

Progress report of the Second Year (April 2019 – March 2020)
Deen Dayal Upadhyaya College (University of Delhi)
Supported under Star College Scheme (Department of Biotechnology)

1. **Name of the College:** Deen Dayal Upadhyaya College (University of Delhi)
2. **Name of Departments supported:** Botany, Zoology, Chemistry, Mathematics and Electronics
Name of Coordinator, designation, address, phone nos. Dr. Manoj Saxena, Associate Professor
 Department of Electronics
 Deen Dayal Upadhyaya College (University of Delhi)
 Sector-3, Dwarka, New Delhi-110 078
 09968393104

3. **No. of regular faculty with Ph.D. in each participating department:**

Name of the Participating Department	Total No. Faculty Members	Permanent Faculty with Ph. D	Ad-hoc Faculty Members with Ph. D
Botany	09	07	01
Zoology	09	06	03
Chemistry	14	14	--
Mathematics	13	06	02
Electronics	08	05	03

4. **List of courses (B.Sc./M.Sc./PG Diploma, certificate etc) run by different participating departments:**

Name of the Participating Department	Courses Run by Different Departments	No. of Students
Botany	B. Sc. Hons. Botany B. Sc. Life Science	40 40
Zoology	B. Sc. Hons. Zoology	40
Chemistry	B. Sc. Hons. Chemistry B. Sc. Physical Sc. Chemistry	40 40
Mathematics	B. Sc. Hons. Mathematics B. Sc. Mathematical Science	78 40
Electronics	B. Sc. Hons. Electronics	60

5. **Cut off percentage for admission in different courses in participating departments, positions in university, percentage of result in 2019-20 academic session**

2019-20 academic session

Courses Run by Different Departments	% Gen (First/Last)	% OBC (First/Last)	% SC (First/Last)	% ST (First/Last)	%EWS (First/Last)	% PwD (First/Last)
B. Sc. Hons. Botany	92/87	88/84	82/78	75/68	91/83	75/50
B. Sc. Life Science	91/89	87/81	80/77.33	72/65	90/81	70/40
B. Sc. Hons. Zoology	94/91	91/85	87/83	76/76	93/87	75/70
B. Sc. Hons. Chemistry	96/92	93/92.33	85/81	75/64	95/94	75/50
B. Sc. Physical Sc. Chemistry	92/88.66	88/85.88	75/73	70/58	91/89	70/40
B. Sc. Hons. Mathematics	97/94	94/91.25	87/86	73/73	96/93	75/45
B. Sc. Mathematical Sc.	94/91	91/87	85/70	75/60	93.5/89	70/40
B. Sc. Hons. Electronics	92/88.33	90/83	85/74	73/53	91/89	75/50

2018-19 academic session

Courses Run by Different Departments	% Gen (First/Last)	% OBC (First/Last)	% SC (First/Last)	% ST (First/Last)	% PwD (First/Last)
B. Sc. Hons. Botany	92/89.33	88/79	80/79	72/70	75/50
B. Sc. Life Science	91/87	87/83	80/70	72/65	70/40
B. Sc. Hons. Zoology	94/90	91/87	85/84.66	75/74	75/50
B. Sc. Hons. Chemistry	96/94	92/91	85/84	75/75	75/50
B. Sc. Physical Sc. Chemistry	92/91	87/86.67	75/67	70/43	70/40
B. Sc. Hons. Mathematics	96.5/93	94.5/91.75	87/78	72/71.5	75/45
B. Sc. Mathematical Sc.	91/87	87/83	80/70	72/65	70/40
B. Sc. Hons. Electronics	94/88	90/83	85/70	73/50	75/50

2017-18 academic session

Courses Run by Different Departments	% Gen (First/Last)	% OBC (First/Last)	% SC (First/Last)	% ST (First/Last)	% PwD (First/Last)
B. Sc. Hons. Botany	92/89.33	88/79	80/79	72/70	75/50
B. Sc. Life Science	91/87	87/83	80/74	72/65	70/40
B. Sc. Hons. Zoology	94/90	91/87	85/84.66	75/74	75/50
B. Sc. Hons. Chemistry	96/94	92/91	85/84	75/75	75/50
B. Sc. Physical Sc. Chemistry	92/90	87/86.66	75/67	70/43	70/40
B. Sc. Hons. Mathematics	96.5/	94.5/91.75	87/78	72/71.5	75/45
B. Sc. Mathematical Sc.	94/89	91/87	85/70	75/71	70/65
B. Sc. Hons. Electronics	94/88	90/83	85/72	73/50	75/50

2016-17 academic session

Courses Run by Different Departments	% Gen (First/Last)	% OBC (First/Last)	% SC (First/Last)	% ST (First/Last)	% PwD (First/Last)
B. Sc. Hons. Botany	90/89.33	85/75	80/70	72/70	70/70
B. Sc. Life Science	89/87	83/70	75/74	72/65	65/40
B. Sc. Hons. Zoology	92/91.33	87/86	82/74	74/65	70/50
B. Sc. Hons. Chemistry	96/92	92/75	85/55	75/65	70/70
B. Sc. Physical Sc. Chemistry	88/78	83/82	78/73	75/55	65/40
B. Sc. Hons. Mathematics	96/93	93/91	87/74.75	72/69	70/70
B. Sc. Mathematical Sc.	90/90	85/84	80/78	75/Pass	65/35
B. Sc. Hons. Electronics	94/90	90/80	85/68	75/67	70/55

- Data (First cut off) unavailable

2015-16 academic session

Courses Run by Different Departments	% Gen (First/Last)	% OBC (First/Last)	% SC (First/Last)	% ST (First/Last)	% PwD (First/Last)
B. Sc. Hons. Botany	90/87.66	85/80	80/76*	72/60	70/**
B. Sc. Life Science	89/84	83/76	75/68	72/64*	65/**
B. Sc. Hons. Zoology	92/91.66*	87/81.66	82/81.66*	74/70	70/65*
B. Sc. Hons. Chemistry	96/93	92/88.66	85/82*	78/45	70/60*
B. Sc. Physical Sc. Chemistry	88/83	83/67	78/67*	75/**	65/**
B. Sc. Hons. Mathematics	96/93.75	93/90	87/82*	72/60	70/70*
B. Sc. Mathematical Sc.	90/89.75*	85/84.5	80/63	75/70	65/**
B. Sc. Hons. Electronics	94/91*	90/83	85/70	75/40	70/**

*- Seventh cut off is not available.

