



सत्यमव जयत Department of Science and Technology Ministry of Science and Technology Government of India

DST-Fist Center, MIET Sponsored by Department of Science and Technology, Ministry of Science & Technology, Govt. of India.



DST-FIST Center Inauguration (2019-2020)

बायोटेक्नोलॉजी के छात्रों को रिसर्च के लिए मिली डीएसटी एफआईएसटी एडवांस रिसर्च लैब

बुलन्द वाणी 🜒 संवाददाता

मेरठ। विज्ञान और प्रौद्योगिकी विभाग भारत सरकार द्वारा विज्ञान एवं तकनीक के क्षेत्र में अनुसंधान और विकास को बढ़ावा देने के उद्देश्य से एडवांस बायोटेक्नोलॉजी इंस्ट्रमेंट रिसर्च लैब का उद्घाटन एमआईईटी में किया गया। डीएसटी एफआईएसटी एडवांस रिसर्च लैब का उद्घाटन एमआईईटी ग्रुप के चेयरमैन विष्णु शरण, वाइस चेयरमैन पुनीत अग्रवाल, डायरेक्टर डॉ मयंक गर्ग, डीन एकेडमिक डॉ डीके शर्मा ने संयुक्त रूप से फीता काटकर किया।

तहत 50 लाख रुपए का अनुदान विकास गतिविधियों को बढावा देने इसमें शिक्षकों, शोधार्थियों समेत दिया जाएग।

बायो टेक्नोलॉजी विभाग के शैक्षणिक संस्थानों में नई प्रतिभाओं को कार्य से जुड़ने के लिए आमंत्रित किया विभागाध्यक्ष डॉ नितिन शर्मा ने बताया आकर्षित करने के लिए बुनियादी गया है। इसके लिए छात्रों के पास की विज्ञान और प्रौद्योगिकी के ढाँचा और सक्षम सुविधाएं प्रदान स्वस्थ्य, एनर्जी व मैटिरियल पर शोध बुनियादी ढांचे में सुधार के लिए करना है। न्यूनतम रिसर्च एंड से जुड़ा कोई प्रोजेक्ट हो तो वह भी बुनियादी ढांचे में सुधार के लिए करना है। न्यूनतम रिसर्च एंड से जुड़ा कोई प्रोजेक्ट हो तो वह भी डीएसटी द्वारा एमआईईटी के डेवलपमेंट उपयोगी इंस्ट्रमेंट भारत यहां पर आकर काम कर सकते हैं। बायोटेक्नोलॉजी विभाग को योजना के सरकार के अनुदान द्वारा खरीदे गए हैं. उन्होंने बताया कि इसके साथ ही यंग जिससे कैंसर जैसी गंभीर बीमारियों पर रिसर्चर कार्यक्रम भी छात्रों के लिए किया गया। इस योजना का उद्देश्य नए रिसर्च करने में मदद मिलेगी। शोध के जल्द शुरू किया जाएगा। साथ ही और उभरते क्षेत्रों में अनुसंधान और प्रति छात्रों का रूझान बढ़ाने के लिए छात्रों का नाम भी रिसर्च जर्नल्स में

और विश्वविद्यालयों और अन्य एमटेक व बीटेक छात्रों को रिसर्च



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INTRODUCTION

- DST-Fist Center, MIET, Sponsored by the Ministry of Science & Technology, Govt. of India established 19th Oct, 2019.
- This center is focused mainly on Translational research: Drug discovery, Cancer stem cell targeted drug discovery, Tissue engineering, Biomaterial, Stem cell, in vitro organ development, and Cruelty-free drug testing by exploring advanced techniques of 3D cell culture model

OBJECTIVES

- The Scheme "Fund for Improvement of S&T Infrastructure (FIST)" is Sponsored By the Department of Science & Technology (DST), Govt. of India.
- To provide basic infrastructure and enabling facilities for promoting R&D activities in new and emerging areas.

To attract fresh talents in universities and other educational institutions.

NATURE OF SUPPORT

The Scheme will provide optimal infrastructure facilities for post-graduate and higher research, such as, renovation of existing laboratory space, but no fresh Constructions.

- To modernization of laboratories involved in PG and Higher Research.
 - By acquisition of essential equipment, up-gradation of existing facilities, networking &computational facilities including software &databases, scientific & technical books (no journals)

The facilities provided under the Program are intended to support the efforts of the Department as a whole or a number of faculty members in the Department.

TEAM MEMBERS ALONG WITH DETAILS

 Prof. (Dr.) Sanjay Kr. Singh
 Principal Investigator, DST-FIST Center, MIET

Email: <u>directormiet@miet.ac.in</u> Contact No:9917103999

2. Prof. Eliza Chakraborty HOD DST-Fist & Scientist

Professor, Department of Biotechnology

MIET, Meerut.

