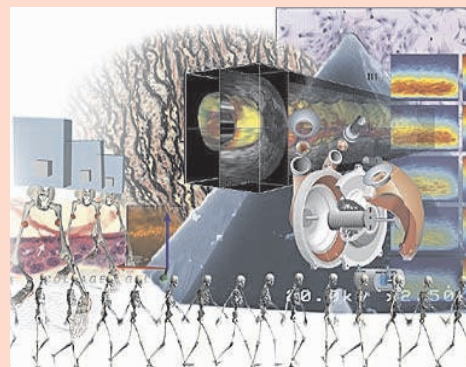


BIOMED NEWS 2021-2022

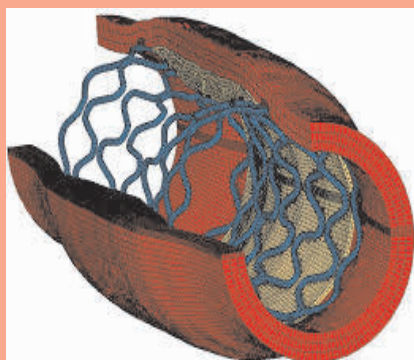


Volume-I
JULY TO DECEMBER -2021



Biomedical Engineering

JIS COLLEGE OF ENGINEERING, KALYANI
(AN AUTONOMOUS INSTITUTE)



EDITORS:
DR. KARABI GANGULY
MS. SWATI SIKDAR
STUDENT COORDINATOR:
UTSAB RAY



Vision:

The Vision of Biomedical Engineering Department is to pioneering excellence in Biomedical engineering education and research in undergraduate and post graduate level, nationally and internationally to provide society with world-class competitive professional in Biomedical Engineering.

Mission:

M1: To impart knowledge and skills necessary for professional development of graduates in Biomedical Engineering.

M2: To provide continuous up gradation of technical education in the field of medical sciences with strong academic progression.

M3: To propagate creativity, responsibility, commitment and leadership qualities and exhibit professional ethics and values in the mind of Biomedical Engineering graduates.

Programme Educational Objectives (PEOs):

PEO1: To prepare students for diverse career in engineering and science including human body systems that build career and pursue higher studies in Biomedical Engineering.

PEO2: To identify, analyze and solve the problems by applying principles of Biomedical engineering with novelty and updated knowledge in the development of product/process/technique related to healthcare to meet the societal demands.

PEO3: To develop skills necessary for communications in their professions and to impart value added continuing education for sustained growth beneficial for society.

PEO4: To apply the acquired practical knowledge for effective teaching, research, development and entrepreneurship in biomedical field.

PEO5: To provide opportunity for students to work as part of teams on multidisciplinary projects with the multifaceted aspects of using modern tools.

Program Specific Outcomes (PSOs):

PSO1: Identify, analyze and solve the real life problems by applying principles of Biomedical engineering with novelty.

PSO2: Design, develop and specify the mathematical model to understand the inter-relation among various Physiological systems.

PSO3: Investigate, implement and demonstrate various applications of the engineering and physiological subsystems in designing and developing human body systems.

ONE MONTH INTEGRATED SUMMER INTERNSHIP AND INDUSTRY TRAINING PROGRAM ON SOFTWARE IN HEALTHCARE (OCT - NOV - 2021

The screenshot shows a video conference window. On the left, a presentation slide titled "Convolution" is displayed. It includes a list of bullet points: "Large image formation process are described in form of convolution." and "Here, h is defined as kernel". The slide also features a diagram illustrating the steps of 1D convolution: "Define f and h", "Flip h about y axis", "Shift h by amount x and calculate overlap integral", "Repeatedly shift h by x and calculate overlap integral", and "Continue for all values with non-zero overlap". A formula for the convolution integral is shown:
$$f(x) * h(x) = \int_{-\infty}^{\infty} f(x')h(x-x')dx'$$
. The diagram shows two 1D signals, $f(x)$ and $h(x)$, being shifted relative to each other to calculate the integral. The bottom of the window shows a toolbar with icons for Unmute, Start Video, Participants (34), Share Screen, Chat, Reactions, Settings, and More. On the right, a "Participants (34)" list is visible, showing names like SWASTIKA CHATTERJEE (Me), Phoenix Global (Host), Avinash, Sarowar Jaman, Susmi, Diptayan Mukherjee, Sonali Sarkar, Twisa Sarkar, Dipayan Mondal, Dwelapayan Roy, Sujaya Das, Samim Aktar, Anish, Dona Nandi, Iqra faizyab, Aditya Saha, Shaini Das, and Pooja Gupta. Each name has a small icon indicating their status (e.g., muted, video on).

AICTE Sponsored Short Term Training Program: "ADVANCED TECHNOLOGY TOBRIDGE THE GAP BETWEEN MEDICAL SCIENCE AND ENGINEERING FOR THEBENEFIT OF MANKIND"

The Department of Biomedical Engineering, JIS College of Engineering has organized AICTE sponsored **ONLINE Short Term Training Programme (STTP)** for faculty members and researchers across the country.