** - Minimum pass marks for the respective board

2014-15 academic session

Courses Run by Different Departments	% Gen (First/Last)	% OBC (First/Last)	% SC (First/Last)	% ST (First/Last)	% PwD (First/Last)
B. Sc. Hons. Botany	88/80	82/76	82/71	72/62	70/50
B. Sc. Life Science	85/80	80/76	75/71	72/60	70/40
B. Sc. Hons. Zoology	90/86.33	86/80	85/69	74/71	70/50
B. Sc. Hons. Chemistry	94/91	93/90	91/77	75/71	80/50
B. Sc. Physical Sc. Chemistry	85/82	80/78	75/68	75/53	75/40
B. Sc. Hons. Mathematics	93/92.5	90/89	85/78.5	72/60	80/40
B. Sc. Mathematical Sc.	85/84.5	80/79.5	75/71	75/50	75/35
B. Sc. Hons. Electronics	96/88	90/85	90/69	80/61	89/50

6. List of projects undertaken by students, industrial visits by students, summer training in last one year:

Following Projects were carried out by Electronics during 15-Days Winter Internship (December 15-31, 2019)

1. Arduino programming and getting familiar with Arduino IDE
2. Getting familiar with sensors and input and output devices
3. Interfacing LEDs and led matrix with Arduino
4. Interfacing keypad matrix with Arduino
5. Interfacing 7 segment with Arduino
6. Interfacing IR sensors with Arduino
7. Interfacing LCD with Arduino
8. Interfacing Motors and Motors Driver (L293D) with Arduino
9. Digital Piano
10. Arduino Calculator
11. IR Remote Control Car
12. GSM Based Home Security
13. Digital Thermometer
14. LFR Using IR
15. Obstacle Avoiding Robot
16. RFID based EVM

Industrial Visit:

Date	Department	Details	Annexure No.
April 22, 2019	Botany	Academic excursion to National Dairy Research Institute (NDRI), Karnal	I
May 30, 2019	Zoology	Educational visit to NII for "One day Science Popularization Program"	II
January 08, 2020	Zoology	Visit to National Institute of Immunology (Vasant Kunj) for attending lecture delivered by Dr. Eric Green, Director, National Human Genome Research Institute under DBT-BIRAC Leadership Dialogue Series initiated by the Department on Jan 08, 2020	III
February 01, 2020	Zoology	Visit to CSIR IGIB and Zebrafish facility	IV
February 21, 2020	Electronics	Visit to The National Small Industries Corporation (A Government of India Enterprise, Okhla on February 21, 2020 as part of Three Days Workshop On Entrepreneurship Awareness Camp	V
March 04, 2020	Chemistry	An industrial visit was organised as a joint activity	

		of COVALANCE, the chemical society and DBT Star college scheme on 04/03/2020. The students of B.Sc.(H) Chemistry and B.Sc.(Phy. Sc.) with chemistry along with six teachers visited the Moon Beverages Limited(authorised bottler of the Coca-cola company), Greater Noida, U.P.	
March 05, 2020	Zoology	Educational Visit to National Institute of Health and Family Welfare (NIHFW), New Delhi	VI

Summer Training/Project:

Date	Department	Details	Annexure No.
June 27, 2019 to July 12, 2019	Zoology	Two-Week Summer Training-cum-Workshop on Fundamentals of Microbiology (Basic)	VII(A)
May 15, 2020 – July 15, 2020	Electronics	Summer Research Fellowship Program	VII(B)
September 09, 2019	Zoology	Metagenomic Studies	VII(C)
December 15-31, 2019	Electronics	15-Days Winter Internship	VIII

7. Training received by faculty from participating departments:

- “Engineering Meets Evolution: Designing Biological Systems- An India-EMBO (European Molecular Biology Organization) Symposium” (January 30-February 01, 2020)- Participant: Dr. Sudhir Verma, Assistant Professor & Convener-DBT Star Scheme, Department of Zoology. An interdisciplinary international symposium at the interface of biology, engineering and theoretical sciences was organized by Indian Institute of Technology (IIT), Madras under India-EMBO symposium from January 30-February 01, 2020. For this highly competitive event, Dr. Sudhir Verma from Department of Zoology got selected by the organizers based on his application and purpose. The meeting was attended with a purpose to listen and interact with experts working in the fields of synthetic biology and bioengineering to explore the possibility of initiating advanced interdisciplinary research by undergraduate students in the college. Dr. Verma interacted with renowned international experts to invite them in the college for delivering the talks so that students get the exposure of interdisciplinary scientific research as a career option. Considering the future of biology as an engineering discipline was the major point of the symposium.

8. List of exhibitions/seminars/training courses conducted by the college:

Date	Department	Type of Activity	Details	Annexure No.
August 16-18, 2019	Zoology	Workshop	Collaboratively Understanding Biology Education (CUBE)-STEM Workshop	IX
August 22-23, 2019	Zoology Botany	Workshop	A two-day National workshop on "INTELLECTUAL PROPERTY RIGHTS"	X
September 06, 2019	Mathematics	Workshop	Latex Level-I workshop – September 06, 2019	XI
September 9, 2019	Mathematics	Workshop	Latex Level-II workshop – September 9, 2019	XII
September 27-28, 2019.	Botany Zoology Electronics Chemistry Mathematics	Workshop	Fourth Lecture Workshop on "Trans-disciplinary Areas of Research and Teaching by Shanti Swaroop Bhatnagar Awardee held during September 27-28, 2019.	XIII

October 17-18, 2019	Electronics	Competition	Prelims of IoT Challenge 2020 (4th Edition National Level Event based on Internet of Things (IoT)) as part of 100th Birth Centenary (1919 - 2019) Celebration of Father of Indian Space Programme - Dr. Vikram A Sarabhai & Dr. A. P. J. Abdul Kalam's Birthday to be Celebrated as Innovation Day	XIV(A)
October 21-24, 2019	Electronics	Workshop	Hands-on-Workshop on VHDL Programming and Digital Circuit Designing with implementation of FPGA to be held during October 21-24, 2019	XIV(B)
November 02, 2019	Electronics	Colloquium	On "Indian Space Programme: India's Incredible Journey" as part of 100th Birth Centenary (1919 - 2019) of Dr. Vikram A Sarabhai, Father of Indian Space Programme	XIV(C)
November 04, 2019	Mathematics	Workshop	Maple Workshop	XV
November 11-12, 2019	Botany	Workshop	Training workshop and exhibition on 'Utilization of plant resources in human welfare'	XVI
January 17, 2020	Botany	Workshop	Hands-on workshop on column chromatography technique	XVII
Jan 21, 2020	Botany Zoology Electronics Chemistry Mathematics	Exhibition/ Competition	DDUC HACKATHON 2020	XVIII
January 23, 2020	Mathematics	Seminar	Research Seminar in Mathematical Sciences held on Jan 23, 2020	XIX
Jan 23-24, 2020	Botany Zoology Electronics Chemistry Mathematics	Workshop	Workshop On Entrepreneurship Awareness Camp Jan 23-24, 2020	XX
January 28, 2020	Zoology	Workshop	Hands-on workshop on "Science Illustrations"	XXI
February 26-27, 2020	Botany Zoology Electronics Chemistry Mathematics	Workshop	National Level Workshop on Women in Science: A Career in Science held during Feb 26-27, 2020	XXII

Outreach Program:

Date	Department	Details	Annexure No.
September 06, 2019	Zoology	CUBE STEM meet at Acharya Narendra Dev College (University of Delhi)	XXIII