Email: eliza.chakraborty@miet.ac.in Contact No:7060857697





TEAM MEMBERS ALONG WITH DETAILS

3. Dr. Anurag Chaudhary

Professor, Department of Pharmacy, MIET

Scientist, DST-FIST Center, MIET

Email: <u>anurag.chaudhary@miet.ac.in</u>

Contact No: 8077715655

4. Ms. Deepika Pal Scientist

DST-FIST Center, MIET

Email: deepika.pal@miet.ac.in

Contact No: 6395098741





LIST OF MAJOR EQUIPMENT

S.N	Name of Equipment	Cat No.	Cost	Working
0.				Status
1.	BD Biosciences Accuri	C6 Plus	11,27,000/-	Working
	C6 Plus Flow			
	Cytometer			
2.	Multiskan Sky High	51119700DP	30,09,000/-	Working
	Microplate			
	Spectrophotometer			
3.	Centurion Scientific	CS5700+	4,39909/-	Working
	CS5700+ Gas			
	Chromatography			
4		2111		XX 7 1 •
4.	CO2 Incubator	3111	5,60,619/-	Working
	(Thermo Fisher			
	Scientific)			

1. BD BIOSCIENCES ACCURI C6 PLUS FLOW CYTOMETER

Material 660517 HSB Code 90278099 Bath No. 9347671 Application Trainer 1. Mr. Vishal Garg- 8800798333 2. 2. Mr. Anjan Ghosh-8879558596

Applications- Flow cytometry is a powerful tool that has applications in multiple disciplines such as immunology,

virology, molecular biology, cancer biology, and infectious disease monitoring.



2. THERMO SCIENTIFIC MULTISKAN SKY HIGH MICROPLATE SPECTROPHOTOMETER

Ser No. 1530801076C HSN/SAC Code 9027 Part No. / Cat No. 51119700DP Application Trainer-

Dr. Anil Kumar- 8860318679



Applications-

Virtually any photometric research application ELISA

Cell Cytotoxicity

DNA, RNA, and Protein analysis

Turbidity measurements

3. CENTURION SCIENTIFIC CS5700+ GAS CHROMATOGRAPHY

Model 5700

HSN CODE 9027

Application Trainer

Mr. Praveen Sharma- 9999429898

Applications- Gas-liquid chromatography (GLC) is a commonly used method for lipid analysis. Although marine fatty acids are generally derivatized by transesterification, saponification, and extraction followed by derivatization to fatty acid methyl esters (FAMEs) may be used.



4. THERMO SCIENTIFIC FORMA SERIES II WATER JACKET CO2 INCUBATOR

Ser No. 300300901 HSN/SAC Code 81198990 Part No./Cat No. 3111 Application Trainer- Mr. Harish 9310333125

Applications- CO₂ incubators are most frequently used in medical research and in the research Laboratories. However, incubators are also used in areas where cells need to be grown in sterile conditions.



ROAD MAP

- 1. Accusation of High-class Instruments.
- 2. Easy access to advanced technology.
- Upgrading the R&D Facility for faculty, P.G Students & Researchers. (Awareness programs like International Inaugural Lecture Series (2020-2021) Hosted By DST- Fist Center, MIET, Meerut.
- 4. Student tanning conducted on advanced cell culture and Lab safety.
- 5. Through this central facility to students (Directly and Indirectly), nearby colleges and Industries are taking advantage of this facility.
- 6. Foreign Collaboration and central government funding attracted. Viz. Idea Lab, AIC, etc.

ACTIVITIES/EVENTS CONDUCTED

- I. Seminar / Expert Talk:
- 1. International Lecture Series

Online International Inaugural Lecture Series (2020-2021)

- Topic: Health, Environment & Laboratory
- Hosted By DST- Fist Center, MIET, Meerut
- Date: 19th Dec, 2020, 16th Jan. 2021 and 20th Feb. 2021

Online International Inaugural Lecture Series (2020- 2021) Hosted By DST- Fist Center, MIET, Meerut



Online International Inaugural Lecture Series 20-21

Topics: Health, Environment & Laboratory Safety

ABOUT THE INSTITUTE

Meent Institute of Engineering & Technology (MET) has officially been ranked as the 4th best Engineering College in Uttar Pradesh by AKTU-MET rands tailest among all other self-financed engineering institutions in northern India. It not only holds the prestrajous position of being one of the best & oldeet (Established in 1997) institutions that caterots to education in the field of Engineering and Technology bat also ensures that each student emerges out compresent enough to hold a dynamic image of his own after the completion of his or her stint at MET.

ABOUT THE DST-FIST CENTRE

The Department of Science and Technology (DST) is a department within the Ministry of Science and Technology in India. It was established in May 1071 to promite from areas of science and technology and to play the role of a nodal department for organizing coordinating and promoting Scientific and Technological activities in the course of the science and proved scientific projects in India! It also supports various researchers in India to attend conferences abroad and to go for experimental works. A new science "Fund for Improvement of S&E1647nstructure in Universities and Higher Educational Institutions (FIST)" was launched in 2000-2001 to rebuild the Science and Technology Infrastructure in India; solely dedicated to R&D in various fields:

INTRODUCTION TO INAUGURAL LECTURE SERIES

Inaugural Lecture Series represent an essential component of the public event programs, an opportunity to engage with audience with a broader interest in their research, including funders and decision makers from government, academia and industry. They also help create a wider awareness for the benefits of the University's teaching and research. This inaugural Lecture Series is a multidisciplinary event open for scientists, faculties, and students from the field of biotechnology, translational medicine, nanobiotechnology, pharmacy, dentistry, biomedical instrumentation, computational biology including Artificial Intelligence in healthcare and industrial Sector Recently, Meerut Institute of Engineering & Technology has established the first DST-FIST Centre in North India. This is the first step towards research and development for the welfare of the society.



