

DST-Fist Center, MIET

Sponsored by

Department of Science and Technology

Ministry of Science & Technology

Government of India



विज्ञान एवं प्रौद्योगिकी विभाग
DEPARTMENT OF
SCIENCE & TECHNOLOGY

ABOUT THE DST-FIST CENTER, MIET

Establishment

❖ **Established on 19th Oct, 2019**

Objective 1

❖ **The Scheme “Fund for Improvement of S&T Infrastructure (FIST)” Sponsored By Department of Science & Technology (DST), Govt. of India**

Objective 2

❖ **To provide basic infrastructure and facilities for promoting R&D activities in new and emerging areas.**

Objective 3

❖ **To attract fresh talents from universities & other educational institutions.**



Team Members



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Department of Pharmacy , MIET, Meerut.
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Major Equipments

**BD Biosciences Accuri C6
Plus Flow Cytometer, C6 Plus**



**Multiskan Sky High Microplate
Spectrophotometer, 51119700DP**



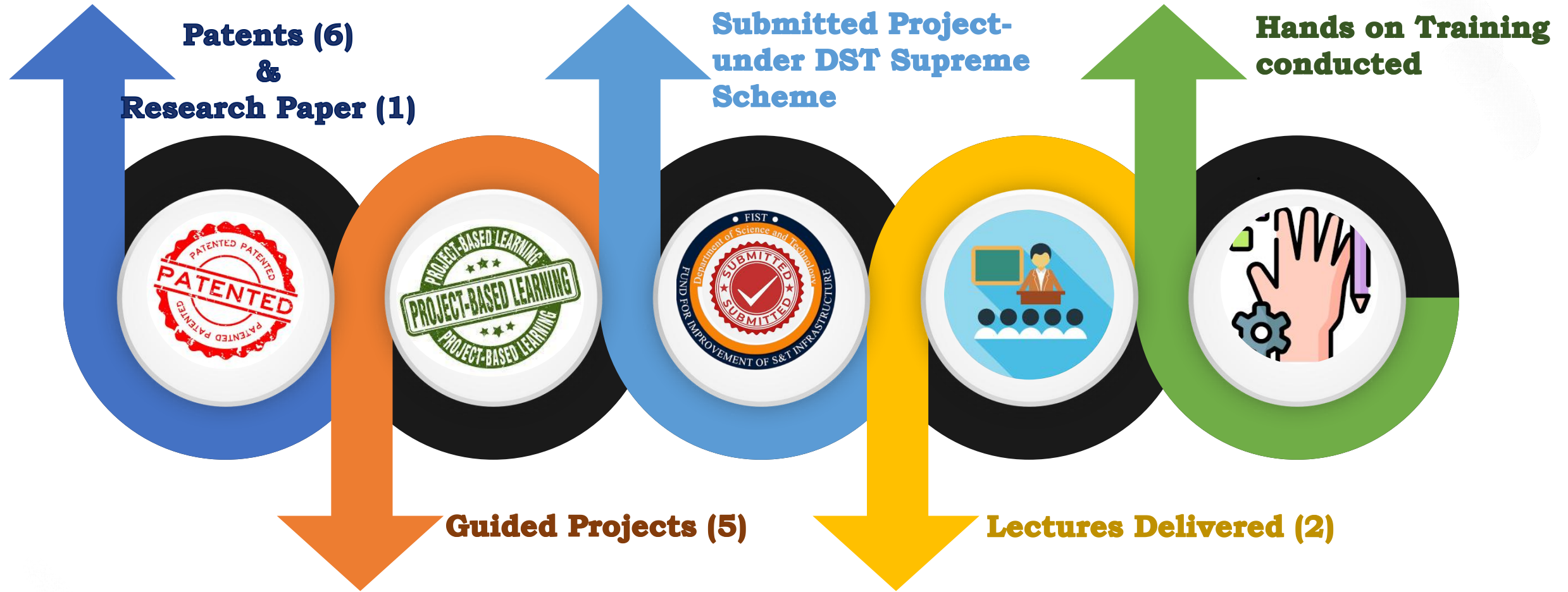
**Centurion Scientific CS5700+ Gas
Chromatography, CS5700+**



**CO₂ Incubator (Thermo Fisher
Scientific), 3111**



Achievements_2024-25



Achievements_2024-25, Paper Published & Patent Granted

Paper Published

Siwach A, Baliyan V, Sharma A, Ahlawat S, Chaudhary S, Chakraborty E. Current standing and future potential of 3D bioprinting and biomaterials. Biomaterials Connect. 2025 May 15;2(1):1-0.

Patent Granted

Patent No. : 552159

Application No. : 202031040945

A POTENTIAL NATURAL BIO-MATRIX FROM ALOE VERA GEL FOR SUSTAINING GROWTH OF ADHERENT CELLS IN ANIMAL CELL CULTURE.

Biomaterials Connect
ISSN: 3005-6076
2025, Article ID: 2025.0015, Cite as: <https://doi.org/10.59709/BiomATC.2025.198090>

SCIFINITI

Review Article

OPEN ACCESS

Current Standing and Future Potential of 3D Bioprinting and Biomaterials

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Article History
Submitted: December 23, 2024 Accepted: April 11, 2025 Published: May 15, 2025

Abstract

Biomaterials play a pivotal role in advancing tissue engineering, offering significant potential in 3D bioprinting and translational medicine. Their development has led to the creation of innovative solutions in medical devices, dental implants, and prosthetics, where they serve to restore function and enhance patient quality of life. The success of these biomaterials is primarily dependent on important characteristics that guarantee their safe integration with the body and promote tissue regeneration, such as biocompatibility, biodegradability, and bifunctionality. This review explores recent advancements in these areas, with a particular focus on the role of nanotechnology in enhancing biomaterial properties. Biomaterials have opened many avenues by improving mechanical, biological, and functional properties for targeted treatments, precision therapies, improved therapeutic effectiveness, and better results. Additionally, the rise of 3D printing technologies has transformed the design and fabrication of biomaterials, enabling the production of customized implants and scaffolds with intricate geometries suited to individual patient needs. This review examines the current state of research, challenges faced in the field, and emerging trends in the integration of nanotechnology and additive manufacturing to push the boundaries of biomaterial applications in tissue engineering and regenerative medicine.