September 30 – October 01, 2019	Botany Zoology	Outreach activity to Ashoka University for Mini-symposium on “Genetics and Evolution: Intertwined Strands”	XXIV
October 10-11, 2019	Zoology Electronics	School Outreach Program for Class XI and XII students of Bal Bharati Public School Dwarka on October 10-11, 2019	XXV
October 19-22, 2019	Zoology Electronics	School Outreach Program at Government Senior Secondary School, Bani, Himachal Pradesh from October 19-22, 2019	XXVI(A)
October 19-22, 2019	Zoology Electronics	School Outreach Program at Government Senior Secondary School, Biar, Himachal Pradesh from October 19-22, 2019	XXVI(B)
January 01-15, 2020	Electronics	Training Program for School Students on HTML, CSS and Java Script For Class XI and XII Students of Government Co-Ed Senior Secondary School, Baprola, New Delhi 110043 (DoE School Code: 1617030)	XXVII

9. Name, designation, host institute of guest faculty invited:

Date	Department	Details	Annexure No.
August 20, 2019	Zoology	Prof. Satyabhama Das Biju (the Frogman of India) Head, Department of Environment Studies, University of Delhi	XXVIII
August 5, 2019	Mathematics	Professor Sudhesh Srivastav, Department of Biostatistics, Tulane University, USA	XXIX
January 29, 2020	Botany Zoology Electronics Chemistry Mathematics	Professor Cher Ming Tan IEEE Electron Device Society Distinguished Lecturer, Chang Gung University, Taiwan & Director of Centre of Reliability Science and Technology, CReST Lab, Chang Gung University, Kwei-Shan Tao-Yuan, Taiwan, 333, R.O.C	XXX
January 29, 2020	Botany Zoology Electronics Chemistry Mathematics	Shri Sanjeev K Varshney Adviser/ Scientist G & Head of the International Division (Bilateral cooperation), Department of Science and Technology, Government of India	
January 29, 2020	Botany Zoology Electronics Chemistry Mathematics	Dr. Umesh Kumar Sharma Scientist E, INSPIRE Program, Department of Science and Technology, Government of India	
February 17, 2020	Zoology	Lecture by Ms. Misha Bansal (Coordinator for Campus Bird Count, Delhi and Project Fellow, CEDAR)	XXXI
March 31, 2020	Electronics	Webinars were delivered by Professor Ajoy Ghatak on March 31, 2020 and April 06, 2020 which were attended (via google meet) by over 150 students on each occasion.	XXXII
Visitors to DBT Star College Lab. During April 01, 2019 to March 31, 2020			XXXIII

10. Date of Advisory committee meeting: Scheduled for November 12, 2020

11. List of New Practicals/ demonstrations introduced in different departments in last one year:

List of Experiments done (as mentioned in the DBT Star Program Proposal):

S. No.	List of Experiments	Teacher's involved & Convenor(s)	Date of conduct of experimental sessions	No. of Beneficiaries (Students)
1.	Biochemical Test to test different bacterial species with oxidase activity	Dr. Gauri Garg, Dr. Princy Hira, Dr. Renu Solanki & Dr. Shailly Anand	3.07.2019 to 12.07.2020	4 batches of 4 students in each
2.	Biochemical Test to test different bacterial species exhibiting catalase activity	Dr. Gauri Garg, Dr. Princy Hira, Dr. Renu Solanki & Dr. Shailly Anand	3.07.2019 to 12.07.2020	4 batches of 4 students in each
3.	Biochemical Test to test different bacterial species capable of Indole production	Dr. Gauri Garg, Dr. Princy Hira, Dr. Renu Solanki & Dr. Shailly Anand	3.07.2019 to 12.07.2020	4 batches of 4 students in each
4.	Biochemical Test to test different bacterial species with ability to hydrolyse gelatin	Dr. Gauri Garg, Dr. Princy Hira, Dr. Renu Solanki & Dr. Shailly Anand	3.07.2019 to 12.07.2020	4 batches of 4 students in each
5.	Preparation of different types of culture media (liquid and solid)	Dr. Nitish Mahato, Dr. Renu Solanki & Dr. Shailly Anand	27.06.2019	4 batches of 4 students in each
6.	Sterilization of media by autoclaving	Dr. Nitish Mahato, Dr. Renu Solanki & Dr. Shailly Anand	27.06.2019	4 batches of 4 students in each
7.	Preparation of Media Plates for Culturing	Dr. Nitish Mahato, Dr. Renu Solanki & Dr. Shailly Anand	28.06.2019	4 batches of 4 students in each
8.	Spreading of soil samples on solid media plates	Dr. Renu Solanki & Dr. Shailly Anand	1.07.2019	4 batches of 4 students in each
9.	Inoculation of bacteria (E. coli) in liquid medium	Dr. Renu Solanki & Dr. Shailly Anand	1.07.2019	4 batches of 4 students in each
10.	Identification of bacterial diversity based on morphological variations	Dr. Renu Solanki & Dr. Shailly Anand	8.07.2019	4 batches of 4 students in each

List of Additional Experiments by Department of Zoology

S. No.	List of Experiments	Teachers involved & Convenors/ Coordinators	Date of conduct of experimental sessions	No. of Beneficiaries (Students)
1.	Gram Staining for identification of Gram Positive and Gram Negative bacteria	Dr. Anita Gulati, Dr. Renu Solanki & Dr. Shailly Anand	28.06.2020	4 batches of 4 students in each
2.	Preparation of Glycerol vials for preservation of isolates and its sterilization	Dr. Renu Solanki, Dr. Shailly Anand & Dr. Nitish Mahato	1.07.2019	
3.	Estimation of CFU Count by Spread Plate Method	Dr. Renu Solanki, Dr. Shailly Anand & Dr. Nitish Mahato	2.07.2019	
4.	To study motility in bacteria by Hanging Drop Method	Dr. Renu Solanki, Dr. Shailly Anand & Dr. Kamlesh Kumari	2.07.2019	
5.	Chemical Synthesis of nanoparticles	Dr. Mahaveer Gengwa, Dr. Renu Solanki & Dr. Shailly Anand	4.07.2019	
6.	Synthesis of nanoparticles from plant extracts	Dr. Mahaveer Gengwa, Dr. Renu Solanki & Dr. Shailly Anand	5.07.2019	
7.	Antimicrobial activity of the	Dr. Renu Solanki, Dr. Shailly Anand,	5.07.2019 to	