Three Sessions Free Registration

Dair &	Title	Speakers			
NUMBER OF STREET	"Advincement in Cancer Therapeutles"	Dr. Vicky Yamamoto Cencer Scientist, Department of Obseryrgology Resistent Director of Soundy Far Brisin Mupping & Throngologies (SMM) Los Angeles, CA, USA			
Notice and the second	"COVID-19 and UV Record Storellization Units"	Dr. Ambartah Kuman Ansenseta Protesser Desenseta Protesser Instan instrume of Technology, Borboy			
NAL OF STREET	"Bendagement of Next Constraints OMV's flavor Shigela Vaccionity the Way of Middlefinition and approaches"	Dr. Hemanta Koley Schenisti & J Orgody Blevote Brasser Besterindey Polaret Instante of Enderindey Press Thesease (Eder) College			
states are	"Franciplag Infections World Wate Instanting Romar COVUD- 19 - Challenges of Sampling Infections Agents From Air and Northcor",	Dr. Atin Adhikari Masaciata Prefasor of Georgia Bouthern Useversity, USA			
an an an	"Developerand Matrix for Tensor Tagasoring"	Dr. Narayan Chandra Mishra Pro Mas Henck Hathas, Germany) Associate Proteins and Chaines Diff. Basement of Polymer and Process Degenerating Index to table of Chances Degenerating			
COLUMN THE PARTY OF	"Hackenied & Maleralar Disgonsis of Covid-19"	Dr. Buchtos Mukherjes Associate Professor Department of Dischereity AMG, Chopel			
PARTY NAME	"Badaign User-Concerd Innovation"	Dr. Bebbio Lim Teodoresou MD (Usernity of Arwand), Abruiday Physikas Machadardh General Hanakis, Facalas Hanglikas, Reported Balacci Facalas Hanglikas, Reported Balacci			
Charmer of the second second	Tomative Title : "Early resonant of Pollscher and Categor".	Dr. Sutapa Mukhorjee Acoudenic Ge-artikusio Department el Enancemental Cascongenesis & Traikolegy Cristangun Heisrad Cascer Institute, Kokkish			
Children and Shi	Touristive Title : "Laboratory Hinsefety"	Or. Nikhil B. Ghate Researcher Roms Componiensity Cancer Center Rock Rehoot of Walkings University of Doublers California			

DST-FIST Centre, (Ministry of Science & Technology, Govt. of India), Meerut Institute of Engineering & Technology, Meerut Contact Information E-mail : eliza.chakraborty@miet.ac.in Cell : +91 - 7060 857697



DST-FIST CENTER, MEERUT INSTITUTE OF ENGINEERING AND TECHNOLOGY, MEERUT



Department of Science and Technology Government of India

CERTIFICATE OF PARTICIPATION

This is to certify that Dr./Mr./Ms. Istuti Gupta

of Meerut Institute of Engineering and Technology

has participated in the Online International Inaugural Lecture Series 2020-21 entitled "Health, Environment and Laboratory Safety" organized by DST-FIST Center, Meerut Institute of Engineering and Technology, Meerut, India in association with Department of Science and Technology, Government of India held on 19th December 2020, 16th January 2021 and 20th February 2021.

E. Chakraborty

Organizing Secretary Dr. Eliza Chakraborty Head of the DST-Fist Center Prof-DBT, MIET, Meerut

Coordinator Dr. Nitin Sharma Director, Department of Pharmaceutical Technology HOD-DBT, MIET, Meerut

Coordinator Dr. Chandrabhan Seniya Asst. Prof-DBT, MIET, Meerut



Principal Investigator of DST-fist Dr. Mayank Garg Executive Director, MIET, Meerut

2. GUEST LECTURE

Topic: "3D Bioprinting, Bioinks, and Alternatives of Animal Models"

Presenter: Dr. Prashant Singh Chauhan, Ph.D

Designation: Strategic Business Partner, ATCG India

Discussion on: Introduction to 3D Bioprinting Technology

Applications and Innovations in Biomedical

Research Future

Prospects and Developments.

Date- Monday, 4th Dec 2023.

3. AWARENESS PROGRAMMES

- 1. Awareness Programme on Biosafety and Lab Safety Guidelines.
- Date- 1.03.2023 Time- 2:00 pm- 4:00 pm
- Students: B. Tech 3rd yr Students
- 2. Biosafety and Lab Safety Guidelines.
- Date- 25.08.2023
- Students: B. Tech (BT) 3rd yr Students
- 3. Lab Safety Guidelines and Lab Visit

Date- 05.09.2023

Students: B. Tech (BT) 3rd yr Students

1. Name of Instrument: BD Accuri C6 Plus Flow Cytometry

Installation date: 05-10-2020

Installed by: Mr. Anjan Ghosh (8879558596)

In the presence of: 1. Dr. Nitin Sharma

- 2. Dr. Chandrabhan Seniya
- 3. Dr. Anuj Kumar Singh
- 4. Ms. Nitika Vats
- 6. Ms. Pinky Kothari

Trained by: Mr. Anjan Ghosh (8879558596)

- i. Training I: 05-10-2020
 - 1. Dr. Eliza Chakraborty
 - 2. Dr. Anuj Kumar Singh

ii. Training II: 06-10-2021

- 1. Dr. Eliza Chakraborty
- 2. Dr. Anuj Kumar Singh
- 3. Dr. Megha Tyagi

2. Name of Instrument: Multiskan Sky Spectrophotometer Installation date: 10-07-2020 Installed by: Aman Arora (9715888420) In the presence of: 1. Dr. Eliza Chakraborty 2. Dr. Anuj Kumar Singh

Trained by: I. Dr. Anil Kumar (8860318679) Trained to: 1. Dr. Eliza Chakraborty 2. Ms. Shreya Agarawal