पेटेंट कार्यालय, भारत सरकार
पेटेंट प्रमाण पत्र
(पेटेंट नियमावली का नियम 74)

The Patent Office, Government of India
Patent Certificate
(Rule 74 of The Patents Rules)

पेटेंट सं. / Patent No. : 552159
आवेदन सं. / Application No. : 202031040945
फाइल करने की तारीख / Date of Filing : 22/09/2020
पेटेंटी / Patentee : 1. MEERUT INSTITUTE OF ENGINEERING & TECHNOLOGY (Miet) 2. Prof. (Dr.) ELIZA CHAKRABORTY

प्रमाणित किया जाता है कि पेटेंटी को, उपरोक्त आवेदन में वृत्तांकित **A POTENTIAL NATURAL BIO-MATRIX FROM ALOE VERA GEL FOR SUSTAINING GROWTH OF ADHERENT CELLS IN ANIMAL CELL CULTURE**, नामक आविष्कार के लिए, पेटेंट अधिनियम, 1970 के उपबंधों के अनुसार आज तारीख सितम्बर 2020 के बाद से दिनों से बीस वर्ष की अवधि के लिए पेटेंट अनुदान किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled **A POTENTIAL NATURAL BIO-MATRIX FROM ALOE VERA GEL FOR SUSTAINING GROWTH OF ADHERENT CELLS IN ANIMAL CELL CULTURE**, as disclosed in the above mentioned application for the term of 20 years from the 22nd day of September 2020 in accordance with the provisions of the Patents Act, 1970.

अनुदान की तारीख / Date of Grant : 09/10/2024

नियंत्रक पेटेंट्स / Controller of Patents

नोट - इस पेटेंट के नवीकरण के लिए धीरे, धीरे इसे नए राज कर है, जिसका 2022 के बाद से दिनों को और उसके पचास अनेक वर्ष के उन्नीस सेव सेव है।
Note - The fees for renewal of this patent, if it is to be maintained, will fall / has fallen due on 22nd day of September 2022 and on the same day in every year thereafter.



Achievements_2024-25, Patent Published



**Department of Biotechnology
MIET, Meerut**

miet



Application No:
202511015762A

Fusion matrix-based 3D in vitro drug screening model: A sustainable alternative to animal testing.

Application No:
202511015792A

Plant-based biomatrix for 3D in vitro drug screening model, 2025

Application No :
202511026823A

Flax seed-based advanced biomaterial for supporting A375 cell growth, 2025

Application No:
202511026834A

Aloe vera-based advanced biomaterial for supporting A375 cell growth in 3D culture, 2025

Application No:
202511026851A

Chia seed-based biomaterial for HeLa cell culture and tissue engineering. 2025



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Achievements_2024-25, Guided Projects

Current standing of plant biomaterial for *in-vitro* disease modeling & future green therapeutic applications

Cytotoxicity assessment of lead acetate & cobalt nitrate on HeLa cell line using MTT assay

Application of biomaterial: current standing and future prospective of skin based *in vitro* screening model

Development of an *in vitro* uterine-based disease model using advanced biomaterials



Comparative cytotoxicity assessment of lead acetate on HeLa and MDA-MB-231 cell line using MTT assay

Project proposal
for
DST SUPREME scheme

**Bridging the Gap: A DST-SUPREME
Initiative for Sustained Functionality and
Upgradation of DST-FIST Aided
Infrastructure**



Achievements_2024-25, Lecture Delivered



Topic – Biological &
Laboratory Safety
Date- 21 Feb 2025

**Audience- B. Tech students,
Department of Biotechnology**



Topic – Introduction to DST
FIST Centre
Date- 10 April 2025

**Audience- 2nd Year students,
Computer Science
Department**



Achievements_2024-25, 5-Days hands on Workshop on Cell Culture Techniques

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acimiet
Meerut Foundation

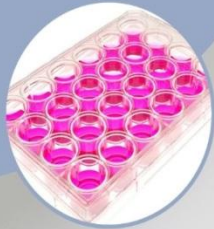
DEPARTMENT OF BIOTECHNOLOGY

SUPPORTED BY

DST-FIST CENTER, MIET &
ACIC MIET MEERUT FOUNDATION

IS ORGANIZING A

5-DAY HANDS-ON WORKSHOP ON CELL CULTURE TECHNIQUES



DATES

25-06-2025

TO

29-06-2025

REGISTER AT

<https://shorturl.at/LxzVv>



WORKSHOP CHARGES

Rs. 5015 (Inclusive of GST) per person

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DST-FIST CENTER, MIET, MEERUT



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DEPARTMENT OF
SCIENCE & TECHNOLOGY



एमआईईटी में कार्यशाला के समापन समारोह में शामिल प्रतिभागी • सी. कालेज

कोशिका संवर्धन के सैद्धांतिक और व्यावहारिक पक्ष बताए

एमआईईटी में सेल कल्चर तकनीक पर पांच दिवसीय कार्यशाला का समापन

जागरण संवाददाता, मेरठ: मेरठ इंस्टीट्यूट ऑफ इंजीनियरिंग एंड टेक्नोलॉजी (एमआईईटी) में जैव प्रौद्योगिकी विभाग की ओर से विज्ञान एवं प्रौद्योगिकी विभाग व एसीआईसी एमआईईटी फंडेशन के सहयोग से पांच दिवसीय हैंड्स-ऑन सेल कल्चर तकनीक कार्यशाला का आयोजन किया गया। इसका उद्देश्य प्रतिभागियों को एनिमल सेल कल्चर की सैद्धांतिक एवं व्यावहारिक जानकारी देना रहा।