	nanoparticles synthesized chemically and from plant extracts using agar well method	Dr. Rashmi Kumari & Dr. Nitish Mahato	7.07.2019	
8.	Preparation of blood smear	Dr. Manish Sharma, Dr. Lathika Nair, Dr. Renu Solanki & Dr. Shailly Anand	6.07.2019	
9.	Handling, culturing and study of malarial parasites	Dr. Manish Sharma, Dr. Lathika Nair, Dr. Renu Solanki & Dr. Shailly Anand	6.07.2019	
10.	Isolation of pure cultures of bacteria by streaking method	Dr. Renu Solanki, Dr. Shailly Anand, Dr. Rashmi Kumari, Dr. Kamlesh Kumari	March/ April 2019	5 students
			6.07.2019	4 batches of 4 students in each
11.	Handling, culturing and study of diverse protozoans	Dr. Seema Makhija, Dr. Renu Solanki & Dr. Shailly Anand	10.7.2019	4 batches of 4 students in each
12.	To determine the doubling time of any given bacteria	Dr. Renu Solanki, Dr. Shailly Anand & Dr. Rashmi Kumari	9.7.2019	4 batches of 4 students in each
13.	To observe live microbes and their physiological phenomena such as budding in <i>Saccharomyces cerevisiae</i> , binary fission in <i>Paramecium</i> , movement pattern in <i>Blepharisma</i> / <i>E. coli</i> / <i>Lactobacillus</i> / <i>Pseudomonas</i> / <i>Sphingobium</i> etc.	Dr. Renu Solanki & Dr. Shailly Anand	1.7.2019	4 batches of 4 students in each
14.	Biochemical Test to test different bacterial species possessing amylase enzymatic ability	Dr. Gauri Garg, Dr. Princy Hira, Dr. Renu Solanki & Dr. Shailly Anand	3.07.2019 to 12.07.2020	4 batches of 4 students in each
15.	Biochemical Test to test different bacterial species for the property of hydrolysing Tween 80	Dr. Gauri Garg, Dr. Princy Hira, Dr. Renu Solanki & Dr. Shailly Anand	3.07.2019 to 12.07.2020	4 batches of 4 students in each
16.	In-vitro amplification of genes from genomic DNA	Dr. Shailly Anand, Dr. Renu Solanki & Dr. Kamlesh Kumari	9.09.2019	5 batches of 5 students in each
17.	In-vitro amplification of genes from environmental DNA samples	Dr. Shailly Anand, Dr. Renu Solanki & Dr. Kamlesh Kumari	9.09.2019	5 batches of 5 students in each
18.	Assembly, Use and application of Foldscope	Dr. Anita Gulati, Dr. Shailly Anand, Dr. Renu Solanki	18.10.2019	15 students
19.	To study the phenomenon of budding in yeast	Dr. Anita Gulati, Dr. Nitish Mahato, Dr. Shailly Anand & Dr. Renu Solanki	14.10.2019 to 17.10.2019	5 students
20.	Preparation of temporary mount of leaf peel of <i>Rhoeo</i> , visualization under the microscope & study of Plasmolysis	Dr. Reeta Kumari, Dr. Shailly Anand & Dr. Renu Solanki	15.10.2019 & 16.10.2019	4 students
21.	To prepare mounts and study different cell shapes and motility in bacteria	Dr. Rashmi Sharma, Dr. Shailly Anand & Dr. Renu Solanki	14.10.2019 to 16.10.2019	4 students

List of Additional Experiments by Department of Electronics

1.	Simulation of Combinational Circuits - gates, half adder, half subtractor, 4x1 multiplexer, etc.
2.	Create Test Bench for the combinational circuits
3.	Synthesize codes for combinational circuits on FPGA
4.	Simulation of Combinational Circuits through structural modeling techniques - full adder, full subtractor, 4 bit binary parallel adder, 16 x 1 multiplexer, etc.
5.	Test Bench Simulation of sequential circuits – Flip Flops, Counters and Registers
6.	Synthesizing sequential circuits, counters, on FPGA
7.	Implement on FPGA combinational design using Xilinx Vivado Tool
8.	Implement on FPGA sequential design using Xilinx Vivado Tool
9.	Xilinx Design Constraints : Create a project with I/O Planning type, enter pin locations, and export it to the RTL.
10.	Debugging using Vivado Logic Analyzer cores : Insert various Vivado Logic Analyzer cores to debug/analyze system behavior
11.	Simple Hardware Design : Create a Vivado project and use vio core to perform logic analysis .
12.	Debugging using Logic Analyzer Tool Lab : Explain Xilinx design constraint and how to use it in design using Vivado

List of Additional Experiments by Department of Chemistry

- An extra experiment on Verification of colligative property- Elevation of Boiling point of Water on addition of various solutes was conducted with B.Sc.(H) Chemistry V semester students on 19/10/2029. Sixteen students performed the experiments in eight groups under the guidance of Dr Shashi Saxena and Dr Ratna. The results were collated and discussed and the conclusions drawn from the experiment helped the students in understanding the concept of colligative properties.

12. Details of equipment purchased in each department from DBT grant: (item, no., cost, date of order placed, purchase/installation)

Details of equipment purchased in Department of Botany

S. No.	Department	Budget Head	Title	Qty	Sub-details	Amount (in)	Stock Register Page No.
1.	Botany	Non Recurring	Camera	1 No.	Paid to M/s Mittal Agencies against bill no. 17897 towards purchase of NIKON D5300 DSLR entered in Stock Register of DBT Star College on page no 17	49,867.00	17
2.	Botany	Non Recurring	Laminar Air Flow	1 No.	Paid to M/s Rescholar Equipment - GEMC - 511687785871083 dt June 27, 2018. Bill entered in stock register on page no. 27	99,225.00	27
3.	Botany	Non Recurring	Autoclave	1 No.	M/s Hansraj Scientific Metal Works. GEMC- 511687791923580. Bill entered on page no. 40	66,150.00	40
4.	Botany	Non Recurring	Plant Growth Chamber	1 No.	M/s Ocean Life Science Corporation. Bill entered in DBT Star College Stock Register on page no. 76.	1,94,700.00	76

5.	Botany	Non Recurring	Microwave Oven	1 No.	M/s Sargam India Electronics Pvt Ltd. GEMC-511687703152413. Bill entered on page No. 55	16,500.00	55
6.	Botany	Non Recurring	Minus 20 deep freezer and Refrigerated Water Bath	1+1	Paid to M/s Ocimum Life Sciences, bill no. OLS/2018-19/400 dt. 18/03/2019 towards purchase of Vestfrost make single solid door upright freezer and Refrigerated water bath.	1,50,000.00	116
7.	Botany	Non Recurring	Ice Box	2	M/s Paras Trading Company., Bill No. GEMC-511687756631086 dt 31/08/2019 (@ Rs. 3100 per piece)	6,200.00	117
8.	Botany	Non Recurring	Pipette	1	M/s Jain Brothers, Bill No. 511687705553186 dt 31/08/2019	5,289.00	118
9.	Botany	Non Recurring	Magnetic Stirrer	1	M/s Macro Scientific Works Pvt Ltd., Bill No. GEMC - 511687774755659 DT 31/08/2019	11,700.00	119
10.	Botany	Non Recurring	Clamp Meter	1	M/s Kolosh Instruments, Bill No. GEMC-511687752657046 DT 05/09/2019	11,490.00	120
11.	Botany	Non Recurring	Digital Water Testing Kit	2	M/s Accumax India GEMC-511687736390754 DT 13/09/2019	49,800.00	127
12.	Botany	Non Recurring	Distillation and Digestion Unit	1	M/s Accumax India GEMC-511687784675157 DT 13/09/2019	42,000.00	128
13.	Botany	Non Recurring	Accupipette	1	M/s Jain Scientific Biotech, Bill No. GEMC-511687706090746 DT 13/09/2019	11,547.00	129
14.	Botany	Non Recurring	Digital-Thermo-Hygrometer	2	M/s Mercury Lab Planners, Bill No. GEMC-511687788144349 DT 31/08/2019	2,998.00	130
15.	Botany	Non Recurring	BOD Incubator	1	M/s M. K. Scientific Instruments, Bill No. GEMC-511687778575672 DT 13/09/2019	50,000.00	131
16.	Botany	Non Recurring	Soxhlet Extraction	2	M/s Accumax India GEMC-511687751234415 DT 27/09/2019	48,000.00	139
17.	Botany	Non Recurring	Soil Moisture Meter	1	M/s Gera Ventures - GEMC-511687779421887 dt 07/10/2019	21,499.00	140
18.	Botany	Non Recurring	Cryo Gloves	2	M/s New Golden Enterprise - GEMC-511687786018636 DT 21/10/2019	23,000.00	148
19.	Botany	Non Recurring	Laboratory Tissue	4	M/s Gera Ventures - GEMC-511687787848845 dt	41,579.00	150

