutional Coordinator (RUSA) of GJUS&T, Hisar. Member of Departmental Research Committee, Staff council and Scientific Advisory Committee of Dept of Bio & Nano Technology. Member of Board of Studies of Dept of Bio & Nano Technology. Member of Faculty of Science and Technology Interface.

	Member of Women Cell of the University. Member of Institutional Animal Ethics Committee of GJUST, Hisar. Outside Expert Member of Internal Quality Assurance cell of CRSU, JIND Outside Subject Expert member of Selection Committee for CAS in Department of Biotechnology, MDU, Rohtak. (Jan, 2018) Outside Subject Expert member of Screening-cum-Evaluation Committee to consider the case(s) of Stage-II to Stage-III under Career Advancement Scheme (CAS) for the Department of Bio-Medical Engineering, DCRUST, Murthal. (10-9-2018) Coordinator, Hisar Knowledge Hub, Cluster of institutes. Member Secretary, Research Promotion Board, GJUS&T, Hisar. Incharge Radio-Ecology Centre. Member of DST- Purse Project implementation. Director National Resource Centre GJUST Hisar Member, Organizing Committee of 63rd DAE Solid State Physics Symposium (DAE-SSPS 2018) Member, Organizing Committee of 63rd DAE Solid State Physics Symposium (DAE-SSPS 2018) Member, Organizing Committee of "International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry", in collaboration with Society for Sustainable Agriculture & Resource Management from Feb 21-23, 2018. Session Co-Chair.
Prof. Namita Singh	Co-convener of "International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry", in collaboration with Society for Sustainable Agriculture & Resource Management from Feb 21-23, 2018. Session Co- Chair. UGC Chairman Nominee for CPE advisory board of S S Khanna College Allahabad UGC Chairman Nominee of Governing council of R.J. College Mumbai UGC Chairman Nominee member of Governing council of Duvvuru Ramanamma Womens College GUDUR-524101 UGC Chairman Nominee Expert Committee visit to SRM Institute of Science and Technology related to recognition of ODL programme 2018-19. UGC Chairman Nominee Expert Committee visit to Subbalakshmi Lakshmipathy College of Science, Madurai, 2018 UGC Chairman Nominee expert to serve as Members of the advisory committee CPE Shri Shivaji Science College Congress Nagar, NAGPUR 440 012 2018 UGC Chairman Nominee Expert Committee visit to SRM Institute of Science and Technology related to recognition of ODL programme 2018-19 UGC Chairman Nominee Expert Committee visit to Spicer Adventist University, Pune 2019

	UGC Chairman Nominee Expert Committee visit to Centre for Environment Institute of Science and Technology Jawaharlal Nehru Technological University Hyderabad Telangana , INDIA 2019 UGC Chairman Nominee Expert Committee visit to Sikkim Manipal University Sikkim ODL programme 2018-19 Expert committee member of COE proposal of Different State University of M.P. under RUSA grant Madhya Pradesh Govt.of India 2019 UGC Chairman Nominee Expert Committee visit to Govt girls college sagar for COE college Sagar 2018 Member of IBSC, LLRU, Hisar Member of IBSC, IPR-cell, BOSR, AC member of GJUS&T, Hisar

Member of Academic Bodies of various of other Institutions.

Name of the Teacher	**Member of Academic Bodies of various of other Institutions**
Prof. Ashok Chaudhary	
Prpf. Neeraj Dilbaghi	Outside Expert – UG Board of Studies, Deptt. Of Biotechnology, DCRUST, Murthal Outside Expert – PG Board of Studies, Deptt. Of MSN, DCRUST, Murthal Outside Expert – DRC, Deptt. Of biomedical Engineering, DCRUST, Murthal Outside Expert –Board of faculty of Humanities and Sciences, YMCA, Faridabad. Outside Subject Expert –Board of Studies, Deptt. Of Biochemistry, MDU, Rohtak Outside Subject Expert –Board of Studies, UIET, KUK. Outside Subject Expert –Faculty of Life Sciences, MDU, Rohtak Outside Subject Expert –Academic Audit, UIET, MDU, Rohtak Outside Subject Expert –Board of Studies, Deptt. Of Biotechnology, Central university of Haryana, Maohindergarh. Outside Subject Expert –Board of Studies, Deptt. Of Biotechnology, MMU, Mullana. Outside Expert – Board of Studies, Dept. of Environmental Science & Technology, Central university of Punjab, Bathinda. Outside Expert – PGBOS, Deptt. of Food Technology, CDLU, Sirsa. Member Nominee of Academic Planning Board of CDLU, Sirsa