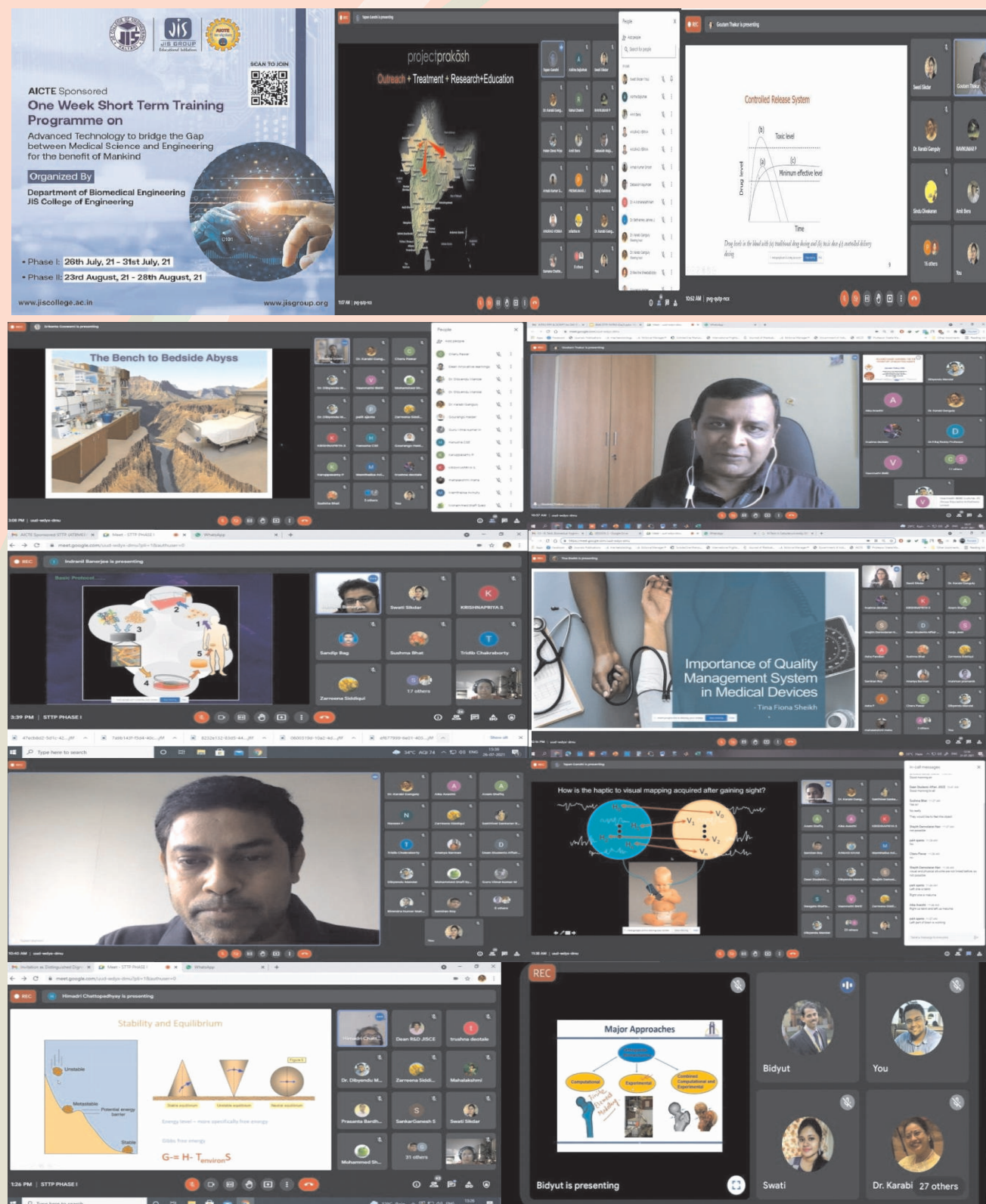
The title of the event is **AICTE Sponsored STTP on "ADVANCED TECHNOLOGY TO BRIDGE THE GAPBETWEEN MEDICAL SCIENCE AND ENGINEERING FOR THE BENEFIT OF MANKIND"**. Under pandemic situations, the entire event has been conducted online and organized in two phases (6days/phase) in the month of July, 2021(**Phase-I: 26th – 31st July, 2021**) and August, 2021 (**Phase- II:23rd – 28th August, 2021**). In each phase a different batch of registered participants would be present.

ABOUT THE STTP

Advanced medical technology and engineering have enabled the rapid development of miniaturized, sophisticated, accurate analytical, diagnostic and therapeutic devices to save lives, alleviate suffering, and to provide effective and better care to mankind. Academicians, scientists and researchers of Biomedical Engineering and allied domains continuously strive to evolve cutting-edge technology by improved implant and instrument design, development and delivery through their researches and engineering innovations to serve humankind and society.