			Culture Rack		10/12/2019		
20.	Botany	Non Recurring	Chlorophyll Leaf Area Meter	1	M/s Gera Ventures - GEMC-511687797326351 dt 10/12/2019	94,497.00	151
Total						9,96,041	

Details of equipment purchased in Department of Zoology

S. No.	Department	Budget Head	Title	Qty	Sub-details	Amount (in Rs.)	Stock Register Page No.
1.	Zoology	Non Recurring	Laminar Ar Flow (Horizontal)	1	M/s Rescholar Equipment - GEMC - 511687703643865 DT June 06, 2018. Bill entered in stock register on page no. 22	80,325.00	22
2.	Zoology	Non Recurring	Refrigerated Incubator	1	M/s Jain Sciencetech Biotech - GEMC-511687742437779 DT June 09, 2018. Bill entered in stock register on page no. 23	44,500.00	23
3.	Zoology	Non Recurring	Magnus Zoom Stereo Binocular Microscope	1	M/s Olympus Opto Systems India Pvt Ltd. GEMC-511687776114074 dt. June 09, 2018. Bill entered on page no. 39	49,900.00	39
4.	Zoology	Non Recurring	Autoclave	1	M/s Hansraj Scientific Metal Works. GEMC-511687791923580. Bill entered on page no. 40	66,150.00	40
5.	Zoology	Non Recurring	Refrigerator	1	M/s Mahalaxmi Trading Co. GEMC-511687772095025 DT Sept 08, 2018. Bill entered in DBT Star College Stock Register on page no. 51.	30,200.00	51
6.	Zoology	Non Recurring	Orbital Shaker	1	M/s Jain Sciencetech Biotech - GEMC-511687771608663 DT September 24, 2018. Bill entered in stock register on page no. 53	48,999.00	53
7.	Zoology	Non Recurring	Distillation Water Plant	1	M/s Jain Sciencetech Biotech - GEMC-511687740538600 DT September 25, 2018. Bill entered in stock register on page no. 54	40,000.00	54
8.	Zoology	Non Recurring	magnetic stirrer with hot plate - 2 mlH	1	M/s Janki Impex Pvt Ltd. GEMC-511687709657999 dt. 01/10/2018. Bill entered in DBT Star College Stock Register on page no. 64	7,009.00	64
9.	Zoology	Non	Magnetic	1	M/s Gera Ventures.	9,599.40	65

		Recurring	Stirrer -5mlH		GEMC-511687786263923 dt. 03/10/2018. Bill entered in DBT Star College Stock Register on page no. 65.		
10.	Zoology	Non Recurring	Electrophoresis Power Supply	1	M/s Jain Scientific Biotech. GEMC-511687700478431 DT 03/10/2018. Bill entered in DBT Star College Stock Register on page no. 66.	37,999.00	66
11.	Zoology	Non Recurring	Hot air oven	1	M/s M. K. Scientific Instruments. Bill entered in stock register on page no. 67.	39,599.00	67
12.	Zoology	Non Recurring	Rotary Microtome	1	M/s Radical Scientific Equipments Pvt Ltd. Bill entered in stock register on page no. 68.	34,900.00	68
13.	Zoology	Non Recurring	Vertical Dual Mini GEL System: Mini D	1	M/s Jain Sciencetech Biotech. Bill entered in stock register on page no. 71.	21,216.00	71
14.	Zoology	Non Recurring	Vertical Dual Mini GEL System: Mini D	1	M/s Jain Sciencetech Biotech. Bill entered in stock register on page no. 71.	14,750.00	71
15.	Zoology	Non Recurring	Homogenizers	1	M/s Jain Sciencetech Biotech. Bill entered in stock register on page no. 72.	13,098.00	72
16.	Zoology	Non Recurring	Microscope (MLX-B Plus with Semi Plan Objectives)	5	M/s Olympus Opto Systems India Pvt Ltd. GEMC-511687783848417 dt. October 30, 2018. Bill entered on page no. 74.	1,55,000.00	74
17.	Zoology	Non Recurring	Vortex Mixer	2	M/s AARSON Scientific Works. GEMC-511687709629298 dt. October 05, 2018. Bill entered on page no. 75.	10,500.00	75
18.	Zoology	Non Recurring	Water and Soil Analysis Kit	2	M/s Mercury Lab Planners GEMC-511687795103439 DT 21/09/2019	55998.4	136
19.	Zoology	Non Recurring	DNA Electrophoresis with Power Supply	1	M/s Jain Scientific Biotech. GEMC-511687711468004 DT 01/10/2019	16,499.00	137
20.	Zoology	Non Recurring	Remi Water Bath 6 Hole	2	M/s Gera Ventures. GEMC-511687799900054 dt. 12/10/2019. Bill entered in DBT Star College Stock Register on page no. 138	67,999.32	138
21.	Zoology	Non Recurring	Sartorius Analytical Weighing	1	M/s Techchem Solutions Pvt. Ltd GEMC-511687798520755 DT. 21-	87,360.00	149

			Balance		11-2019		
22.	Zoology	Non Recurring	PH Meter (Mettler Toledo)	1	M/s The Precision Scientific Company) GEMC-511687758302359 dt Sept 13, 2019	44,500.00	77
Total						9,76,101	