कार्यशाला का उद्घाटन डा. अमित कुमार बालियान ने किया और बायोमेडिकल व फार्मास्यूटिकल

रिसर्च में सेल कल्चर की उपयोगिता पर प्रकाश डाला। बताया कि एनिमल सेल कल्चर (कोशिका संवर्धन) ऐसी प्रक्रिया है जिसमें पशु कोशिकाओं को शरीर के बाहर एक नियंत्रित, कृत्रिम वातावरण में उगाया और विकसित किया जाता है। प्रतिभागियों को मीडिया तैयारी, कोशिका पृथक्करण, साइटोटीक्सिसिटी परीक्षण, पासेजिंग, काउंटिंग और क्रायोप्रिजर्वेशन जैसी उन्नत तकनीकों का प्रशिक्षण दिया गया। एमआईईटी के निदेशक डा. संजय कुमार सिंह ने समापन समारोह में कहा कि ऐसी कार्यशालाएं छात्रों को शोध व उद्योग के लिए तैयार करती हैं। यह कार्यशाला बायोटेक्नोलॉजी क्षेत्र में शोध और नवाचार को बढ़ावा देने की एमआईईटी की प्रतिबद्धता दर्शाती है।

एमआईईटी मेरठ में सेल कल्चर तकनीक पर पांच दिवसीय कार्यशाला सम्पन्न, बायोटेक्नोलॉजी में शोध रुचि को मिला नया आयाम

सियासत ब्यूरो/मेरठ। मेरठ इंस्टीट्यूट ऑफ इंजीनियरिंग एंड टेक्नोलॉजी (एमआईईटी) के जैव प्रौद्योगिकी विभाग द्वारा

विज्ञान एवं प्रौद्योगिकी विभाग और एसीआईसी एमआईईटी फंडेशन के सहयोग से पांच दिवसीय हैंड्स-ऑन सेल कल्चर तकनीक कार्यशाला का आयोजन किया गया। इसका उद्देश्य प्रतिभागियों को एनिमल सेल कल्चर की सैद्धांतिक एवं व्यावहारिक जानकारी देना था। कार्यशाला का उद्घाटन डॉ.



अमित कुमार बालियान ने किया और बायोमेडिकल व फार्मास्यूटिकल रिसर्च में सेल कल्चर की उपयोगिता पर प्रकाश डाला। प्रतिभागियों को मीडिया तैयारी, कोशिका पृथक्करण, साइटोटीक्सिसिटी परीक्षण, पासेजिंग, काउंटिंग और क्रायोप्रिजर्वेशन जैसी उन्नत तकनीकों का प्रशिक्षण दिया गया। एमआईईटी के निदेशक डॉ. संजय कुमार सिंह ने समापन समारोह में कहा कि ऐसी कार्यशालाएं छात्रों को शोध व उद्योग के लिए तैयार करती हैं। प्रतिभागियों ने प्रशिक्षण को व्यावहारिक और उपयोगी बताया। यह कार्यशाला बायोटेक्नोलॉजी क्षेत्र में शोध और नवाचार को बढ़ावा देने की एमआईईटी की प्रतिबद्धता को दर्शाती है।

Road Map 2025-26



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 इंस्ट्रूमेंट रिसर्च लैब का उद्घाटन एमआईआईटी में किया गया। डीएसटी एफआईएसटी एडवांस रिसर्च लैब का उद्घाटन एमआईआईटी ग्रुप के चेयरमैन विष्णु शरण, वाइस चैयरमैन पुनीत अग्रवाल, डायरेक्टर डॉ मयंक गर्ग, डीन एकेडमिक डॉ डीके शर्मा ने संयुक्त रूप से फीता काटकर किया।

बायो टेक्नोलॉजी विभाग के विभागाध्यक्ष डॉ नितिन शर्मा ने बताया की विज्ञान और प्रौद्योगिकी के बुनियादी ढांचे में सुधार के लिए डीएसटी द्वारा एमआईआईटी के बायोटेक्नोलॉजी विभाग को योजना के तहत 50 लाख रुपए का अनुदान किया गया। इस योजना का उद्देश्य नए और उभरते क्षेत्रों में अनुसंधान और विकास गतिविधियों को बढ़ावा देने



और विश्वविद्यालयों और अन्य शैक्षणिक संस्थानों में नई प्रतिभाओं को आकर्षित करने के लिए बुनियादी ढांचा और सक्षम सुविधाएं प्रदान करना है। न्यूनतम रिसर्च एंड डेवलपमेंट उपयोगी इंस्ट्रूमेंट भारत सरकार के अनुदान द्वारा खरीदे गए हैं, जिससे कैसर जैसी गंभीर बीमारियों पर रिसर्च करने में मदद मिलेगी। शोध के प्रति छात्रों का रुझान बढ़ाने के लिए इसमें शिक्षकों, शोधार्थियों समेत

एमटेक व बीटेक छात्रों को रिसर्च कार्य से जुड़ने के लिए आमंत्रित किया गया है। इसके लिए छात्रों के पास स्वस्थ, एनर्जी व मैटेरियल पर शोध से जुड़ा कोई प्रोजेक्ट हो तो वह भी यहां पर आकर काम कर सकते हैं। उन्होंने बताया कि इसके साथ ही रिसर्च कार्यक्रम भी छात्रों के लिए जल्द शुरू किया जाएगा। साथ ही छात्रों का नाम भी रिसर्च जर्नल्स में दिया जाएगा।