3. Ms. Deepika Pal

Training II. 9 to 10 Dec-2022

- Trained by: Ms. Deepika Pal (7452824433)
- Trained to: 1. Dr. Anurag Chaudhary
 - 2. Dr. Alka Sagar
 - 3. Dr. Sonia Sharma
 - 4. Dr. Divya Chaudhary
 - 5. Mr. Abhinav Singh
 - 6. Ms. Garima
 - 7. Ms. Jyoti
 - 8. Dr. Alimuddin Saif
 - 9. Mr. Ankit Chaudhary
 - 10. Mr. Nilay K Nandi
 - 11. Dr. Prabhash Nath Tripathi
 - 12. Dr. Shweta Dumoga

3. Name of Instrument: Gas Chromatography Installation date: 13-10-2020 Installed by: Mr. Abhishek Singh (8882311727) In presence of: 1.Dr. Avadhesh Singh Pundir

Trained by: Mr. Abhishek Singh (8882311727) Trained on: I 16-12-2022 Trained to: 1. Dr. Udai Pratap Singh

- 2. Dr. Anurag Chaudhary
- 3. Dr. Neha Singh
- 4. Dr. Prabhash Nath Tripathi
- 5. Ms. Deepika Pal

I. Patents:

- 1. Patent Application No 2023310470 REDENTIALS morix in 3D cell culture July 2023 (online) and Published
- 2. Patent Application No 202331047408 (In-vitro fusion Bio-matrix coated on paper), July 2023 (online) and Published.
- 3. Patent Application No 202131017742 (A Bio-Matrix Obtained from Astragalus Gummifer (Gond Katira) Coating Cell Culture to Sustain Growth in Animal Cell Culture), April 2021 (online) and Published
- 4. Patent Application No 202111018396 (A Bio-Matrix Composition Obtained from Astragalus Gummifer (Gond Katira) To Sustain Growth in Animal Cell Culture), April 2021 (online) and Published.
- 5. Patent Application No 202031040945 (A Potential Natural Bio-Matrix from Aloe Vera Gel for Sustaining Growth of Adherent Cells in Animal Cell Culture), Sept. 2020 (online) and Published.

6. Patent Application No 202031040946 (A Bio-Matrix Composition from Linum usitatissimum to Sustain Growth in Animal Cell Culture and Process of Preparing the Same), Sept. 2020 (online) and Published. • B.Tech Students 2 Patent filled (2023)

Portable Diagnostic tool

Alternative of Animal Model





Fig 1. Observation of L929 cell line growth on Paper Matrix at 20X under the IX73 Olympus Microscope.

Fig 2. (.4%) NDEA drug, at One (1) hour Observation of L929 cell line growth on Paper Matrix at 20X under the IX73 Olympus Microscope.

Fig 3. Observation of L929 cell Spheroid Formation with 1X 73 Olympus microscope under 20X

Fig 4. (1%) NDEA drug, at 1 hr. observation of L929 cell line growth of *(AstragalusGummifer)* Fusion Matrix at 20X under the IX73 Olympus Microscope.

6 Patents Pending (Outcome of B.Tech Projects)

- II. Papers Published:
- 1. Hydrogel-based tissue engineering and its future applications in personalized disease modeling and regenerative therapy Journal -Springer Nature, Authors Name: Shikha Chaudhary & Eliza Chakraborty <u>https://doi.org/10.1186/s43088-021-</u> <u>00172-1</u>
- 2. Editorial: Advancement in Cancer Stem Cell Biology and Precision Medicine. Journal - Frontiers, Authors Name: Nikhil Baban Ghate, Vicky Yamamoto, and Eliza Chakraborty. <u>https://doi.org/10.3389/fcell.2022.890129</u>
- 3. Optimizing aseptic and serum milieu for the isolation of human whole umbilical cord tissue-derived mesenchymal stem cells. Journal Springer Nature, Authors Name: Shikha Chaudhary, Suyash Sharma, Jeswin John, Namrata Tyagi, Kunal Mishra & Yogita Saragade. <u>https://doi.org/10.1186/s43088-022-00308</u>
- 4. Studies on Optimization of Parameters for Extraction of Total Phenolic Content From Terminalia Arjuna". Authors Name- Kunal Kapoor, Deepika Pal, Vijay Rajesh Andaramala, Sandeep Sirohi, CHNOLOGY And Surya Prakash 2022. https://doi.org/10.47750/ppr.2022.13.S10.261

- 5. Potential role of Hydrogel and its future applications in *in-vitro* organ development. Authors Name- Adesh Nautiyal, Riya Tyagi, Deepika Pal and Eliza Chakraborty. May 2023 <u>https://www.ijnrd.org/papers/IJNRD2305644.pdf</u>
- Design, Synthesis, Anti-cancer activities, and Comparative molecular docking studies of Novel class of 7-azaindole analogs as potent PARP-1 inhibitors. Authors Name- Neha Sharma, Anurag Chaudhary, Monika Sachdeva. Doi:10.5530/ijper.58.2.70
- 7. Stemformatics and its potential role in future translational applications in CRISPR Cas 9 Gene with GATA-1,2. Authors- Deepika Pal, Utkarsh Tyagi, Udit Narayan Sharma and Eliza Chakraborty (2024). <u>https://ijcrt.org/viewfulltext.php?&p_id=IJCRT2403311</u>
- "Biomaterial: Fascinating Reservoir for Future Stem Cell-Based Therapy" Authors- Deepika Pal ^{1, 2*}, Ayushi Chauhan^{1*}, Vanshika Rana^{1*}, Archit Mohan Shukla^{1*}Akshaya Prakash^{1*}, Drishti Dhall^{1*}, Raxit Tyagi^{1*}and Eliza Chakraborty^{1, 2**} (2024). <u>https://doi.org/10.5281/zenodo.10953587</u>.