Details of equipment purchased in Department of Chemistry

S. No.	Department	Budget Head	Title	Qty	Sub-details	Amount (in Rs.)	Stock Register Page No.
1.	Chemistry	Non Recurring	Magnetic Stirrer with Hot Plate	4 No.	Paid to M/s International Scientific Equipments Co. against bill no. 2018-2019/1010 dt June 06, 2018 entered in Stock Register of DBT Star College on page no 16	39,080	16
2.	Chemistry	Non Recurring	Hot Air Oven	1 No.	Paid to M/s Jain Scientific Biotech - GEMC - 511687744074799 dt June 16, 2018 against bill no. GST/2018-19/153. Bill entered in DBT Star College Stock Register on page no. 28.	30,800	28
3.	Chemistry	Non Recurring	Rotavapour	1 No.	Paid to M/s Jain Scientific Biotech - GEMC - 511687791249098 dt June 28, 2018 against bill no. GST/2018-19/188. Bill entered in DBT Star College Stock Register on page no. 30.	48,999	30
4.	Chemistry	Non Recurring	Vacuum Pump	1 No.	Paid to M/s Jain Scientific Biotech - GEMC - 5116877731048139 dt June 28, 2018 against bill no. GST/2018-19/177. Bill entered in DBT Star College Stock Register on page no. 31.	33,900	31
5.	Chemistry	Non Recurring	Muffle Furnace	1 No.	Paid to M/s Jain Scientific Biotech - GEMC - 511687741063777 dt June 28, 2018 against bill no. GST/2018-19/214. Bill entered in DBT Star College Stock Register on page no. 32.	49,350	32
6.	Chemistry	Non Recurring	Heating Mantle with Stirrer	5	Paid to M/s Jain Scientific Biotech - GEMC - 5116877847311786 dt July 04, 2018 against bill no. GST/2018-19/174. Bill entered in DBT Star College Stock Register on page no. 43	42,500	43
7.	Chemistry	Non Recurring	Digital PH Meter	6	Paid to M/s Jain Scientific Biotech - GEMC - 511687706285204 dt Sept 18,	70,200	49

					2018 against bill no. GST/2018-19/337. Bill enetered in DBT Star College Stock Register on page no. 49		
8.	Chemistry	Non Recurring	Digital Conductivity Meter	6	Paid to M/s Jain Scientific Biotech - GEMC - 511687756531717 dt Sept 17, 2018 against bill no. GST/2018-19/336. Bill enetered in DBT Star College Stock Register on page no. 50	88,794	50
9.	Chemistry	Non Recurring	Digital Melting Point Appartus	1	Paid to M/s Jain Scientific Biotech - GEMC - 511687703662115 dt October 30, 2018. Bill enetered in DBT Star College Stock Register on page no. 78	24,000	78
10.	Chemistry	Non Recurring	Lux Meter	2	Paid to M/s Jain Scientific Biotech - GEMC - 511687709399557 dt November 02, 2018. Bill enetered in DBT Star College Stock Register on page no. 79	21,400	79
11.	Chemistry	Non Recurring	Laboratory Chiller	1	Paid to M/s Bhagwati Industries - GEMC - 511687769371719 dt October 30, 2018. Bill enetered in DBT Star College Stock Register on page no. 80.	48,000	80
12.	Chemistry	Non Recurring	Microprocessor Water and Soil Analysis Kit	1	Paid to M/s IGENE LABSERVE Pvt Ltd - GEMC- 511687707612150 dt November 01, 2018. Bill Entered in DBT Star College Stock Register on Page No. 83.	37,900	83
13.	Chemistry	Non Recurring	Pressure Cooker	10	Paid to M/s Shiv Home World, 12-5-11/1, Maruti Moosapet, Hyderabad, Telangana, 500018 against GEMC- 511687722567347 DT March 01, 2019. Entered in DBT Stock Register on page No. 93	8,100	93
14.	Chemistry	Non Recurring	Digital PH Meter	6	M/s Gera Ventures, GEMC- 5116884698844 DT 07/09/2019	79,114	132
15.	Chemistry	Non Recurring	Digital Conductivity Meter	6	M/s Gera Ventures, GEMC- 511687772236309 DT 07/09/2019	1,19,470	133
16.	Chemistry	Non Recurring	Digital Colorimeter(Photometer)	11	M/s Gera Ventures, GEMC- 511687748970559 DT 07/09/2019	1,63,616	134
17.	Chemistry	Non Recurring	Digital Analytical Weighing Balance	1	M/s Mercury Lab Planners, GEMC-511687742761869 DT 07/09/2019	86,702.84	135
Total						9,91,925	

Details of equipment purchased in Department of Electronics

S. No.	Department	Budget Head	Title	Qty	Sub-details	Amount (in Rs.)	Stock Register Page No.
1.	Electronics	Non Recurring	temperature controlled soldering station	1 No.	Paid to M/s Sakshi Enterprises - GEMC - 511687741016806 dt July 18, 2018 against bill no. 407. Bill entered in DBT Star College Stock Register on page no. 29.	4,990.00	29
2.	Electronics	Non Recurring	Universal Embedded Trainer (Advance) Model : UET - A	10	Paid to M/s EXCEL Technologies against bill no. 033 dt. August 10, 2018 towards purchase of Universal Embedded Trainer (Advance) Model : UET - A. Bill entered in DBT Star College Stock Register on page no. 38.	1,23,900.00	38
3.	Electronics	Non Recurring	AVR ATMEGA 16 Daughter Board; Model ET - AVR 16D	10	Paid to M/s EXCEL Technologies against bill no. 033 dt. August 10, 2018 towards purchase of AVR ATMEGA 16 Daughter Board; Model ET - AVR 16D. Bill entered in DBT Star College Stock Register on page no. 38	29,500.00	38
4.	Electronics	Non Recurring	Dual Channel Fibre Optics Communication Training System with on board RS 232 Interface & Dual wavelength Optical power meter Make/Model (Scientech 2502A and 2551)	1 No.	DDU/2018-2019/DBT Star College/Electronics/NR/05 Date: August 08, 2018. M/s Excel technologies, C-92, Sector-63, Noida 210309,UP, India	49,560.00	46
5.	Electronics	Non Recurring	Exp. Setup to study e/m Measurement by Thomson method Make/Model (Nvis 6103)	1 No.	DDU/2018-2019/DBT Star College/Electronics/NR/05 Date: August 08, 2018. M/s Excel technologies, C-92, Sector-63, Noida 210309,UP, India	20,650.00	47
6.	Electronics	Non Recurring	Nexys 4 DDR Boards	10	DDU/2018-2019/DBT Star College/Electronics/NR/	1,55,760.00	48

					05 Date: August 31, 2018 - M/s CoreEL technologies (I) Pvt Ltd. #21, 7th Main, 1ST Block, Koramangala, Bangalore 560034		
7.	Electronics	Non Recurring	ADS Premier University License Bundle 1+1 year term bound license	1	Paid to M/s Agmatel, E-366, II nd Floor, Nirman Vihar, Vikas Marg Delhi 110092 against bill No. DDU/2018-19/1010 dt 11/10/2018 Invoice No. DT_1819_24397 DT 14/12/2018	2,14,760.00	89
8.	Electronics	Non Recurring	EMPro Standard University License Bundle 1+1 year term bound license	1	Paid to M/s Agmatel, E-366, II nd Floor, Nirman Vihar, Vikas Marg Delhi 110092 against bill No. DDU/2018-19/1011 dt 11/10/2018 Invoice No. DT_1819_24384 DT 14/12/2018	1,82,000.00	89
9.	Electronics	Non Recurring	Workstation	1	Paid to Dharam Agencies - GEMC 15530853099892756429 DT Feb 21, 2019	1,94,999.00	114
Total						9,76,119	