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Team members details

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Road map

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Credentials

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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

1. Prof. (Dr.) Sanjay Kr. Singh

Principal Investigator, DST-FIST Center,
MIET

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2. Prof. Eliza Chakraborty

HOD DST-Fist & Scientist

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TEAM MEMBERS ALONG WITH DETAILS

3. Dr. Anurag Chaudhary

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4. Ms. Deepika Pal

Scientist

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Contact No: 6395098741



LIST OF MAJOR EQUIPMENT

S.N o.	Name of Equipment	Cat No.	Cost	Working Status
1.	BD Biosciences Accuri C6 Plus Flow Cytometer	C6 Plus	11,27,000/-	Working
2.	Multiskan Sky High Microplate Spectrophotometer	51119700DP	30,09,000/-	Working
3.	Centurion Scientific CS5700+ Gas Chromatography	CS5700+	4,39,909/-	Working
4.	CO2 Incubator (Thermo Fisher Scientific)	3111	5,60,619/-	Working

1. BD BIOSCIENCES ACCURI C6 PLUS FLOW CYTOMETER

Material 660517

HSB Code 90278099

Bath No. 9347671

Application Trainer

1. Mr. Vishal Garg- 8800798333

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.
3. 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 training 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 **mi et**
Hosted by: DST-FIST Centre, MIET, Meerut

Topics: Health, Environment & Laboratory Safety

ABOUT THE INSTITUTE
 Meerut Institute of Engineering & Technology (MIET) has officially been ranked as the 4th best Engineering College in Uttar Pradesh by AKTU. MIET stands tallest among all other self-financed engineering institutions in northern India. It not only holds the prestigious position of being one of the best & oldest (Established in 1997) Institutions that caters to education in the field of Engineering and Technology but also ensures that each student emerges as a competent enough to hold a dynamic image of his own after the completion of his or her stint at MIET.

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 1971 to promote new 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 country. It gives funds to various approved scientific projects in India. It also supports various researchers in India to attend conferences abroad and to go for experimental works. A new scheme "Fund for Improvement of S&T Infrastructure 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.

CHIEF-PATRON
Er. Vishnu Saran
 Chairman
 MIET, Meerut

PATRON
Er. Puneet Agarwal
 Vice Chairman
 MIET, Meerut

ADVISORS

Prof. (Dr.) Mayank Garg
 Executive Director
 Principal Investigator of DST-FIST Centre
 MIET, Meerut

Prof. (Dr.) D.K. Sharma
 Dean Academics
 MIET, Meerut

Prof. Kasturi Mukhopadhyay
 IIT, New Delhi

ORGANIZING COMMITTEE MEMBERS

Prof. Eliza Chakraborty
 Professor and Founder Head of DST-FIST Centre
 MIET, Meerut
 (Organizing Secretary)

Dr. Avinash Singh
 HOD Biotechnology
 MIET, Meerut

Dr. Chandrabhan Seniya
 Assistant Professor
 Scientific Member of DST-FIST Centre
 MIET, Meerut

Important Date:
 Last Date of Registration: 19.12.2020
 10:00 AM

Online Via Zoom
<https://forms.gle/RqXyn8EGC00UFC9i>



E-Certificates will only be provided to those Participants who will attend all Three Sessions

Free Registration



Speakers

Date & Time	Title	Speakers
01.12.2020 05:30 PM to 07:30 PM	"Advancements in Cancer Therapeutics"	Dr. Vicky Yamamoto Cancer Scientist, Department of Obstetrics and Gynecology Reck School of Medicine of USC Executive Director of Society for Brain Mapping & Therapeutics (SBMT) Los Angeles, CA, USA
02.12.2020 05:30 PM to 07:30 PM	"COVID-19 and US Based Sterilization Units"	Dr. Ambarish Kumar Associate Professor, Department of Biosciences and Biotechnology, Indian Institute of Technology, Bombay
03.12.2020 05:30 PM to 07:30 PM	"Development of Next Generation OMV's Based Shigella Vaccine by the Way of Multidimensional Approach"	Dr. Hemanta Koley Scientist - E, Deputy Director Division of Bacteriology National Institute of Cholera and Enteric Diseases (NICED), Kolkata
04.12.2020 05:30 PM to 07:30 PM	"Emerging Infectious World Wide Including Recent COVID-19 - Challenge of Sampling Infectious Agents From Air and Surface"	Dr. Adin Adhikari Associate Professor of Environmental Health Sciences at Georgia Southern University, USA
05.12.2020 05:30 PM to 07:30 PM	"Decellularized Matrix for Tissue Engineering"	Dr. Narayan Chandra Mishra PhD (Max-Planck Institute, Germany) Associate Professor and Chairman DMC, Department of Polymer and Process Engineering Indian Institute of Technology, Mumbai
06.12.2020 05:30 PM to 07:30 PM	"Biochemical & Molecular Diagnosis of Covid-19"	Dr. Bhukha Mukherjee Associate Professor Department of Biochemistry AIMS, Shiga
07.12.2020 05:30 PM to 07:30 PM	"Bridging User-Centered Innovation"	Dr. Debbie Lin Teodorescu MD (University of Harvard), MD, MEd, AM, Attending Physician Massachusetts General Hospital, Faculty Harvard Medical School, Founder Surgiflow, Researcher, MIT D-Lab & MIT, USA
08.12.2020 05:30 PM to 07:30 PM	Topic Title: "Environmental Pollution and Cancer"	Dr. Sutapa Mukherjee Academic Co-ordinator Senior Scientific Officer Department of Environmental Carcinogenesis & Toxicology, Chatterjee National Cancer Institute, Kolkata
09.12.2020 05:30 PM to 07:30 PM	Topic Title: "Laboratory Biosafety"	Dr. Nikhil B. Ghate Researcher Ronan Comprehensive Cancer Center Reck School of Medicine University of Southern California East Lake Avenue, Los Angeles, USA