III. B. Tech Student' s Book Published:

Eliza Chakraborty et.al, Book title: Blueprint of Covid-19 Pandemic, Nov 2020, Academic Publishing, Germany, ISBN No: 978-6203-02798-3



Eliza Chakraborty Rajshree Chakraborty Shivi Sharma

Blueprint of Covid-19 Pandemic Status of Covid-19 Pandemic,2020

The Contributors are Udit Narayan Sharma, Taniya, Zaiba Firoz, Tushar Gupta, Kunal Kapoor, Anju Gond. Asiwaraya Sharma and Rachan Ran I from Miet. Miss Shiri Sharma and Shefali Maheshwari from Hindustan Collego of Science & Technology, I also thank Dr. Rajashree Chakraborty (KiT) University, School of Biotechnology) for her support.





IV. Conferences:

- Invited lecture on Stem Cells and Tissue..... IABSCON 2020 Advances in Biomedical Research from Basics to Translation 9th annual International Conference of Indian Academy of Biomedical Sciences, 27th to 29th Feb 2020, D.Y.Patil Medical College, at Sayaji Hotel, Kolhapur Maharashtra.
- 2. Invited lecture on "Pandemic Aftermath for Betterment of Human Life" In An International Conference on Pandemic and Its Aftermath, 8 th-10th Nov 2020 organized By the Department of Chemistry, Christ Church College, Kanpur
- 3. Indian Academy of Biomedical Sciences, IABSCON, (7 8 May 2022) organized by The Department of Biochemistry, King George Medical University, Lucknow, and Era University, Lucknow. Title: Recent Trends in Biomedical Research: Current Challenges & Future Prospects. Authors Name: Sanyam Taneja, Anjali Verma, Shweta Chaudhary, Deepika Pal, and Eliza Chakraborty.

- 4. Challenges & opportunities in Food, Pharma, and Biotechnology, (15-17 Sep 2022) organized by Dr. A.P.J Abdul Kalam Technical University, Lucknow, and Seth Vishambhar Nath Group of Educational Institute, Lucknow. Title: Inhibition of In vitro Rhipicephalus Microplus Infection by Exploiting Mahua Longifolia Extracts, Author name: Deepika Pal, Eliza Chakraborty & Jaydip Parmar.
- 5. 108th Indian Science Congress (3-7 Jan 2023) organized by RTM Nagpur University, NagpurTitle: The Role of Biomarkers, Stem Cell and Stemformatics in Modern Translational Medicine. Author Name: Chandrabhan Seniya and Eliza Chakraborty*
- 6. The potential of indigenous medicinal plant extracts for Acaricidal activity against R.microplus under in-vitro conditions. "3rd ICMSE-2023 Organized by NIT- Jalandhar 2023. Authors Name- Deepika Pal, Jaydip Parmar, Sandeep Sirohi, and Eliza Chakraborty
- 7. Silver Nanoparticles synthesized from the seed of Myristica fragrans extracts Optimization, Characterization, and antibacterial activity. "3rd ICMSE-2023 Organized by NIT- Jalandhar 2023.
- 8. Invited as Resource person in one day Online Workshop on "Biological Waste disposal" Jointly by the Department of Botany, Department of Zoology, and Department of Chemistry under the DBT Star College Scheme of Durgapur Government College on 4th June 2024

V. Thesis Submitted:

i. Graduation Thesis (B. Tech)
1. Title: "Different Biomatrix-Based Organ Regeneration and Tissue Engineering"
Student Name: Kunal Kapoor and Tushar Gupta (2017-2021)

2. Title: Application of Biomatrix in *in-vitro* Tissue Engineering Student Name: Taniya and Udit Narayan Sharma (2017-2021)

3. Title: "Future Application of Hydrogel-based Matrix in 3D Cell Culture" Student Name: Sanyam Taneja and Anjali Verma (2018-2022)

4. Effect of different cryogenic conditions on biomatrix-based in-vitro screening models. Students name: Archit Mohan Shukla, Ayushi Chauhan and Vanshika Rana (2019-2023)

- V. Thesis Submitted:
- ii. Post-Graduation Thesis
- 1. M. Tech Thesis Title: "Evaluation of the Acaricidal Activity of Indigenous Medicinal Plants Extracts against Cattle Ticks under *in-vitro* Condition"

Student Name: Deepika Pal

2. MSc Thesis Title: "Explore Plant Based Biomatrix to Develop vitro Screening Model and its Future Applications as an Alternative to Animal Model

Student Name: Shweta Chaudhary

3. Title: " In Silico Screening of Flavonoids by SARS CoV-2& its Future Applications"

Student Name: Ms. Vandita Baliyan

- 4. Title: Exploring plant-based biomatrix to develop *in-vitro* drug screening model with mammalian cancer cell line.
 Student Name: Mr. Adesh Nautiyal
- 5. Title: Exploring fusion matrix-based in-vitro drug screening model and its future applications as an alternative, animal models.

Ctudent nome Dire Treni

Ph.D thesis work going on 2021- Going on Ms. Shivi Sharma. 2024 One M.Sc student project going on in 2024. Three students B.Tech Project going on 2024 10PG (M.Pharm, M.Sc.) projects going on.

Students Placement direct from DST-Fist Center, MIET.