Details of equipment purchased in Department of Mathematics

S. No.	Department	Budget Head	Title	Qty	Sub-details	Amount (in Rs.)	Stock Register Page No.
1.	Mathematics	Non Recurring	Printer-HP Laserjet	1 No.	Paid to M/s Cyber Max Enterprises against bill no. CME/F/B-347 dt May 22, 2018 entered in Stock Register of DBT Star College on page no 18	35,900.00	18
2.	Mathematics	Non Recurring	Workstation	1 No.	Paid to M/s Transtek Infoways Pvt Ltd. against bill no. TIPL/1819/G02041 dt June 06, 2018 entered in Stock Register of DBT Star College on page no 19	69,960.00	19
3.	Mathematics	Non Recurring	Computer	6 No.	Paid to M/s Digitech Computer against bill no. DIGI/SALE/121/18-19 dt June 18, 2018	3,53,364.00	20
4.	Mathematics	Non Recurring	Computer	6 No.	Paid to M/s Jintech Solution Ltd against bill No. JSL-00399 dt 10/12/2018	4,43,400.00	88

5.	Mathematics	Non Recurring	Software	10	Paid to M/s Binary Semantics Ltd. Gurgaon against bill no. BSL/1819/1031 dt 29-03-2019. Bill entered in Stock Register on page no. 115.	96,712.00	115
Total						9,99,336	

13. Details of books & journals subscribed from DBT grant.

During 2019-2020

S. No.	Department	Title of the Book	Authors	Publisher	Qty	ISBN
1	Electronics	Modeling and Electrothermal Simulation of SiC Power Devices	Bejoy N Pushpakaran (Texas Tech University, USA) and Stephen B Bayne (Texas Tech University, USA)	World Scientific	1	978-9813237827

During 2018-2019

S. No.	Department	Title of the Book	Authors	Publisher	Qty	ISBN
1.	Chemistry	Environmental Chemistry	Stanley Manahan	CRC Press	1	13-9781498776936
2.	Chemistry	Environmental Chemistry	Jorge G. Lbazez, Margarita Hernandez-Esparza, Carmen Doria-Serrano, Arturo Fregoso-Infante, Mono Mohan Singh	Springer	1	13-9781441920799
3.	Electronics	The AVR Microcontroller and Embedded Systems Using Assembly and C	Muhammad Ali Mazidi, Sarmad Naimi and Sephr Naimi	Pearson India Education Services Ltd.	4	9789332518407
4.	Electronics	Circuit Design and Simulation wuth VHDL	Volnei A. Pedroni	PHI Learning Pvt. Ltd	1	9788120343016
5.	Electronics	Fundamentals of Digital Logic with VHDL Design	Stephan Brown and Zvonko Vranesic	Mc Grw Hill Education (India) Pvt. Ltd.	1	13-9781259025976
6.	Electronics	VERILOG HDL - A Guide to Digital Design and Synthesis IEEE 1364-2001 Complaint	Samir Palnitkar	Pearson India Education Services Ltd.	1	9788177589184
7.	Electronics	Beginner's Guide to Reading Schematics	Stan Gibilisco	Mc Graw Hill Education	1	9780071827782

8.	Electronics	Making Things Move - DIY Mechanisms for Inventors, Hobbyists and Artists	Dustyn Roberts	Mc Graw Hill Education	1	9780071741675
9.	Electronics	Practical Electronics for Inventors	Paul Scherz and Simon Monk	Mc Graw Hill Education	1	9781259587542
10.	Electronics	Programming FPGAs - Getting Started with VERILOG	Simon Monk	Mc Graw Hill Education	1	9781259643767
11.	Electronics	Programming the Raspberry Pi - Getting Started with Python	Simon Monk	Mc Graw Hill Education	1	9781259587405
12.	Electronics	Microwave Circuit Design using Linear and Nonlinear Techniques	George D. Vendelin, Anthony M. Pavio and Ulf R. Rohde	Wiley	1	9788126527885
13.	Electronics	Microwave Engineering	David M. Pozar	Wiley	1	9788126541904
14.	Electronics	Radio Frequency and Microwave Electronics	Matthew M. Radmanesh	Pearson India Education Services Ltd.	1	9788177584011
15.	Electronics	Analog Interfacing to Embedded Microprocessors	Stuart Ball	Newnes	1	0750677236 978075677233
16.	Electronics	Digital Image Processing for Medical Applications	Geoff Dougherty	Cambridge University Press	1	9780521181938
17.	Electronics	Digital Integrated Circuit Design From VLSI Architectures to CMOS Fabrication	Hubert Kaeslin	Cambridge University Press	1	9780521127356
18.	Electronics	Fundamentals of Error-Correcting Codes	W. Cary Huffman and Vera Pless	Cambridge University Press	1	13-9780521613880
19.	Electronics	Fundamentals of Machine Design - Volume 1	Ajeet Singh	Cambridge University Press	1	9781316630402
20.	Electronics	Fundamentals of Machine Design - Volume 2	Ajeet Singh	Cambridge University Press	1	9781316630419
21.	Mathematics	An Introduction to Astronomy and Astrophysics	Pankaj Jain	CRC Press	1	13-9781439885901
22.	Mathematics	Modeling Biological Systems - Principles and Applications	James W. Haefner	Springer	1	13-9780387250113
23.	Mathematics	An Introduction to	Richard Fitzpatrick	Cambridge	1	9781107023819

		Celestial Mechanics		University Press		
24.	Mathematics	Astrophysics Through Computation with Mathematics Support	Brian Koberlein and David Meisel	Cambridge University Press	1	9781107010741
25.	Mathematics	Biology by Numbers - An encouragement to quantitative thinking	Richard F. Burton	Cambridge University Press	1	9780521571562
26.	Mathematics	Textbook on Spherical Astronomy	W. M. Smart and R. M. Green	Cambridge University Press	1	521291801
27.	Mathematics	The Student's Introduction to Mathematica - A Handbook for Precalculus, Calculus and Linear Algebra	Bruence F. Torrence and Eve A. Torrence	Cambridge University Press	1	9780521717892
28.	Mathematics	Bio-Inspired Computing and Networking	Yang Xiao	CRC Press	1	13-9781138115255
29.	Mathematics	A student's Guide to the study, Practice and Tools of modern mathematics	Donald Bindner and Martin Erickson	CRC Press	1	9781439846063
30.	Mathematics	An Introduction to Stellar Astrophysics	Francis Le Blanc	Wiley	1	9780470699560
31.	Mathematics	Beginning R - The Statistical Programming Language	Mark Gardener	Wiley	1	9788126541201
32.	Mathematics	Essential Mathematical Biology	Britton	Springer	1	185233536X
33.	Mathematics	Mathematical Modeling for the Life Sciences	Jacques Istas	Springer	1	9783540253051
34.	Mathematics	Modeling Life	Garfinkel	Springer	1	978331959730

14. Qualitative improvements due to DBT support (5 salient lines):

Publications/Awards during 2019-2020

International Refereed Journals

1. K. Sehra, V. Kumari, M. Gupta, M. Mishra, D. S. Rawal, and M. Saxena, "Optimization of π – Gate AlGaIn/AlN/GaN HEMTs for Low Noise and High Gain Applications," Accepted for Publication in Springer's Nature Silicon, 2020. (Impact Factor: 1.499).