Organized by:
DST-FIST Centre, (Ministry of Science & Technology, Govt. of India),
Meerut Institute of Engineering & Technology, Meerut

Contact Information
 E-mail : eliza.chakraborty@mi et.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

Int

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

Dr. Chandrabhan Seniya

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

Dr. Mayank Garg

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

4. INSTRUMENT INSTALLATION AND TRAINING DETAILS

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

4. INSTRUMENT INSTALLATION AND TRAINING DETAILS

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

4. INSTRUMENT INSTALLATION AND TRAINING DETAILS

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

4. INSTRUMENT INSTALLATION AND TRAINING DETAILS

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

4. INSTRUMENT INSTALLATION AND TRAINING DETAILS

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: 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 202331047407 (A Fenton Hydrogel based matrix 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

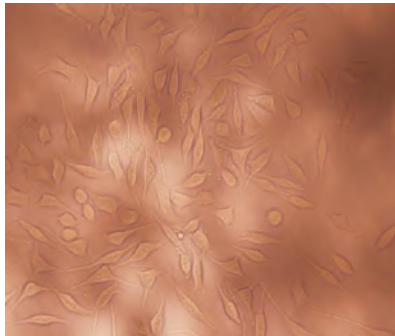


Fig 1. Observation of L929 cell line growth on Paper Matrix at 20X under the IX73 Olympus Microscope.

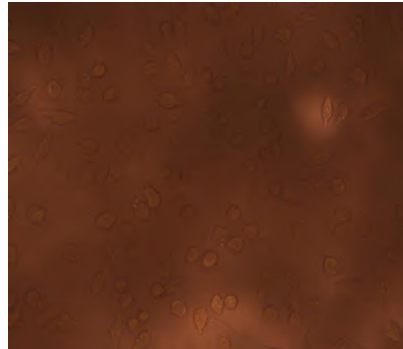


Fig 2. (.4%) NDEA drug, at One (1) hour Observation of L929 cell line growth on Paper Matrix at 20X under the IX73 Olympus Microscope.

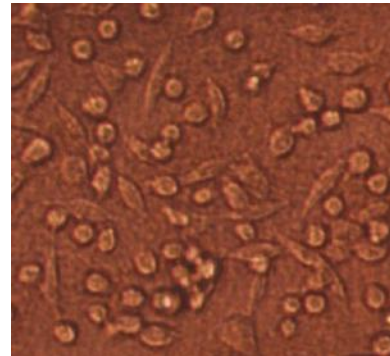


Fig 3. Observation of L929 cell Spheroid Formation with 1X 73 Olympus microscope under 20X

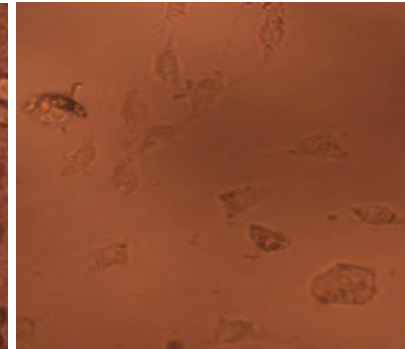


Fig 4. (1%) NDEA drug, at 1 hr. observation of L929 cell line growth of (*AstragalusGummifer*) Fusion Matrix at 20X under the IX73 Olympus Microscope.

- **6 Patents Pending (Outcome of B.Tech Projects)**

CREDENTIALS

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 <https://doi.org/10.1186/s43088-021-00172-1>
2. Editorial: Advancement in Cancer Stem Cell Biology and Precision Medicine. Journal - Frontiers, Authors Name: Nikhil Baban Ghate, Vicky Yamamoto, and Eliza Chakraborty. <https://doi.org/10.3389/fcell.2022.890129>
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. <https://doi.org/10.1186/s43088-022-00308>
4. Studies on Optimization of Parameters for Extraction of Total Phenolic Content From Terminalia Arjuna". Authors Name- Kunal Kapoor, Deepika Pal, Vijay Rajesh Andananala, Sandeep Sirchi, And Surya Prakash 2022. <https://doi.org/10.47750/pnr.2022.13.S10.261>