1. Kunal Kapoor M. Tech 1st year (2021)

Appointed as Senior Officer at Indian Immunologicals Ltd., Telangana, India.

- 2. Ayushi Chauhan B. Tech final year (2023)
 - Appointed as Trainee at the Diagnostic division at J.Mitra & Co. Pvt. Ltd., New Delhi.
- 3. Vanshika Rana B. Tech Final year (2023)
 - Appointed as Trainee at the Diagnostic division at J.Mitra & Co. Pvt. Ltd., New Delhi.
- 4. Adesh Nautiyal M.Sc. Final year (2023)
 - Appointed as Executive in QC Department at J.Mitra & Co. Pvt. Ltd., New Delhi.









MEERUT INSTITUTE OF ENGINEER

AWARDS

1. BHARAT GAURAV PURASKAR

2. BEST EDUCATIONIST AWARD



Media coverage

DST-FIST Center Inauguration (2019-2020)

बायोटेक्नोलॉजी के छात्रों को रिसर्च के लिए मिली डीएसटी एफआईएसटी एडवांस रिसर्च लैब

बुलन्द वाणी 🛭 संवाददाता

मेरठ। विज्ञान और प्रौद्योगिकी विभाग भारत सरकार द्वारा विज्ञान एवं तकनीक के क्षेत्र में अनुसंधान और विकास को बढ़ावा देने के उद्देश्य से एडवांस बायोटेक्नोलॉजी इंस्ट्रमेंट रेसर्च लैब का उद्घाटन एमआईईटी में किया गया। डीएसटी एफआईएसटी एडवांस रिसर्च लैब का उद्घाटन एमआईईटी ग्रुप के चेयरमैन विष्णु शरण, वाइस चेयरमैन पुनीत अग्रवाल, डायरेक्टर डॉ मयंक गर्ग, डीन एकेडमिक डॉ डीके शर्मा ने संयुक्त रूप से फीता काटकर किया।

डीएसटी द्वारा एमआईईटी के बायोटेक्नोलॉजी विभाग को योजना के तहत 50 लाख रुपए का अनुदान विकास गतिविधियों को बढावा देने इसमें शिक्षकों. शोधार्थियों समेत दिया जाएगा।



और विश्वविद्यालयों और अन्य एमटेक व बीटेक छात्रों को रिसर्च बायो टेक्नोलॉजी विभाग के शैक्षणिक संस्थानों में नई प्रतिभाओं को विभागाध्यक्ष डॉ नितिन शर्मा ने बताया आकर्षित करने के लिए बुनियादी गया है। इसके लिए छात्रों के पास की विज्ञान और प्रौद्योगिकी के ढाँचा और सक्षम सुविधाएं प्रदान स्वस्थ्य, एनर्जी व मैटिरियल पर शोध बुनियादी ढांचे में सुधार के लिए करना है। न्यूनतम रिसर्च एंड से जुड़ा कोई प्रोजेक्ट हो तो वह भी करना है। न्यूनतम रिसर्च एंड से जुड़ा कोई प्रोजेक्ट हो तो वह भी डेवलपमेंट उपयोगी इंस्ट्रमेंट भारत यहां पर आकर काम कर सकते हैं। सरकार के अनुदान द्वारा खरीदे गए हैं, जिससे कैंसर जैसी गंभीर बीमारियों पर रिसर्चर कार्यक्रम भी छात्रों के लिए किया गया। इस योजना का उद्देश्य नए रिसर्च करने में मदद मिलेगी। शोध के और उभरते क्षेत्रों में अनुसंधान और प्रति छात्रों का रूझान बढ़ाने के लिए

कार्य से जुड़ने के लिए आमंत्रित किया उन्होंने बताया कि इसके साथ ही यंग जल्द शुरू किया जाएगा। साथ ही छात्रों का नाम भी रिसर्च जर्नल्स में



INDUSTRIAL TALK

Discussion on: Introduction to 3D Bioprinting Technology Applications and Innovations in Biomedical Research Future Prospects and Developments. (2023) Presenter: Dr. Prashant Singh Chauhan, Ph.D

Designation: Strategic Business Partner, ATCG India.



Industrial Talk (Press Released)

थी डी बायोप्रिंटिंग से अंग प्रत्यारोपण के लिए अंगों की कमी की समस्या का होगा हल : डॉ प्रशांत सिंह चौहान

एमआईईटी में नवीनतम तकनीक पर विशेष व्याख्यान

सियासत ब्यूरो/मेरठ

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एमआईईटी के बायोटेक्नोलॉजी विभाग ने 3डी बायोप्रिंटिंग जैसी नवीनतम तकनीक पर व्याख्यान का आयोजन किया गया। एटीजीसी बायोटेक प्राइवेट लिमिटेड कंपनी से डॉ प्रशांत सिंह चौहान ने कहा की उडी बायोप्रिंटिंग एक ऐसी तकनीक है जिसके जरिए बावोइंक और बायोमटेरियल के जरिए जैविक संरचनाएं और अंग बनाए जा सकते हैं। ये संरचनाएं बिल्कल शरीर के प्राकृतिक अंगों की तरह काम करने में सक्षम हैं। इस तकनीक का उपयोग करके शरीर के विभिन्न ऊतकों का पनर्निर्माण किया जा सकता है।