2. A. K. Visvkarma, K. Sehra, R. Laishram, D. S. Rawal, and M. Saxena, "Advances in DC/RF Performance of AlGa_N/Ga_N MIS – HEMT by Incorporating Dual Metal Gate Architecture," Accepted for Publication in IETE Technical Review, 2020. (Impact Factor: 1.845). DOI: 10.1080/02564602.2020.1843555.
3. Neha, V. Kumari, M. Gupta, and M. Saxena, "TCAD-Based Optimization of Field Plate Length & Passivation Layer of AlGa_N/Ga_N HEMT for Higher Cut – Off Frequency & Breakdown Voltage," IETE Technical Review, 2020. (Impact Factor: 1.845). DOI: 10.1080/02564602.2020.1824624

International Conferences

1. K. Sehra, V. Kumari, V. Nath, M. Gupta, and M. Saxena, "Optimization of Asymmetric π – Gate HEMT for Improved Reliability & Frequency Applications," IEEE International Nanoelectronics Conference (INEC), 2019. DOI: 10.1109/INEC.2019.8853857.
2. K. Sehra, V. Kumari, V. Nath, M. Gupta, D. S. Rawal, and M. Saxena, "Comparison of Linearity and Intermodulation Distortion Metrics for T – and Pi – Gate HEMT," IEEE International Conference on Electrical, Electronics and Computer Engineering (UPCON), 2019. DOI: 10.1109/UPCON47278.2019.8980221.
3. K. Sehra, V. Kumari, M. Gupta, M. Mishra, D. S. Rawal, and M. Saxena, "An Asymmetric π – Gate MOSHEMT Architecture for High Frequency Applications," in 7th International Conference on Computers and Devices for Communication (CODEC), 2019. DOI: 10.1007/978-981-15-8366-7_67.
4. A. K. Visvkarma, K. Sehra, R. Laishram, D. S. Rawal, and M. Saxena, "Enhancement in Electrical Characteristics of AlGa_N/Ga_N HEMT Using Gate Engineered Dielectric Pocket Dual Metal Gate," in 7th International Conference on Computers and Devices for Communication (CODEC), 2019. DOI:1007/978-981-15-8366-7_54.
5. A. Nayak, V. Kumari, M. Gupta, and M. Saxena, "Comparative Study of AlGa_N/Ga_N HEMT and MOS-HEMT Under Positive Gate Bias – Induced Stress," in 7th International Conference on Computers and Devices for Communication (CODEC), 2019. DOI: 10.1007/978-981-15-8366-7_74.
6. S. Das, V. Kumari, M. Gupta, and M. Saxena, "Gate Leakage Current Assessment of AlGa_N/Ga_N HEMT with AlN Cap Layer," in 7th International Conference on Computers and Devices for Communication (CODEC), 2019. DOI: 10.1007/978-981-15-8366-7_68
7. A. Mishra, K. Sehra, Sahil, A. Joshi, P. Kasturi, and M. Saxena, "Memristor Based Cryptographic Information Processing for Secured Communication Systems," in 5th IEEE International Conference on Devices, Circuits and Systems (ICDCS), pp. 167 – 171, 2020. DOI: 10.1109/ICDCS48716.2020.243573.
8. K. Sehra, V. Kumari, M. Gupta, M. Mishra, D. S. Rawal and M. Saxena, "TCAD Investigation of Gate - Lag Measurements on Conventional and π - Gate AlGa_N/Ga_N HEMTs," in 20th IEEE International Conference on Nanotechnology (IEEE-NANO), Montreal, QC, Canada, pp. 128-133, 2020. DOI: 10.1109/NANO47656.2020.9183484. (Full length article to be published in IEEE Transactions on Nanotechnology.)
9. Memristor Based Cryptographic Information Processing for Secured Communication Systems, Ashutosh Mishra; Khushwant Sehra; Sahil Sahil; Ajay Joshi; Poonam Kasturi; Manoj Saxena, 2020 5th International Conference on Devices, Circuits and Systems (ICDCS, Date of Conference: 5-6 March 2020, ISBN Information: Electronic ISBN:978-1-7281-6368-0; Print on Demand(PoD) ISBN:978-1-7281-6369-7; ISSN Information: Electronic ISSN: 2644-1802; Print on Demand(PoD) ISSN: 2470-847X DOI: [10.1109/ICDCS48716.2020.243573](https://doi.org/10.1109/ICDCS48716.2020.243573)

Abstracts/Posters in International Workshops

1. K. Sehra, V. Kumari, M. Gupta, M. Mishra, D. S. Rawal, and M. Saxena, "Reliability Assessment of Dual Material π – Gate AlGa_N/Ga_N HEMT," in XXth International Workshop on Physics of Semiconductor Devices (IWPSD), 2019.
2. R. S. Kumar, R. Narang, M. Gupta, and M. Saxena, "Investigation on influence of inclusion of Ferroelectric insulation layer on performance parameters of MOSFET and TFET configurations," in XXth International Workshop on Physics of Semiconductor Devices (IWPSD), 2019.

3. S. Mondal, R. Narang, M. Gupta, and M. Saxena, "Modeling and Simulation Study of Different FET and TFET Architectures for Bio – Sensing and Gas – Sensing Applications," in XXth International Workshop on Physics of Semiconductor Devices (IWPSD), 2019.
4. S. Raut, K. Sehra, M. Mishra, D. S. Rawal, M. Gupta, and M. Saxena, "Investigation of Single Event Transients on Buffer-Free GaN-on-SiC HEMT," Accepted for Poster Presentation in IEEE International Conference on Emerging Electronics, 2020. Full length article to be published in IEEE Xplore.
5. FIRST PRIZE awarded by International Society for Microbial Ecology (ISME) to Poster entitled: PCR based detection of Phenol degrading bacteria in wastewater samples collected from a thermal power plant in Bihar (Faculty: Dr. Shailly Anand & Dr. Renu Solanki; Students: Rupam Kumari, Shallu, Nishi Pant, Vaibhav Saini, Adrija Mohanta). Another Poster entitled "Isolation and Identification of Phenol degrading bacterial isolates from wastewater samples collected from a coal based thermal power plant" was presented (Faculty: Dr. Shailly Anand & Dr. Renu Solanki; Students: Mansi Jangra, Mukul Rohilla, Vishlesh Kotarya, Nilamadhab Senapati, Manisha Pal) presented at: International Conference entitled "Current Trends in Microbiology and Microbiome Research: A Global Perspective (CTM 2019) organized by Indian Network for Soil Contamination Research and MDU at Maharshi Dayanand University, Rohtak, Haryana. (11-12 October, 2019)



15. Problems faced, if any, in implementation of the programme and utilization of DBT grant (in two-three lines)

- Due to COVID 19, the some of the bills pertaining to the activities held during April 2019 – March 2020 could not processed and therefore, audited balance sheet and utilization certificate is yet to be prepared.