Department of Biomedical Engineering, JISCE

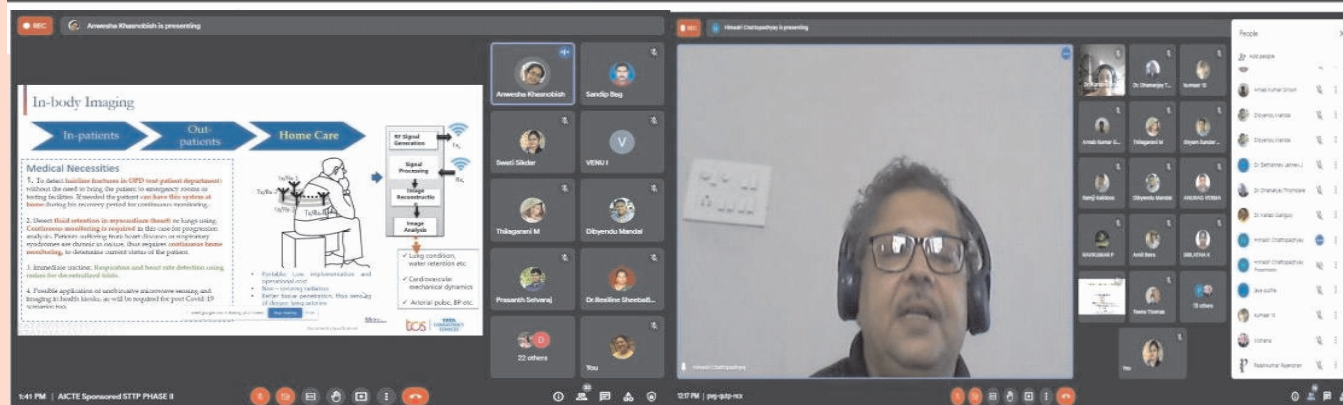
This STTP is aimed at familiarizing the participants with the latest trends and techniques in usage, in the state-of-the-art medical equipment engineering processes, which yield the best possible technological support with high end medical aid and treatment modalities. The vision of this STTP is to inculcate a wide spectrum, in-depth knowledge of futuristic medical technology viable to bridge the gap between medical science & engineering for enhanced health care service.



Eminent Speakers from prestigious organizations delivering insightful talks in the STTP sponsored by AICTE & organized by Dept. of BME, JISCE

Speakers' Details

Name of the Speakers	Affiliation	Topic of Lecture
Dr. Dinesh Bhatia	NEHU, Shillong	Applications of Blockchain and IoT in healthcare domain
Prof (Dr.) Himadri Chattopadhyay	Jadavpur University, Kolkata	Bioengineering from the perspective of Thermodynamics
Dr. Indranil Banerjee	IIT Jodhpur	Tissue Engineering: Where are we heading?
Dr. Kunal Pal	NIT, Rourkela	Caffeine and Its Effects on Electrical Activity of Heart
Dr. Anwesha Khasnobish	TCS Innovation Lab	Bioradar for people sensing: A futuristic bridge
Dr. Moumita Mukherjee	Adamas University	Terahertz Technology in Healthcare
Dr. Bidyut Pal	IIEST, Shibpur	Advances in Orthopaedic Biomechanics
Prof (Dr.) Abhijit Chanda	Jadavpur University, Kolkata	Biomaterials & Its Future Prospect
Dr. Srikanta Goswami	NIBMG, Kalyani	Disease Biomarkers-Bridging the Gap between Basic Science and its Application
Mr. Sandeep Chatterjee	International Art of Living Foundation, Thailand	Mind 2.0
Mr. J.K.L. Prasad	AD Instruments, New Delhi	Physiological Parameters Systems Related to signal Processing
Mr. Bodhisattva Sensarma	Siemens Healthineers Pvt. Ltd., Kolkata	X-Ray, Ultrasonography, CT, Mammography, C-arm IITV units and Angiography/DSA imaging systems
Dr. Goutam Thakur	Manipal Institute of Technology, Karnataka	Bio-polymer based carriers for the transport of bioactive agents
Mr. Shajith D. Nair	Ministry of Public Health Qatar Government	Anaesthesia; Pre-Operative Ward; Post-Operative Ward; ICU; CSSD;
Padmashree Prof. (Dr.) Ajoy Ray	JISIASR, Kolkata	Molecular Imaging and Applications in disease diagnosis
Dr. Tapan Kumar Gandhi	IIT, Delhi	Engineering, Medicine & Society: Challenges & Opportunities
Ms. Tina Fiona Sheikh	Siemens Healthineers Pvt. Ltd.	Importance of Quality Management System in Medical Technology

