

# अवलोकन

Annual Newsletter



Welcome to  
The Department of  
**BIOSCIENCES &  
BIOENGINEERING**

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### TEAM AWALOKAN:

- Maitreyee Bhalme-B.Tech BSBE
- Khushi Karnani-B.Tech BSBE
- Hrishikesh Patil-B.Tech BSBE
- Himanshu Mittal-B.Tech BSBE
- Prof. Sachin Kumar-Advisor, BSBE
- Prof. Latha Rangan-Patron, HOD BSBE

### FROM HOD's DESK

At a time when the entire country is devastated by the pandemic and the education system has been challenged, we @ BSBE are equipping ourselves with effective, creative, and innovative methods to face the challenge. This is all possible because we move in cohesion supporting each other. I am happy to see that we are coming up with Volume 3 of the Dept Newsletter as per our schedule. The Covid-19 crisis has taught us many things particularly being resilient and adaptive to the transformation to a more inclusive and sustainable system.



Prof. Latha Rangan

We move ahead with the hope that there would be greater unison of value build-up, more think tanks from our young community of students and researchers for holistic growth.

Last year has been fruitful and the right balance was struck on the progressive path of academics, research, and other development skills. Thanks largely to my colleagues, staff, and students. I congratulate everyone and pray that all stay safe and healthy.

### SWARNAJAYANTI FELLOWSHIP

Congratulations to Prof. Biman B. Mandal for being awarded the prestigious Swarnajayanti fellowship by the Department of Science and Technology, India in the "Life Science" subject.



Prof. Biman B. Mandal

The Swarnajayanti Fellowship is a research fellowship in India awarded annually by the Department of Science and Technology for notable and outstanding research by young scientists, applied or fundamental, in biology, chemistry, environmental science, engineering, mathematics, medicine and physics.