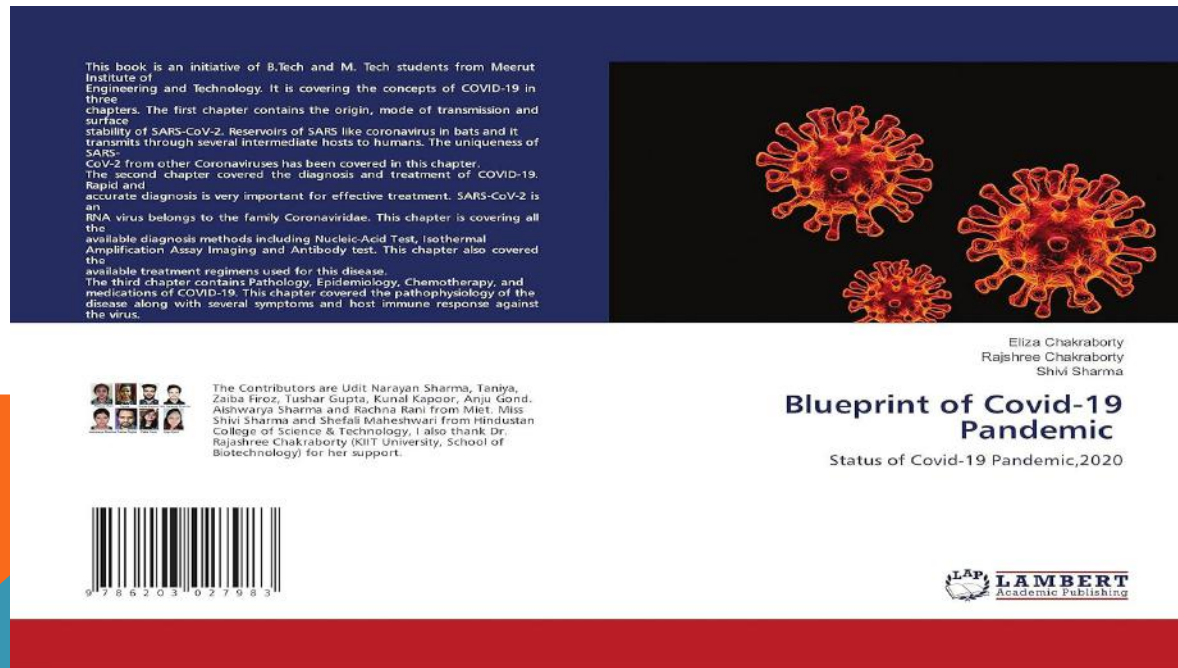
CREDENTIALS

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 <https://www.ijnrd.org/papers/IJNRD2305644.pdf>
6. 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). https://ijcrt.org/viewfulltext.php?p_id=IJCRT2403311
8. “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). <https://doi.org/10.5281/zenodo.10953587>.

CREDENTIALS

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



CREDENTIALS

IV. Conferences:

1. 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.

CREDENTIALS

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, Nagpur Title: 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

CREDENTIALS

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)

CREDENTIALS

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.

Student name: Rishi Tripathi

CREDENTIALS

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.

CREDENTIALS

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.



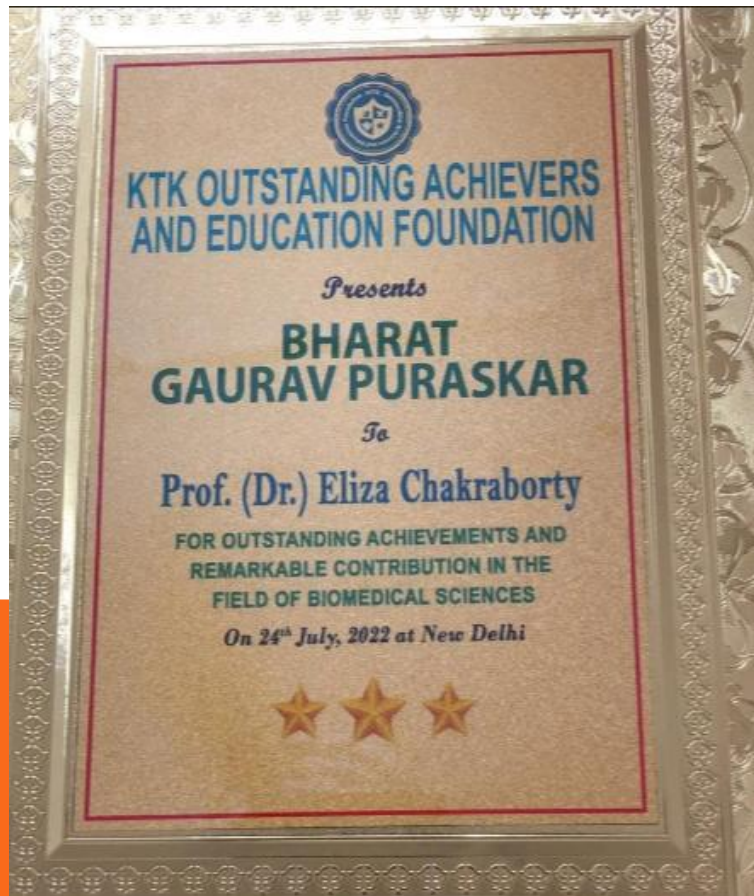
4. Adesh Nautiyal M.Sc. Final year (2023)

Appointed as Executive in QC Department at J.Mitra & Co. Pvt.
Ltd., New Delhi.



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 इंस्ट्रूमेंट रिसर्च लैब का उद्घाटन एमआईआईटी में किया गया। डीएसटी एफआईएसटी एडवांस रिसर्च लैब का उद्घाटन एमआईआईटी 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।

बायो टेक्नोलॉजी विभाग के विभागाध्यक्ष डॉ॰ नितिन शर्मा ने बताया की विज्ञान और प्रौद्योगिकी के बुनियादी ढांचे में सुधार के लिए डीएसटी द्वारा एमआईआईटी के बायोटेक्नोलॉजी विभाग को योजना के तहत 50 लाख रुपए का अनुदान किया गया। इस योजना का उद्देश्य नए और उभरते क्षेत्रों में अनुसंधान और विकास गतिविधियों को बढ़ावा देने



और विश्वविद्यालयों और अन्य शैक्षणिक संस्थानों में नई प्रतिभाओं को आकर्षित करने के लिए बुनियादी ढाँचा और सक्षम सुविधाएँ प्रदान करना है। न्यूनतम रिसर्च एंड डेवलपमेंट उपयोगी इंस्ट्रूमेंट भारत सरकार के अनुदान द्वारा खरीदे गए हैं, जिससे केंसर जैसी गंभीर बीमारियों पर रिसर्च करने में मदद मिलेगी। शोध के प्रति छात्रों का रुझान बढ़ाने के लिए इसमें शिक्षकों, शोधार्थियों समेत