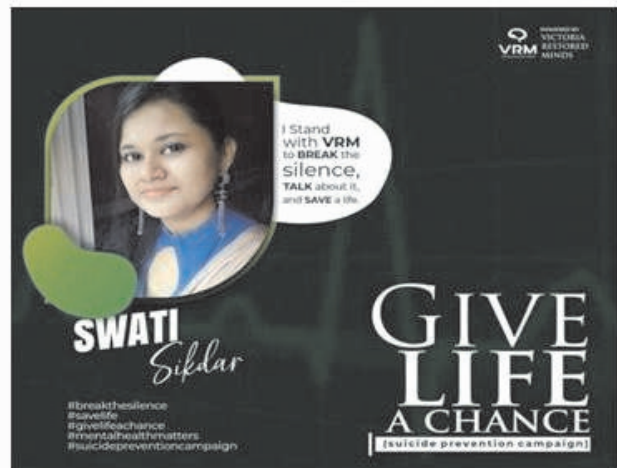


Faculty Achievement

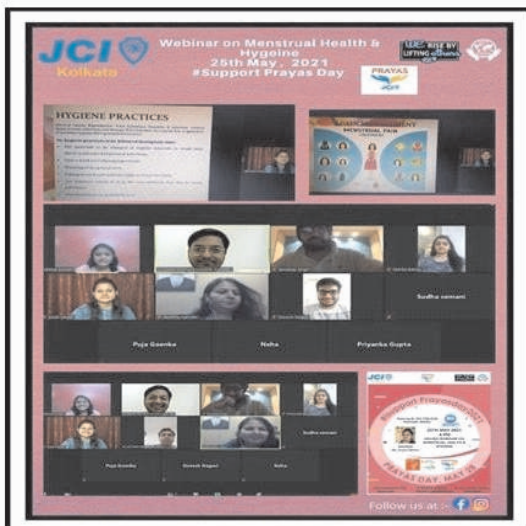
- **Dr. Karabi Ganguly** – successfully completed the ATAL FDP on Drug Engineering from 28.06.2021-02.07.2021
- **Dr. Sandip Bag-** Successfully completed the Innovation Ambassador training (Foundation Level) conducted by MoE's Innovation Cell & AICTE dated 30.07.2021
- **Dr. Sandip Bag** – successfully completed the ATAL FDP on RECENT TRENDS IN BIOMEMS & MICRODEVICES from 20.08.2021-24.08.2021
- **Swati Sikdar** - Delivered an Invited Talk on “Overcome Stage Fear” as a part of Mental Wellness Program in their For the World project dated 31.08.2021
- **Dr. Karabi Ganguly** - The Team Nenny Sigh won the AICTE- Chhatra Vishwakarma Award 2020 under her Mentorship. Awarded on 31.08.2021
- **Dr. Meghmala Dutta, Ms. Sayanti Guha, Dr. Howa Begam, Swati Sikdar-** Successfully completed AICTE Sponsored STTP on Simulation with MATLAB- from Device to Circuit during 20.09.2021 to 25.09.2021.
- **Dr. Dibyendu Mandal** - Completed the course and earned Certificate in Anatomy: Cardiovascular, Respiratory and Urinary Systems on 1.10.2021
- **Dr. Karabi Ganguly** - Completed the course and earned Certificate in Anatomy: Cardiovascular, Respiratory and Urinary Systems on 1.10.2021.
- **Swati Sikdar** - Completed the course and earned Certificate in Anatomy: Cardiovascular, Respiratory and Urinary Systems on 27.10.2021
- **Swati Sikdar** – successfully completed AICTE sponsored FDP on UHV in Education from 25.10.2021-29.10.2021
- **Dr. Sandip Bag** - successfully completed ATAL FDP ON HEART RATE VARIABILITY from 25.10.2021-29.10.2021
- **Dr. Sandip Bag** – was invited as guest speaker in the event Invited Talk in SSCI Virtual Satellite Meeting on Cognitive & Neuro developmental Disorders at NEHU-IBRO on 31.10.2021
- **Dr. Karabi Ganguly** – was invited as guest speaker in the interactive session on Biomedical engineering in National Television, DD Bangla on 12.11.2021.
- **Dr. Karabi Ganguly & Swati Sikdar** – got their patent published on Portable, Currency Sterilizable Device by IPR-Govt. Of India on 13.11.2021.
- **Dr. Karabi Ganguly** – was invited as HoD-BME for signing the MOU for BME Dept between JIS Group and Capgemini, Bangalore on 30.11.2021.
- **Dr. Sandip Bag** – successfully completed the ATAL FDP on 3D printing and design of metals and polymers from 06.12.2021-10.12.2021.
- **Dr. Sandip Bag** – successfully completed the ATAL FDP on “RECENT TRENDS IN BIOMEMS & MICRODEVICES” from 13.12.2021-17.12.2021



Swati Sikdar (AP-BME)
Winner in Intra College Debate Competition
organized by JISCE