उतकों से संबंधित विकारों को ठीक उपयोग प्रत्यारोपण के लिए अंगों की प्रत्यारोपण के लिए अंगों की कमी की अंकेश पांडेय, डॉ. नीतिका वरस आदि करने में सफलतापर्वक किया जा रहा कमी की समस्या को हल करना है।हर समस्या का सामना करना पड रहा है। उपस्थित रहे।

ऐसे में यह सिस्टम जल्द ही इस समस्या का एक बहुत अच्छा विकल्प साबित होगा।

साथ ही, यह चिकित्सा अध्ययन में पश मॉडल की आवश्यकता को भी काफी कम कर देता है। यह सिस्टम एक बहत अच्छा विकल्प है। पश मॉडल की यह तकनीक भविष्य में और भी अद्भुत और सुरक्षित स्वास्थ्य सेवाएं देने का वादा करती है। डॉ. प्रशांत ने इस तकनीक की समस्या और इसके बहुआयामी अनुप्रयोगों को बहुत ही सरल तरीके से विस्तार से समझाया। इस दौरान संस्थान के निदेशक बुजेश सिंह, डीन संजीव चौहान, एचओडी डॉ. अविनाश सिंह,डॉ. एलिजा चक्रवर्ती. डॉ आशिमा कथुरिया, डॉ. गौरव मिश्रा,

एमआईईटी के बायोटेक्नोलॉजी विभाग में 3डी बायोप्रिंटिंग जैसी नवीनतम तकनीक पर विशेष व्याख्यान

मेरठ। एमआईईटी के बायोटेक्नोलॉजी विभाग ने 3डी बायोप्रिंटिंग जैसी नवीनतम तकनीक पर व्याख्यान का आयोजन किया गया। एटीजीसी बायोटेक प्राइवेट लिमिटेड कंपनी से डॉ प्रशांत सिंह चौहान ने कहा की 3डी बायोप्रिंटिंग एक ऐसी तकनीक है जिसके जरिए बायोइंक और बायोमटेरियल के जरिए

कलम की ललकार

जैविक संरचनाएं और अंग बनाए जा सकते हैं। ये संरचनाएं बिल्कल शरीर के प्राकृतिक अंगों की तरह काम करने में सक्षम हैं। इस तकनीक का उपयोग करके शरीर के विभिन्न ऊतकों का पनर्निर्माण किया जा सकता है। जिसका प्रयोग हड़ी. त्वचा आदि ऊतकों से संबंधित सफलतापर्वक किया जा रहा है। इस तकनीक का सबसे महत्वपूर्ण

हर साल पांच लाख से अधिक लोगों को प्रत्यारोपण के लिए अंगों की कमी की समस्या का सामना करना पड रहा है। ऐसे में यह सिस्टम जल्द ही इस समस्या का एक बहुत अच्छा विकल्प साबित होगा।

साथ ही, यह चिकित्सा विकारों को ठीक करने में अध्ययन में पशु मॉडल की आवश्यकता को भी काफी कम कर देता है। यह सिस्टम एक बहुत उपयोग प्रत्यारोपण के लिए अंगों की अच्छा विकल्प है। पशु मॉडल की कमी की समस्या को हल करना है। यह तकनीक भविष्य में और भी

अद्धत और सुरक्षित स्वास्थ्य सेवाएं देने का वादा करती है। डॉ. प्रशांत ने इस तकनीक की समस्या और इसके बहआयामी अनप्रयोगों को बहत ही सरल तरीके से विस्तार से समझाया इस दौरान संस्थान के निदेशक

बजेश सिंह, डीन संजीव चौहान एचओडी डॉ. अविनाश सिंह.डॉ. एलिजा चक्रवर्ती. डॉ आशिमा कथरिया. डॉ. गौरव मिश्रा. डॉ. नेहा सिंह, डॉ. सचिन तोमर, डॉ. अंकेश पांडेय, डॉ. नीतिका वत्स आदि उपस्थित रहे।

Invited as Resource person in one day Online Workshop on "Biological Waste disposal" Chemistry under DBT Star College Scheme of Durgapur Government College on 4th June, 2024

https://www.youtube.com/watch?v=ojfNylLluxc



Invited Speaker and Chairperson at 108th Indian Science Congress, RTM Nagpur University, Nagpur (2023)



Invited Speaker



Chair Person



MEMBER OF THE **NATIONAL ADVISORY BOARD** AND **INVITED LECTURER** AT THE 9TH INTERNATIONAL CONFERENCE OF IABSCON AT D.Y. PATIL MEDICAL COLLEGE, KOLHAPUR, MAHARASHTRA (2020)







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INVITED GUEST LECTURE ON ADVANCED STEM CELL THERAPY AND APPLICATIONS AT MEDICAL COLLEGE AND HOSPITAL, SAHARANPUR (2021)



CME 2021

Date: 22# November 2021 Place: LT Second Floor OPD Block, SMMH Medical College & Hospital, Saharanpur 01:00 PM - 02:00 PM

Theme: GMC-IITR Saharanpur Medical Innovations and Technology Solutions Initiative Post-Lecture Workshop: Prostate Cancer Screening

> Date: 22rd November Time 01:00 PM To 2:00 PM Sponsorship: Medical Council of India, New Delhi Guest Lecture

Date 224 November Time: 1.00-02:00 PM opic: Advances in Stem Cell Therapy and Application Profestor Dr Eliza Chakraborty, NDI Fellow and Ex Faculty Getten School of Medicine, University of California, Los Angeles USA Affiliation: HOD, DST Firl Center & Professor of Biotechnology,