एमटेक व बीटेक छात्रों को रिसर्च कार्य से जुड़ने के लिए आमंत्रित किया गया है। इसके लिए छात्रों के पास स्वस्थ, एनर्जी व मैटेरियल पर शोध से जुड़ा कोई प्रोजेक्ट हो तो वह भी वहां पर आकर काम कर सकते हैं। उन्होंने बताया कि इसके साथ ही यंग रिसर्चर कार्यक्रम भी छात्रों के लिए जल्द शुरू किया जाएगा। साथ ही छात्रों का नाम भी रिसर्च जर्नल्स में दिया जाएगा।



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)

श्री 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 3डी बायोप्रिंटिंग एक ऐसी तकनीक है जिसके जरिए बायोइंक और बायोमेटेरियल के जरिए जैविक संरचनाएं और अंग बनाए जा सकते हैं। ये संरचनाएं बिल्कुल शरीर के प्राकृतिक अंगों की तरह काम करने में सक्षम हैं। इस तकनीक का उपयोग करके शरीर के विभिन्न ऊतकों का पुनर्निर्माण किया जा सकता है। जिसका प्रयोग हड्डी, त्वचा आदि ऊतकों से संबंधित विकारों को ठीक करने में सफलतापूर्वक किया जा रहा है।



है। इस तकनीक का सबसे महत्वपूर्ण उपयोग प्रत्यारोपण के लिए अंगों की कमी की समस्या को हल करना है। हर साल पांच लाख से अधिक लोगों को

प्रत्यारोपण के लिए अंगों की कमी की समस्या का सामना करना पड़ रहा है।

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

साथ ही, यह चिकित्सा अध्ययन में पशु मॉडल की आवश्यकता को भी काफी कम कर देता है। यह सिस्टम एक बहुत अच्छा विकल्प है। पशु मॉडल को 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 बृजेश सिंह, डीन संजीव चौहान, एचओडी डॉ. अविनाश सिंह, डॉ. एलिजा चक्रवर्ती, डॉ. आशिमा कथुरिया, डॉ. गौरव मिश्रा, डॉ. नेहा सिंह, डॉ. सचिन तोमर, डॉ. अंकेश पांडेय, डॉ. नीतिका वत्स आदि उपस्थित रहे।

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

कलम की ललकार

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 बायोमेटेरियल के जरिए



जैविक संरचनाएं और अंग बनाए जा सकते हैं। ये संरचनाएं बिल्कुल शरीर के प्राकृतिक अंगों की तरह काम करने में सक्षम हैं। इस तकनीक का उपयोग करके शरीर के विभिन्न ऊतकों का पुनर्निर्माण किया जा सकता है। जिसका प्रयोग हड्डी, त्वचा आदि ऊतकों से संबंधित विकारों को ठीक करने में सफलतापूर्वक किया जा रहा है। इस तकनीक का सबसे महत्वपूर्ण उपयोग प्रत्यारोपण के लिए अंगों की कमी की समस्या को हल करना है।

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

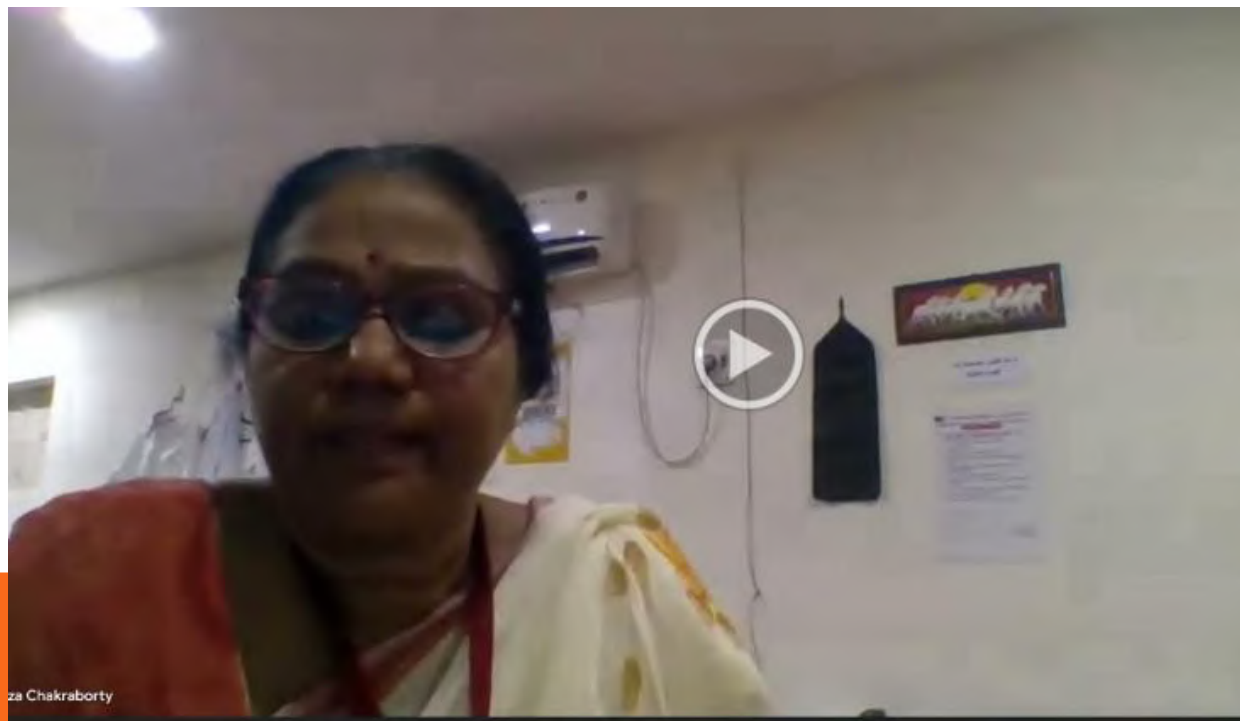
साथ ही, यह चिकित्सा अध्ययन में पशु मॉडल की आवश्यकता को भी काफी कम कर देता है। यह सिस्टम एक बहुत अच्छा विकल्प है। पशु मॉडल की यह तकनीक भविष्य में और भी