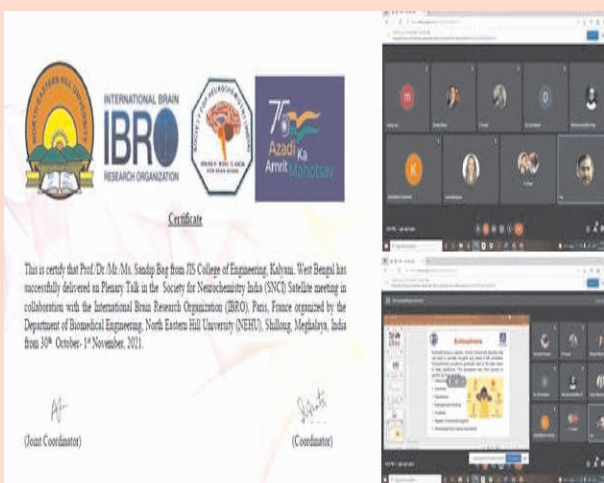
Swati Sikdar (AP-BME)
Was the guest Speaker in GIVE LIFE A CHANCE
Program organized by VRM-Nigeria



Swati Sikdar (AP-BME)
Delivered Invited Talk in National Webinar conducted by JCI-Kolkata



Dr. Sandip Bag (Asso. Prof -BME)
Reviewer of the JOURNAL of BIOMEDICAL MATERIALS
RESEARCH [WILEY]