Meerut Institute of Engineering and Technology, Meerut(UP) Patrons Prof (Dr) Arvind Trivedi, MD, DM Principal, Government Medical College, Saharanpur

rof. (Dr.) Yuwr ai Single Negi, Ph.D.(HTDsillai), PDF (Tolkyn) Dem Indon Institute of Tolinairgs Reecker, Adventual County



Government Medical College and Hospital, Sabaranpur (Uttar Pradesh) India

All faculty, residents, MBBS students and staff are invited to attend and participate

स्टेम सेल थेरेपी से गंभीर बीमारियों का इलाज संभव

सरसावा। राजकीय मेडिकल कॉलेज में स्टेम सेल थैरेपी पर व्याख्यान आयोजित हुआ। प्रोफेसर एलिजा चक्रवर्ती ने कहा कि डिमेशिया, ऑटिजम, मल्टिपल स्क्लेरोसिस और सेरेबल पालसी बीमारियों का इलाज अब स्टेम सेल थैरेपी से संभव है।

मेडिकल कॉलेज व इंडियन इंस्टिट्यूट ऑफ टेक्नोलॉजी रुड़की सहारनपुर के तत्वाधान में स्टेम सेल थेरेपी पर कॉलेज के सभागार में व्याख्यान आयोजित हुआ। मेरठ इंस्टिट्यूट ऑफ़ इंजीनियरिंग एंड टेक्नोलॉजी की प्रोफेसर एलिजा चक्रवर्ती ने एमबीबीएस की पढाई कर रहे छात्र-छात्राओं व कॉलेज की सीनियर फैकल्टी को संबोधित किया। स्टेम कोशिका या मुल कोशिका ऐसी



प्रोफेसर एलिजा चक्रवर्ती।

कोशिकाएं होती हैं, जिनमें शरीर के किसी भी अंग को विकसित करने की क्षमता होती है। इसके साथ ही ये शरीर की दूसरी कोशिका के रूप में भी ख़ुद को ढाल सकती हैं। कार्यक्रम की शरुआत प्राचार्य डॉ अरविंद त्रिवेदी. प्रोफेसर एलिजा चक्रवर्ती व डॉ राकेश शर्मा ने दीप प्रज्जवलित कर की। मौके पर डॉ मनोज सिंह, डॉक्टर संजीव दवे, डॉक्टर गगन गर्ग, डॉक्टर दिव्या रहे।

INTERNATIONAL CONFERENCE (ORGANIZING SECRETARY)







INTERNATIONAL COLLABORATOR



- Dr. Vicky Yamamoto Department of Otolaryngology-Head and Neck Surgery, Keck School of Medicine, University of Southern California (USC), Executive Director of Society for Brain Mapping and Therapeutics, Los Angeles, CA 90033, USA.
- **Collaborator of Prof. Eliza Chakraborty, HOD DST-Fist Center, MIET.**

Publication with US Collaborator

frontiers in Cell and Developmental Biology

EDITORIAL

published: 25 March 2022 doi: 10.3389/toel.2022.890129



Editorial: Advancement in Cancer Stem Cell Biology and Precision Medicine

Nikhil Baban Ghate^{1*}, Vicky Yamamoto^{2,3,4,5*} and Eliza Chakraborty^{6*}

¹Department of Biochemistry and Molecular Medicine, Nomis Comprehensive Cancer Center, University of Southern California, Los Angeles, CA, United States, ²Society for Brain Mapping and Therapeutics (SBMT), Los Angeles, CA, United States, ³Brain Mapping Foundation (BMF), Los Angeles, CA, United States, ⁴The USC Caruso Department of Otalaryngology-Head and Neck Surgery, USC Keck School of Medicine, Los Angeles, CA, United States, ⁵USC-Nomis Comprehensive Cancer Center, Los Angeles, CA, United States, ⁶Department of Biotechnology, DST-FIST Center, Meerut Institute of Engineering and Technology, Maerut, India

Keywords: cancer stem cell, metastasis, head and neck cancer, tumor microenvionment, squamous cell carcinama

Ghate, N. B., Yamamoto, V., & Chakraborty, E. (2022). Editorial: Advancement in Cancer Stem Cell Biology and Precision Medicine. Frontiers in Cell and Developmental Biology, 10. <u>https://doi.org/10.3389/fcell.2022.890129</u>. Impact Factor: 6.6

PROPOSED COLLABORATION WITH RUSSIA

- Title: Prostate Cancer Detection using Carbon Nanotube Biosensor by Exploiting a urine-based stage-dependent Metabolomic Marker.
- Dr. Maxim from the Department of Biomedicine and Nanotechnology at Southwest State University, Kursk, Russia.

SELECTED ALUMNI OF DST- FIST CENTER

Milet



Department of Biotechnology

<u>ALUMNI MEET</u> <u>"03-1-2024"</u>



Akshay Charan (2019), Pursuing Ph.D from George Mason University, Varginia, USA



Chitra Yadav, (2020) MS Oxford, Researcher at University of Cambridge, UK



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Prankur Jain, (2019) MBA IIM, Sirmaur, Senior Management Traniee, TresVista, Bengaluru



Udit Narayan, (2021) M.Tech (JRF), IIT Roorkee

ALUMNI MEET <u>"03-01-2024"</u>

Department of Biotechnology



Harshal Kumar, (2017) Head of R&D and Operations at Levram Lifesciences Pvt. Ltd. Mumbai



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Namrata Tyagi, (2016) Pursuing Ph.D IIT Delhi and Bio- Incubation Manager, Cmie, AIIMS, Delhi







Thank you for your kind attention!