### TANGIBLE OUTPUT

52

Ongoing

16

New

9

Ongoing

8

New

RESEARCH PROJECTS

CONSULTANCY PROJECTS

15

Applied

2

Granted

221

International

19

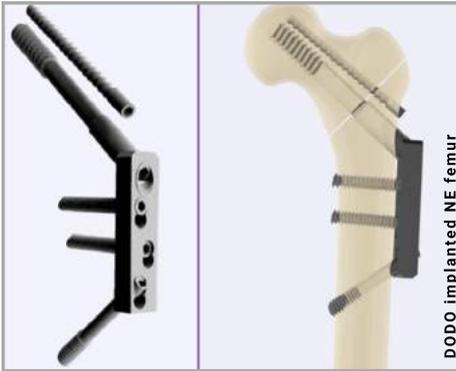
National

PATENTS

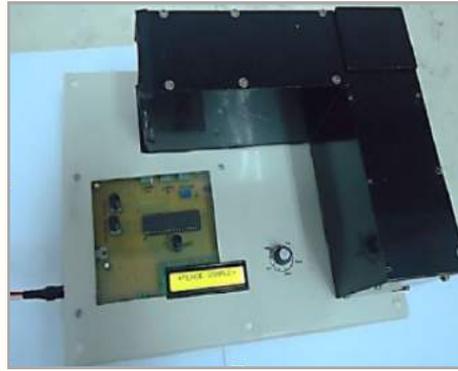
RESEARCH PAPERS

# FACULTY ACCOMPLISHMENTS

## PRODUCT INNOVATIONS

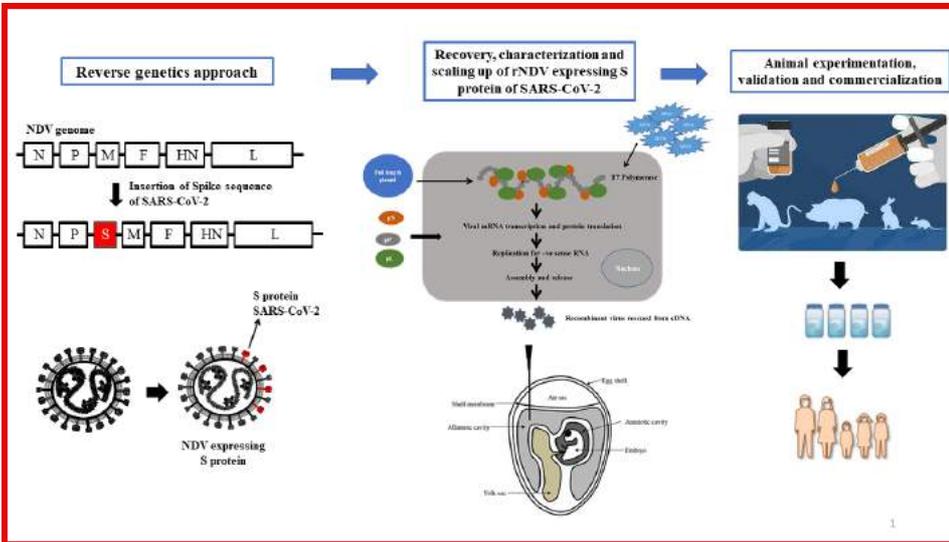


DODO implanted NE femur



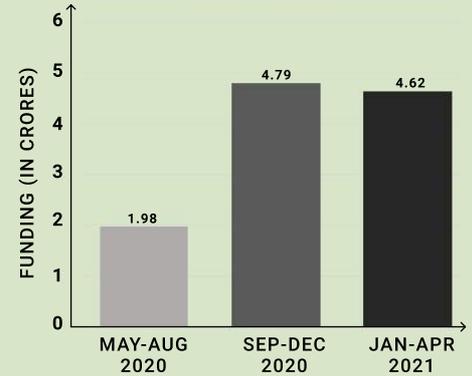
**Double Oblique Device for Osteosynthesis (DODO) of the hip:**  
Inventors: Prof. Souptick Chanda

**Cost effective, Portable User Friendly Fluorometer**  
Inventors: Kulkarni Alark Shripad, Prof. Harshal B. Nemade and Prof. Rajaram Swaminathan



**COVID19 Vaccine Development**  
Inventor - Sachin Kumar

## PROJECT FUNDING



## MAJOR BREAKTHROUGHS

### PROF. AIYAGARI RAMESH

Multifunctional synthetic amphiphiles were designed, therapeutic for implant-associated (MRSA) infections and skin wound healing.



### PROF. ARUN GOYAL

Achieved computationally guided drug repurposing to combat the COVID-19 infection.

### PROF. BIMAN B. MANDAL

(TECHNOLOGY LICENSED TO INDUSTRY)  
Antimicrobial formulation as disinfectant - to Industry i.e. M/S Berger Paints India Ltd. in 2020; Silk based gel for wound healing - to Industry i.e. M/S Stanvac Med in 2020.



### PROF. SACHIN KUMAR

Signed an agreement with Hester Biosciences Pvt Ltd to develop vaccine against COVID-19



**PROF. SANJUKTA PATRA**  
Strategic planning for water resources (SPRING)



**PROF. S. S. GHOSH**  
Development of FET-based POC devices



### PROF. VIBIN RAMAKRISHNAN

Oral intake of AR (Amalaki Rasayana-ayurvedic rejuvenate) was found to improve cardiac function



## Awards and Recognition



**Prof. Biman B. Mandal**  
S. Ramachandran NATIONAL BIOSCIENCE AWARD for Career Development 2021



**Prof. Lalit M. Pandey**  
Shastri Covid-19 Pandemic Response Grant (SCPRG) Shastri Indo-Canadian Institute Innovative Solutions



**Prof. Latha Rangan**  
Elected Fellow Biotech Research Society of India (BRSI) Contribution in area of Plant Biotechnology



**Prof. Rakhi Chaturvedi**  
Prof. F.C. Steward Memorial Lecture Award. Plant Tissue Culture Association (India).



**Prof. Sachin Kumar**  
ICMR- Dr. J. B. Srivastav Oration Award. ICMR Virology Research Citation/Cash.



**Prof. Utpal Bora**  
Top Cited Paper Award, 2020 as an author of one of the top 1% most-cited papers over 2017-2019 by IOP publishing.

## Memberships and Committees

- Prof. Arun Goyal** - Member of Assessment Committee Meeting at CIAB ; Invited for evaluation of research proposals for various awards.
- Prof. Biman B. Mandal** - Elected "President" of STERMI ; Inducted as Editorial Board member of various prestigious journals.
- Prof. Latha Rangan** - Council Member The Inter-Academy Panel for Women in STEMM 2021-2025 ; Elected member of Board of Governors BRSI.