Prof. Namita Singh	External Subject Expert, Post Graduate Board of Studies & Research, Department of Biotechnology, Bansi Lal University, Bhiwani. External Subject expert, School of Biosciences Central University of Haryana, Mahendergarh. External Subject expert UG Board of Studies Department of Biotechnology, CDLU, Sirsa External Subject Expert PGBOS R Department of Biotechnology college of Engineering KUK, Kurukshetra. Member of BOSR CUH, Mahendergarh.
Prof. Vinod Chhokar	Member, Advisory Committee to monitor the progress of DBT supported Post Graduate programme in Biotechnology in HP University, Shimla External Subject Expert, Post Graduate Board of Studies & Research, Department of Biotechnology, HP University, Shimla
Dr. Anil Kumar	Program Coordinator of NSS House counselor of sports Training and placement officer of the department

(XIV) Details of Consultancy Work in the Department: **Nil**

Job Work	Name of agency	Total amount

(XV) Lecturers delivered (Give teacher-wise details):

Invited talks delivered in Refresher Courses	
Extension Lecturer	Prof. Ashok Chaudhury
	Prof. Neeraj Dilbaghi Invited talk 46 Extension Lecture 1 Delivered two invited expert lecture on "**Nanotechnology & Environment I & II**" to the participants of faculty Development programme on Environment sciences organized by Central University of Punjab, Bhatinda under PMMMNMTT on 25-3-2019. # Delivered two invited lecture **on "Technology & innovation" & "Next Gen Vaccines"** to the participants of Orientation Programme organized by HRDC, JMI, New Delhi on 18/6/2019. # Delivered two invited lecture **on "Nanobiotechnology" & "Transgenics & Vaccines"** to the participants of Refresher Programme organized by HRDC, HPU Shimla on 20/9/2018.

	# Delivered two invited expert lectures on **"Nanotechnology for environmental applications" and Transgenics Vaccines** to the Participants of Refresher Course (Env Sciences) organized by HRDC, BPSU, Khanpur Kalan on 22-8-2018. # Delivered two invited expert lectures on **"Science beyond 2020" and Future Vaccines** to the Participants of orientation Course organized by HRDC, BPSU, Khanpur Kalan on 22-11-2018. # Delivered two invited expert lectures on **"Science beyond 2020" and Smart Vaccines** to the Participants of orientation Course organized by HRDC, BPSU, Khanpur Kalan on 7-12-2018. # Delivered two invited lecture **on "Science & Technological Innovations" & "Edible Vaccines"** to the participants of Orientation Programme organized by HRDC, JMI, New Delhi on 6/10/2018. # Delivered two invited lecture on **"Nanotechnology & Converging technology"** & Vaccines **Of Future** to the participants of Orientation program organized by HRDC, GJUS&T, Hisar on 11-3-2019. # Delivered two invited lecture on **"Technology Beyond 2020"** & **Vaccines & Health** to the participants of Orientation program-28 organized by HRDC, GJUS&T, Hisar from 21-5-18 to 16-6-2018 # Delivered two invited lecture on **"Small is Big"** & **Edible Vaccines** to the participants of Orientation program-29 organized by HRDC, GJUS&T, Hisar from 7-6-18 to 4-7-2018 # Delivered two invited lecture on **"Nanotechnology Era"** & Transgenic **Vaccines** to the participants of Orientation program organized by HRDC, GJUS&T, Hisar on 29-11-2018. # Delivered two invited lecture on **"Science Beyond 2020"** & Vaccines & Health to the participants of Orientation program organized by HRDC, GJUS&T, Hisar on 29-5-19. # Delivered two invited lecture on **"Small is Big" & "Edible Vaccines"** to the participants of Orientation Programme organized by HRDC, KUK on 30-11-2018. # Delivered two invited lecture on **"Science Beyond 2020" & "Next Gen Vaccines"** to the participants of Orientation Programme organized by HRDC, KUK on 17/12/2018. # Delivered two invited lecture on **"Technological Boom" & "Transgenics & Vaccines"** to the participants of Orientation Programme organized by HRDC, KUK on 5/6/2019. # Delivered One invited expert lectures on **"Agri Food**