DR. SANDIP BAG, ASSO. PROF-BME
AS INVITED SPEAKER IN NEHU-IBRO



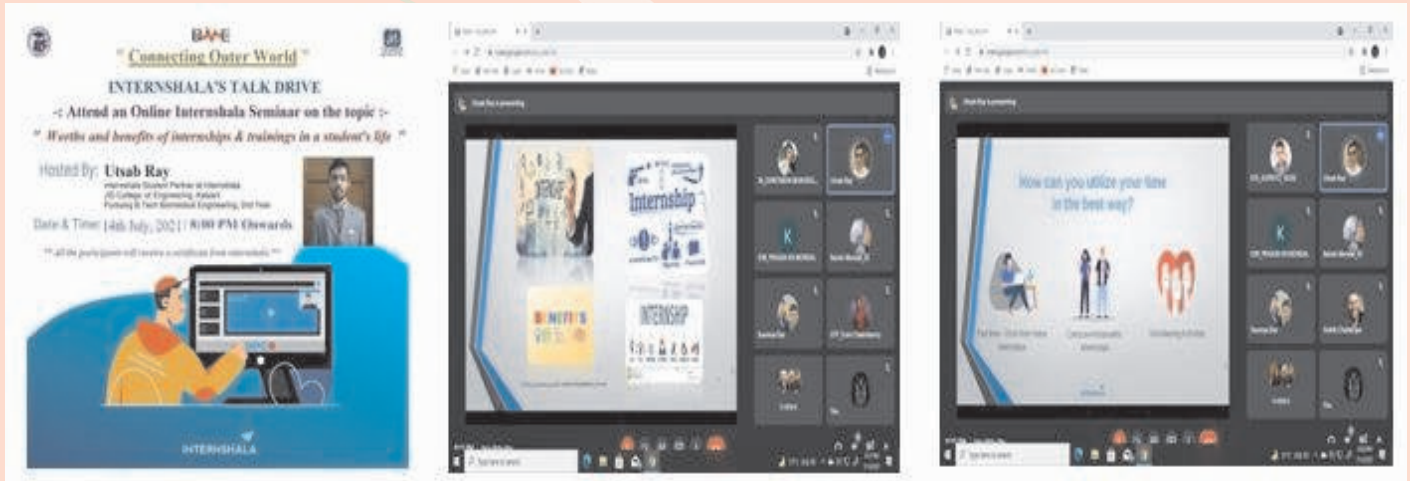
DR. KARABI GANGULY, HOD-BME AS INVITED
SPEAKER IN NATIONAL TELEVISION-DD BANGLA

Student Achievement: -

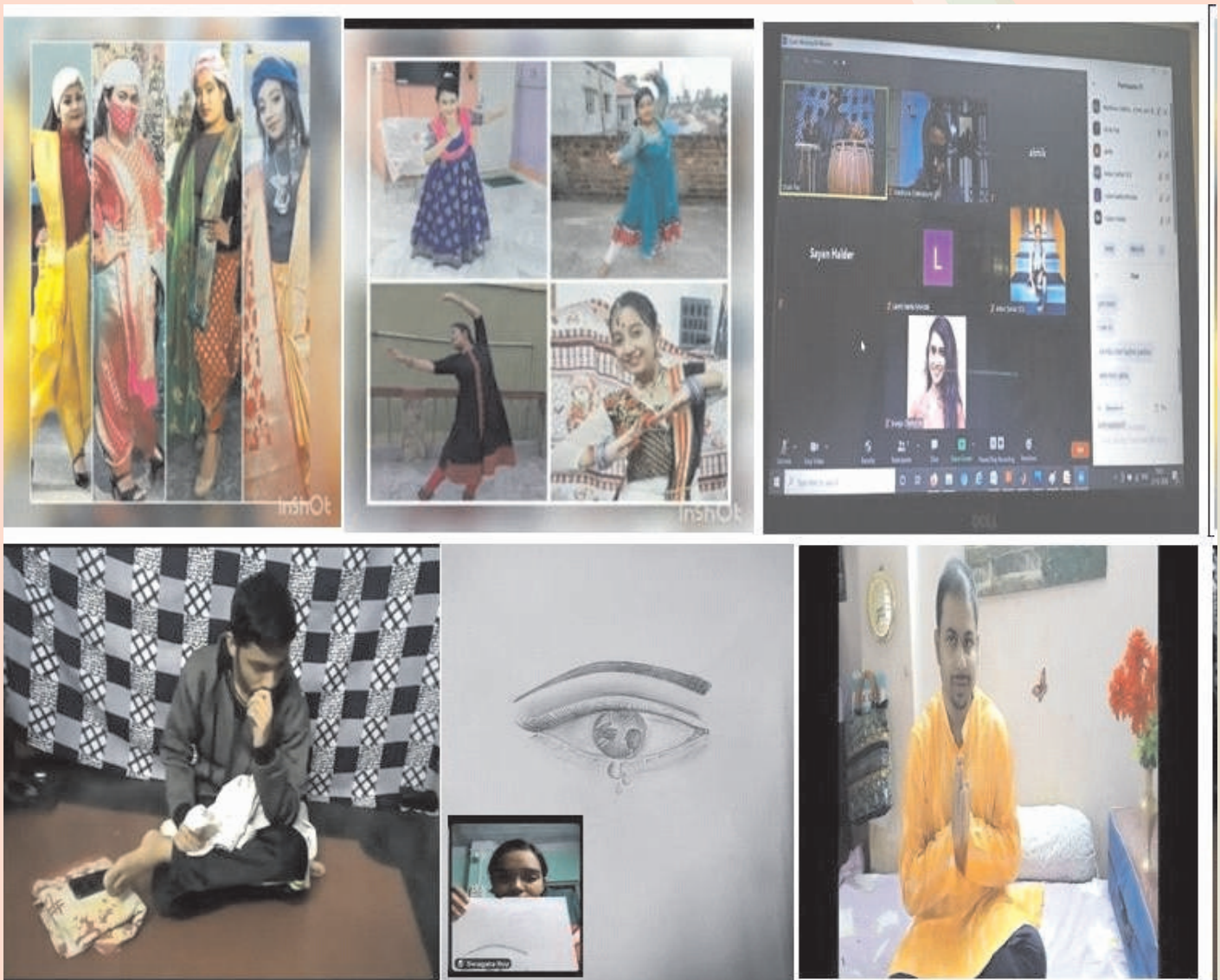
Sl.	Student Name	Stream & Year	Achievement	Venue	Date
1	Swastik Barat	BME pass out	Qualified the entrance exam	The Technical University of Munich, Germany	July 2021
2	Himali Barman	BME pass out	Qualified the entrance and got admission	VIT	July 2021
3	Manjeer Bhattacharya	BME final year	Qualified the entrance and got admission	University of Strathclyde, Glasgow	July 2021
4	Swarup Sonar	BME final year	Qualified the entrance and got admission	SRM	July 2021
5	Parthapratim Mondal	BME final year	Qualified the entrance and got admission	SRM	July 2021
6	Shubhanshu Sarkar	BME final year	Qualified and taken admission in IEST Shibpur	IEST	August 2021
7	Souptika Patra	BME final year	Qualified and taken admission in MBA- NSHM	NSHM	September 2021
8	Sonali Sarkar	BME 2 nd year	Passed Online Quiz on Programming Skills	Dept. of CSE, K.S.Rangasamy College of Arts and Science (Autonomous)	2 nd September 2021
9	Roshni Dey	BME 2 nd year	Passed Online Quiz on Programming Skills	Dept. of CSE, K.S.Rangasamy College of Arts and Science (Autonomous)	2 nd September 2021
10	Utsab Ray	BME 3 rd year	Internshala Talks Icon	Internshala	28 th July 2021
11	Swarnendu Maiti Sourav Saha Utsab Ray Tufan Paul	BME 4 th year BME 4 th year BME 3 rd year BME 3 rd year	Winner in AICTE-CVA	AICTE	31 August 2021
12	Shaistah Mukhtar, Purbayan Paul, Suvajit Das, Udbhasita Pal, Sujaya Das, Aditi Neogi	BME 4 th year BME 4 th year BME 4 th year BME 4 th year BME 4 th year BME 2 nd year	Winner in Online JISTECH 2K21	JISCE	30 th September 2021 – 01 st October 2021
13	Swarnendu Maiti, Dipayan Mandal, Moupana Das, Tufan Paul, Sonali Sarkar	BME 4 th year BME 4 th year BME 4 th year BME 4 th year BME 2 nd year	1st Runner Up in Online JISTECH 2K21	JISCE	30.09.2021 – 01.10.2021
14	Sourav Saha, Swagata Roy, Jayita Saha, Deborima Das, Sandip Jana	BME 4 th year BME 3 rd year BME 3 rd year BME 3 rd year BME 3 rd year	2nd Runner Up in Online JISTECH 2K21	JISCE	30.09.2021 – 01.10.2021
15	Swarnendu Maity	BME 4 th year	Has authored and presented paper in ICSTSD 2021	JISCE	28.10.21