STUDENTS BSBE



MTECH'21

GATE 2021 BT Paper



Shubham Gaurav  
24 Rank



Shambhavi Pandey  
26 Rank

Samsung Fellowship



Nisha S. Barge



Pratiksha Bhatt

PMRF FELLOWSHIP

Prime Minister Research Fellowship (PMRF) encourages indigenous researches in frontier areas of Science and Technology which are of national interest. It provides the platform for scholars to conduct highly motivated research. Also, the research grant gives the scholar an opportunity to grow as an independent researcher.

**Aviral Kumar, Kalpana K. Pradeep and Kumar Sundaravadivelu** got selected for this prestigious fellowship in the year of 2020.



STUDENT'S ACHIEVEMENTS

RECOGNITION AWARDS

- Dimple Chouhan
- Kamal Shokeen
- Kedar Sharma
- Poulami Datta
- Priyanka Das
- Shambhavi Pandey
- Sudhir Morla
- Vartika Srivastava
- Vivek Prakash

POSTER AWARDS

- Rajib Shome
- Tanmayee Samantaray
- Tasrin Shahnaz
- Vishnu Priyan

FELLOWSHIP/GRANTS

- Aman Bhardwaj
- Lightson Ngashangva
- Pratik Nag
- Sudarshan Gogoi



Congratulations to **Kamal Shokeen**, a research scholar under Dr. Sachin Kumar for being awarded "Deepika Phukan Oncology Research Grant" Award of BCCI for project entitled "Recombinant Newcastle Disease Virus based Breast Cancer Therapy: A Novel Oncolytic Viral Approach."

PLACEMENTS

28 03

B.Tech M.Tech



BTECH'21

NEWS & EVENTS



IIT Guwahati and Hester have collaborated to develop a recombinant vaccine against virus.(FILE)



The intubation box is easier to manufacture and deliver amid the lockdown.



IIT Guwahati Researchers Develop Methods To Detect, Prevent Coronavirus



IIT Guwahati Researchers Discover Methods To Prevent Memory Loss Due To Alzheimer

<b>MOU'S</b>	B. Borooh Cancer Institute Guwahati	India	Institute Collaboration
	North East Cancer Hospital	India	Institute Collaboration
	Manipal Academy of Higher Education	India	Prof. Ajaikumar B. Kunnumakkara
	Delta University of Science and Technology	Egypt	Prof. Ajaikumar B. Kunnumakkara
	University of Minho	Portugal	Prof. Biman B. Mandal
	Institute National Da La Sante Et De La Recherche Medicale	France	Prof. Kannan Pakshirajan
	Dalhousie University	Canada	Prof. Sachin Kumar



BITES

**Prof. Sachin Kumar**, instituted a fellowship in the loving memory of his mother to be given to a student of BTech of BSBE Dept securing highest SPI in 3rd year.

Congratulations to **Mr. Kamleswar C** for winning the Best Thesis Award (M.Tech), for session 2019-2020. Supervisor: **Prof. Biplab Bose**

Congratulations to **Dr. Prerana Gogoi** for winning Best Thesis (PhD) Award, for session 2019-2020. Supervisor: **Prof. Shankar Prasad Kanaujia**

Congratulations to **Mr. Aman Bhardwaj** for being awarded with International Cooperative Exchange Program for nine months at **National Insititute for Materials Science, Japan**.

ALUMNI

**Dr. Nand Kishor Roy**, an alumnus of IIT Guwahati from the Dept. of BSBE donated 300 numbers of N95 masks through Amazon India addressed to the HOD BSBE to be distributed.

SEMINARS / WORKSHOPS / CONFERENCES / SHORT-TERM COURSES ORGANISED

- **Prof. Biman B. Mandal and Prof. Uttam Manna** : 6th National Workshop on "NEMS/MEMS and Theranostic Devices" NWNTD 2020.
- **Prof. Biman B. Mandal** (Co-convener) jointly with IITD, IISC : 30th SBAOI Annual Meeting, 12th STERMI Annual Meeting & International Virtual Conference on Biomedical Materials Innovation ICBMI-2020.
- **Prof. Biplab Bose** : Course on Measuring and Modeling the Epithelial/Mesenchymal Plasticity (EMP) Spectrum.
- **Prof. Bithiah G. Jaganathan and Prof. G. Krishnamoorthy** : Workshop on Flow Cytometry Techniques & Applications

EDITED BOOKS