	Nanotechnology- Intelligent Tools, Opportunities & Challenges for Insect Pest Management to the Participants of ICAR sponsored CAFT course organized by Dept of Entomology, CCS HAU Hisar on 11-10-2018. # Delivered Two invited expert lectures on **"Nanotechnology- A Smart Technology and Nanotechnology Enabled Intelligent Tools for Agriculture and Animal Science** to the Participants of ICAR sponsored CAFT National Training Programme on "Nanotechnological and Biochemical Techniques for assessing the Quality and Safety of Milk and Milk Products" on 1/12/2018 by NDRI Karnal. # Delivered two invited lecture on **"Technology and innovations" & "Next Gen Vaccines"** to the participants of Faculty Induction Programme organized by HRDC, GNDU, Amritsar on 10/6/2019. # Delivered two invited lecture on **"Innovations with Nanotechnology" & "Future Vaccines"** to the participants of Faculty Development Programme organized by FDC, MDU, Rohtak on 18/2/2019. # Delivered two invited lecture **on "Nanotechnology- The Game Changer Technology" & "Biotechnology for Vaccine development"** to the participants of Orientation Programme organized by HRDC, KUK on 26-5-2018. # Delivered two invited lecture **on "NanoTsunami" & "Biotechnology for Vaccine development"** to the participants of Orientation Programme organized by HRDC, KUK on 26-5-2018. # Delivered two invited lecture **on "Small Science Big Dreams"** to the participants of Science Conclave organized by GJUST, Hisar on 13-2-2019. # Delivered two invited lecture on **"How to formulate a Research Proposal"** & **Funding agencies** to the participants of Refresher Course on RM organized by HRDC, GJUS&T, Hisar from 15-11-18 to 5-12-2018 # Delivered two invited lecture on **"How to formulate a Research Proposal"** & **Funding agencies** to the participants of STP on RM organized by HRDC, GJUS&T, Hisar from 12-3-18 to 17-3-2018
	Prof. Namita Singh • Talks delivered during Two Week GIAN Workshop on "Applications of Thermodynamic Prediction for Development of Microbial Biotechnological Approaches" from November 12-21, 2018 under GIAN-MHRD, Government of India. • Lecture delivered at CUH Mahenderghad 30/11/2018

	Lecture delivered in HRDC Hisar Lecture delivered in HRDC Khanpur
	Prof. Vinod Kumar Chhokar Delivered Radio Talk at FM Channel Hisar on Biotechnology- Scope and Applications **Dr. Sapna Grewal** Invited Talk on " Nanotechnology- nanoscience having giant potential" at SGT University on Mrach 19, 2019 **Prof. KK. Kapoor** Talk delivered during GIAN workshop (12 Nov to 21 Nov.,2018)Thermodynamic prediction for development of microbial biotechnological approaches. Title: Digestion of organic wastes for biogas production.

Any other

(XVI) Details of the Academic Activities/ Programs organized in the Department during the year:

(i) Seminar /Conferences/ Refresher Courses etc.

1. International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food , Health, Energy and Industry" from February 21-23, 2018
2. One Week GIAN Workshop on "Mammalian Reproductive Biotechnologies: Tools, Techniques & Methods" from December 11-15, 2017 under GIAN-MHRD, Government of India.
3. One Week GIAN Workshop on "Nanotechnology: Nanoparticles synthesis and Conjugation Chemistry for Bio applications " from July 16-20, 2018 under GIAN-MHRD, Government of India.
4. One Week GIAN Workshop on "Applications of Thermodynamic Prediction for Development of Microbial Biotechnological Approaches" from November 12-21, 2018 under GIAN-MHRD, Government of India.
5. Two days Workshop in Bioinformatics on "National Workshop on Computational System Biology and Bioinformatics" during February 25-26, 2019 under the BIF program sponsored by Department of Biotechnology Govt. of India New Delhi.

(ii) Extension Lecturers

Sr. No.	Name & Address	Topic
1	Prof. P.K. Gupta, FNA, FNASc., FNAAS Hony. Emeritus Professor & INSA Hony. Scientist Meerut University, Meerut 250004	Biotechnology for Human Health and Plant Breeding
2.	Prof K.C. Bansal, FNASc, FNAAS Former Director, NBPGR (ICAR) and Senior Fellow, TERI-Deakin Nano-Biotechnology Centre, Gurugram	Chloroplast Transformation and CRISPR-mediated Genome Editing
3.	Prof S.S Gosal, FNASc Former Director Research, Punjab Agricultural University, Ludhiana	Plant tissue culture and transformation in relation to crop improvement
4.	Dr. Suresh Kumar, Principal Scientist (Plant Biochemistry) Division of Biochemistry I.A.R.I., Pusa , New Delhi	Epigenomics: A New Perspective of Genome-Environment Interactions
5	Dr. Siddharth Tiwari , "Scientist" National Agri-Food Biotechnology Institute (NABI)) Sector 81, Knowledge City, S.A.S. Nagar, Mohali – 140306, Punjab (India)	Application of tissue culture and biotechnology in crop improvement