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 बृजेश सिंह, डीन संजीव चौहान, एचओडी डॉ. अविनाश सिंह, डॉ. एलिजा चक्रवर्ती, डॉ. आशिमा कथुरिया, 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: 22nd 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: 22nd November Time 01:00 PM To 2:00 PM
Sponsorship: Medical Council of India, New Delhi

Guest Lecture
Date: 22nd November Time: 1:00-02:00 PM
Topic: **Advances in Stem Cell Therapy and Applications**
Professor Dr. Eliza Chakraborty, NIH Fellow and Ex-Faculty
Geffen School of Medicine, University of California, Los Angeles USA
Affiliation: HOD, DST-Fist Center & Professor of Biotechnology,
Meerut Institute of Engineering and Technology, Meerut (UP)

Patrons
Prof. (Dr.) Arvind Trivedi, MD, DM
Principal, Government Medical College, Saharanpur
Prof. (Dr.) Yuvraj Singh Negi, Ph.D (IIT Delhi), PhD (Tokyo)
Department Institute of Technology, Roorkee, Saharanpur Campus

Organized By
Government Medical College and Hospital,
Saharanpur (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 थेरेपी पर व्याख्यान आयोजित हुआ। प्रोफेसर एलिजा चक्रवर्ती ने कहा कि डिमेंशिया, ऑटिज्म, मल्टिपल स्क्लेरोसिस और सेरेब्रल पालसी बीमारियों का इलाज अब स्टेम सेल थेरेपी 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 ऑफ इंजीनियरिंग एंड टेक्नोलॉजी की प्रोफेसर एलिजा चक्रवर्ती ने एमबीबीएस की पढ़ाई कर रहे छात्र-छात्राओं व कॉलेज की सीनियर फैकल्टी को संबोधित किया। स्टेम कोशिका या मूल 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 खुद को ढाल सकती है। कार्यक्रम की शुरुआत प्राचार्य डॉ अरविंद त्रिवेदी, प्रोफेसर एलिजा चक्रवर्ती व डॉ राकेश शर्मा ने दीप प्रज्ज्वलित कर की। मौके पर डॉ मनोज सिंह, डॉक्टर संजीव दवे, डॉक्टर गगन गर्ग, डॉक्टर दिव्या रहे।

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Prof. Lindsay Brown,
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University of Southern Queensland
Australia



Prof. Suresh C. Tyagi
Studgill endowed Chair in Biomedical Sci-
ences, & Vice Chair of Research, University of
Louisville, School of Medicine, Kentucky, USA



Prof. Dr. Hari S. Sharma,
Institute for Cardiovascular Research
VUmc, University Medical Center
Amsterdam The Netherlands

CALL FOR ABSTRACT

MIET Biotechnology Society (MBS) invites abstracts on the topics under following themes for poster / oral presentations during technical sessions.

DURATION OF THE SEMINAR

This is a One-Day program scheduled on 24th February, 2020 (Monday) and will be conducted in different sessions from 9.30 am to 5.00 pm on the day.

THEMES

- ⇒ Molecular Microbial Technology in Diagnostics
- ⇒ Biotechnology in Healthcare
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- ⇒ Artificial Intelligence in Healthcare

GUIDELINES FOR ABSTRACT SUBMISSION

Content: The abstract should clearly define the objectives of the study along with methodology used / proposed to use for achieving the desired aims.

Style: Documents should be a MS-Word, double-spaced, single-column manuscript, with wide margins, minimum 11 pt, Times New Roman.

Length: 250 – 350 words

All the abstracts should be sent on email id: iabsmiet20@gmail.com or before 21st February, 2020.

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IMPORTANT DATES

- ⇒ Last Date of Registration : 23rd February, 2020 (on spot registration is also available)
- ⇒ Last date for submission of abstract : 21st February, 2020
- ⇒ Date for intimation of acceptance of abstract (Oral / Poster): 21st February, 2020

REGISTRATION FEES

- * Student: Rs. 300/- Spot Registration: Rs. 850/-
- * Faculty/ Scientists/ Industry Personnel : Rs. 750/- Till 22nd February.

ADDRESS FOR CORRESPONDENCE

Prof. Eliza Chakraborty (Department of Biotechnology)
Organizing Secretary, IABS Satellite International Conference on Interface of Biotechnology & Modern Medicine
Meerut Institute of Engineering & Technology
N.H. 58, Delhi-Roorkee Highway, Bagpat Road Bypass Crossing,
Meerut - 250005, Uttar Pradesh (India)
Email: iabsmiet20@gmail.com Website: www.miet.ac.in

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



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, Norris 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 Otolaryngology-Head and Neck Surgery, USC Keck School of Medicine, Los Angeles, CA, United States, ⁵USC-Norris Comprehensive Cancer Center, Los Angeles, CA, United States, ⁶Department of Biotechnology, DST-FIST Center, Meerut Institute of Engineering and Technology, Meerut, India

Keywords: cancer stem cell, metastasis, head and neck cancer, tumor microenvironment, squamous cell carcinoma

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. <https://doi.org/10.3389/fcell.2022.890129>. 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



Department of Biotechnology

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



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



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



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



Department of Biotechnology

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



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



Jasmine Gupta, (2020)
Scientist at Biocon
Biologics



Thank you for your kind attention!