Department of Biomedical Engineering, JISCE

Sl.	Student Name	Stream & Year	Achievement	Venue	Date
16	Utsab Ray	BME 3 rd Year	Has authored and presented paper in ICSTSD 2021	JISCE	28.10.21
17	Swatika Chatterjee, Prodyut Karmakar	BME 2 nd year	Has authored and presented paper in ICSTSD 2021	JIS Group	28.10.21-29.10.21
18	Utsab Ray	BME 3 rd Year	Participated in 'Ideation: Model Display Competition' in Eastern Regional Conclave of Students' Chapters of The Institution of Engineers (India) on "Role of Budding Engineers in Smart and Sustainable Technologies	JIS Group	29.10.21-30.10.21
19	Susmi Saha	BME 2 nd year	Secured Elite+Gold certificate with 100% marks from NPTEL and declared as Topper of 1% in the course Wildlife Ecology	NPTEL	30.11.2021
20	Utsab Ray	BME 3 rd Year	First position in Intra-College Quiz Competition INQUIZITIVE for JIS Spirit 2021	JISCE (Judges are External for each event)	Nov-Dec, 2021
21	Debosmita Mondal	BME 3 rd Year	First Position in Intra-College Recitation Competition for JIS Spirit 2021		
22	Sneha Kabasi	BME 3 rd Year	Second Position in Intra-College Recitation Competition for JIS Spirit 2021		
23	Utsab Ray	BME 3 rd Year	First Position in Intra College String Symphony (Instrumental - Any Instrument – Solo) Competition for JIS Spirit 2021		
24	Dipal Singh & Team	BME 3 rd Year	First Position in Intra College Band Competition for JIS Spirit 2021		
25	Utsab Ray & Team	BME 3 rd Year	Second Position in Intra College Band Competition for JIS Spirit 2021		
26	Debarima Das, Swagata Roy	BME 3 rd Year	Winner in Feat Beat Intra-College Dance Competition for JIS Spirit 2021		
27	Asmita Chakraborty Anwesha Chakraborty	BME 3 rd Year	Second Position in Feat Beat Intra-College Dance Competition for JIS Spirit 2021		
28	Asmita Chakraborty Anwesha Chakraborty Arijit Kumar	BME 3 rd Year	First position in Intra College Fashion Show for JIS Spirit 2021		
29	Debarima Das, Swagata Roy	BME 3 rd Year	Second position in Intra College Fashion Show for JIS Spirit 2021		
30	Asmita Chakraborty	BME 3 rd Year	First position in Intra-College Solo Dance (Malang-e-Mridang) for JIS Spirit 2021		



B.TECH BME Students achievement as Internshala Student Partner



B.TECH BME Students achievement in various extra-curricular activities

Faculty involvement in Conference/ Seminar/ Workshop organized at JISCE, Kalyani

- **Dr. Sandip Bag, Dr. Dibyendu Mandal** - organizing committee member, Webinar on Being Creative- Dekhi Sikhi Haate Kolom e Banai held on 18.07.2021
- **Dr. Karabi Ganguly, Swati Sikdar**, - organized One Month Integrated Summer Internship and Industry Training Program on Software in Healthcare for B.Tech BME Students (25.10.2021- 25.11.2021)
- **Dr. Karabi Ganguly, Dr. Dibyendu Mandal**, - coordinated Industry Collaboration for Healthcare Project with MEDILABZ on 20.11.2021
- **Swati Sikdar and Dr. Dibyendu Mandal** – coordinated the Peer learning session in BME Dept. on 24.11.2021