6	Dr. Pratap Kumar Pati Professor and Head, Department of Biotechnology Guru Nanak Dev University Amritsar-143005Punjab	RNAi technology in Agriculture: shaping the future Herbal Biotechnology
7.	Dr Ajay Kumar, Application Scientist Business Development Manager, Thermo Fisher Scientific India, Gurugram	Genome editing tools for applications in Agbio research
8	Dr Vivek Sharma IIT New Delhi	BIRAC Schemes (BIG) to promote Innovative research in field of Biotechnology

(iii) Students Tours/ Training Programmes

- Organized Students Visit to Centre of Plant Biotechnology, Hisar during Jan- May session each year 2018 and 2019.
- Organized Students Visit to Centre Institute of Research on Buffaloes and National Research of Research on Equines, Hisar during Jan- May session each year.
- Interaction with students to inculcate moral values and making them responsible for society.
- Orientation programme for M.Sc. Biotech, Microbiology, and M.Tech. Nano Science &Technology
- Educational tour to attend BCIL Workshop at INSA New Delhi on March 18, 2019 .
- Educational tour to AIIMS Jodhpur , IIT Jodhpur, CAZRI Jodhpur, MLSU, Udaipur, Central University of Rajasthan , Kishangarh, Ajmer from 29-10-2018 to 02-11-2018

(iv) Industry Interaction Programs

- Educational tour to AIIMS Jodhpur , IIT Jodhpur, CAZRI Jodhpur, MLSU, Udaipur, Central University of Rajasthan , Kishangarh, Ajmer from 29-10-2018 to 02-11-2018
- Dr. Vivek Sharma IIT New Delhi student interaction on BIRAC Schemes (BIG) to promote innovation research in Field of Biotechnology 2/8/2018

(v) Any other

Details of international collaboration established for teaching and training.

Sr. No.	Collaboration Program	Collaboration Country
1.	India –Egypt Science and Technology Co-operation Program of DST, Govt of India	Egypt
2.	India –Ukraine Science and Technology Co-operation Program of DST, Govt of India	Ukraine
3.	India –Thailand Science and Technology Co-operation Program of DST, Govt of India	Thailand
4.	R& D Project in Collaboration with Dr. Dong-Kwon Lim , Professor , Korea University, Seoul, South Korea	South Korea

5.	R& D Project Funded by ADMA Agan Limited , Isreal	Israel
6.	MoU with University of Maryland, USA	Maryland, USA
7.	MoU with Technical University of Cartagena Spain	Spain
8.	MoU with Adis Ababa University, Ethiopia	Ethiopia

(XVII) Any other Information:

Seminar and conferences organized by all faculty Seminar/ workshop

2018-19

- Two Week GIAN workshop on “Genome Manipulations, Editing and Interference by VIGS, CRISPR and RNAi ” from March 5-14, 2019 under GIAN-MHRD, Government of India. [Foreign Faculty Marcos Egea Gutiérrez-Cortines, Director Institute of Plant Biotechnology , Technical University of Cartagena, Spain] [Rs 8,16,000/-]
- Two days Workshop in Bioinformatics on “National Workshop on Computational System Biology and Bioinformatics” during February 25-26, 2019 under the BIF program sponsored by Department of Biotechnology Govt. of India New Delhi.
- One Week GIAN Workshop on "Nanotechnology: Nanoparticles synthesis and Conjugation Chemistry for Bio applications " from July 16-20, 2018 under GIAN-MHRD, Government of India. [Rs 5,22,869/-]
- Two Week GIAN Workshop on "Applications of Thermodynamic Prediction for Development of Microbial Biotechnological Approaches” from November 12-21, 2018 under GIAN-MHRD, Government of India. [Rs 8,16,000/-]
- International Conference on Bio and Nano Technologies for Sustainable Agriculture, Food, Health, Energy and Industry” from February 21-23, 2018 partly supported by Department of Biotechnology Govt. of India New Delhi