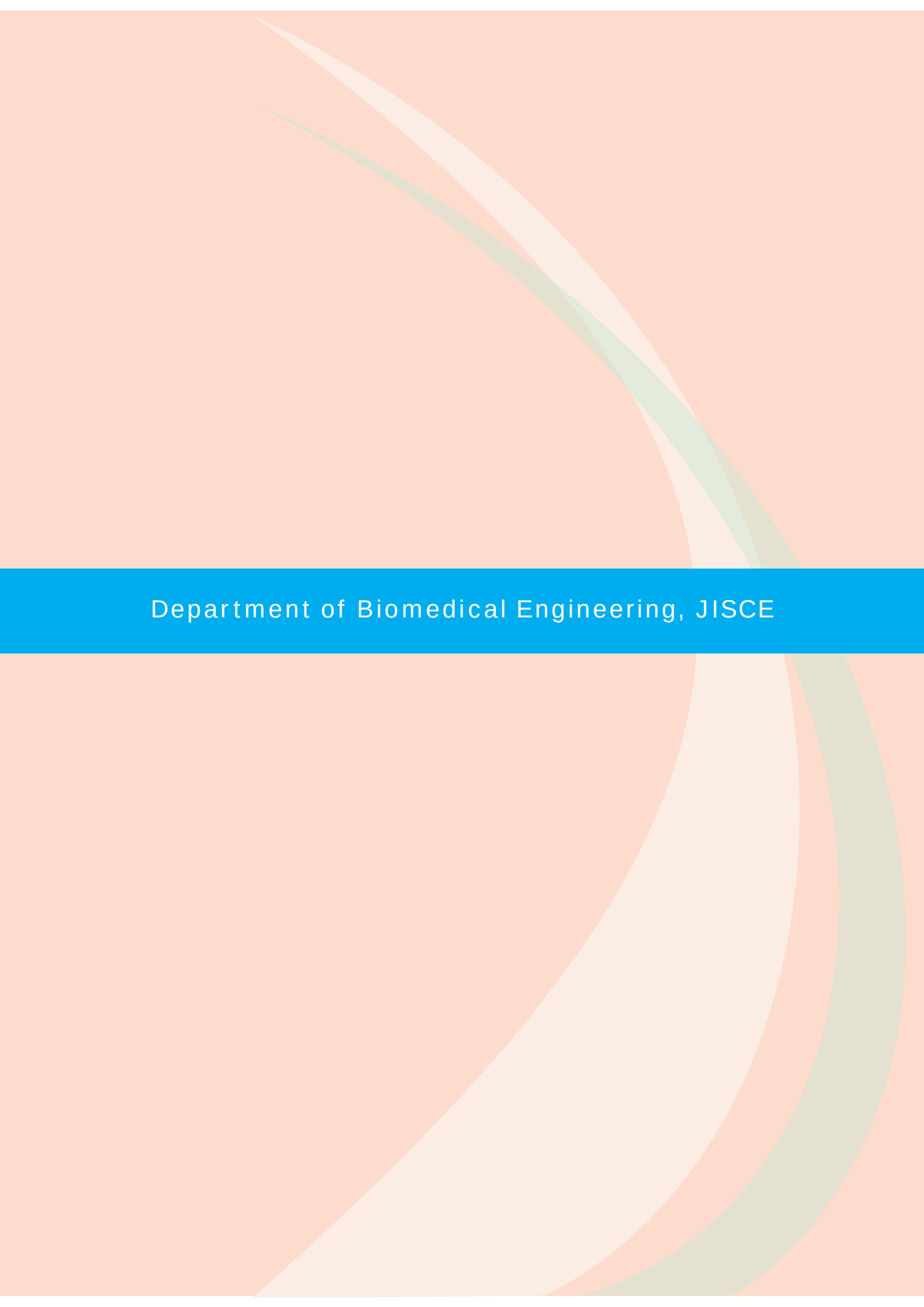
Publications by Faculty Members:

Book Chapters:

- **S Bag:** Modern Technological Intervention Advancements for the Physically Challenged and Disabled Population *Chapter Title: Brain Stimulation: An effective therapy for Neural Disorder*. Book Chapter (CambridgeScholar)2021(Pages 37-62). ISBN: 1-5275-7508-X ISBN13: 978-1-5275-7508-0
- **S Sikdar, S Bag, K Ganguly** : Electronic Devices, Circuits, and Systems for Biomedical Applications 1st Edition *Chapter Title: An Overview to the Dynamics of Telemedicine & Robotics for the Benefit of Mankind*. Book Chapter (Elsevier)2021(Pages 349-363) 978-0-323-85172-5
- Jasjit S Suri, **Karabi Ganguly and Swati Sikdar** : Flow Dynamics and Tissue Engineering of Blood Vessels
- *Chapter Title: An artificial blood vessel and its controlling aspects—I*. Published by IGI Global 2021 (PG 12-30) 978-0-7503-2088-7
- **K Ganguly, S Sikdar:** Advances in Medical Physics and Healthcare Engineering *Chapter Title: Insulin Attenuated Estrogen Receptor in Neutrophil Dwindled Synthesis of Maspin in Breast Cancer* Published by (Springer Nature) 2021. 978-981-33-6915-3_16

Journal/Conference Papers:

- **Karabi Ganguly, Swati Sikdar, Sandip Bag, Ipshita Dey, Shubhanshu Sarkar, Swagata Banerjee, Sujata Dey, Himali Barman (2021):** Real-Time Compact Face-Shield with Internet of Biomedical-Things. Scopus Indexed Journal-Journal of Physics: Conference Series IOP Publishing (Vol:1797). ISSN NO: 1742-6596
- **Sandip Bag, Swati Sikdar, Karabi Ganguly, Souradip Banerjee, Parijat Lahiri (2021):** Effective health screening to prevent infection and control the spreading of COVID-19. Scopus Indexed Journal-Journal of Physics: Conference Series IOP Publishing (Vol:1797). ISSN NO: 1742-6596



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