Jyoti & Bhupat Mehta School of Health Sciences and Technology

Quarterly Report Q1 (Jan 25 - March 25)

Awards & Honors:

Dr. Raju Bej, Reviewer recognition certificate from Wiley, Journal: Angewandte Chemie (6); Macromolecular Materials and Engineering (1), March, 2025.

One of the joint proposals submitted by Prof. S. Kanagaraj, JBMSHST, IITG, Prof.(Dr) Ashok Puranik, Director, AIIMS Guwahati and Dr. Jodumoni Kachari, CVS Guwahati has been awarded by ICMR under the 'First in the World Challenge' call.

Research Grant Applications:

Funding Agency: DST "Scheme for Young Scientist and Technologist (SYST)"

PI: Dr. Raju Bej

Project Title: Development of Hydrogels Mimicking Cervical Mucus for the Entrapment of Sexually Transmitted Pathogens and the Efficient Delivery of Drugs Against Them **Proposed Funding amount**: ~50 Lakh

Funding Agency: DBT "Translational research using Genome India Project Data" PI: Dr. Raju Bej

Co-Pis: Dr. Venkata Pradeep Babu Koyyala (Assam Advanced Healthcare Innovation Institute), Dr. Swapnil Singha (IITG TIDF – BioNEST), Dr. Sridhar Sivasubbu (Karakinos Healthcare Pvt. Ltd.)

Project Title: Development of an Exome-Based Screening Test in Blood for detecting high-risk individuals with Gallbladder Cancer in the High Incident Northeast Indian Population Utilizing the Genome India Project Dataset.

Proposed Funding amount: ~50 Lakh

Research Projects:

Design and development of Minimally Invasive Internal cardiac massager device using vine robotics.

S. Kanagaraj

Patents:

J. Antony Jefri, Mahesh Jinkala, Kishore Kumar Padi, S. Kanagaraj, Ashok Puranik, Phulen Sarma, Vineet Mahajan.

Title: Cardiac Massager Device,

Application No. 202531015968

Date of filing: 24-02-2025

Status (Applied)

Journal Publications:

- 1. Das, N., Srivastava, R., Roy, S., De, A. K., & Kar, R. K. (2025). Physico-chemical properties and biological evaluation of graphene quantum dots for anticancer drug susceptibility. *Colloids and Surfaces B: Biointerfaces*, 245, 114322. https://doi.org/10.1016/j.colsurfb.2024.114322
- 2. Das, S., Krishnamoorthy, J., & Kar, R. K. (2025). Estimating the structural and spatial variables of allantoinase enzyme critical for protein adsorption. *Biochemical and Biophysical Research Communications*, 743, 151-161. https://doi.org/10.1016/j.bbrc.2024.151161
- 3. Kotal, A., Das, S., Sarangi, S., Das, N., & Kar, R. K. (2025). Image Analysis for Analytical and Microbial Studies. *Journal of Chemical Education*. https://doi.org/10.1021/acs.jchemed.4c01430
- 4. Degen, G. D., Stevens, C. A., Cárcamo-Oyarce, G., Song, J., Bej, R., Tang, P., Ribbeck, K., Haag, R., McKinley, G. H. (2025) *PNAS*, *122*, e2415927122. https://www.pnas.org/doi/abs/10.1073/pnas.2415927122

Conferences (Attended):

Dr. Raju Bej & Dr. Rajiv Kar

Attended International Conference of ACS on Campus Organized by IIT Guwahati and American Chemical Society (ACS) on March 13, 2025.

Number of participants: > 250

Dr. Erwin Fuhrer

Delivered a talk on "Point-of-Care Diagnostics in Smart Cities & Villages: Challenges and Opportunities of Low-Field MRI" in International Smart City Workshop 2025 (SCW 2025) on March 03-04, 2025.

Link: https://www.ee.iitm.ac.in/smartcity-2025/index.html



Invited Talks:

1. **Dr. Rajiv Kar;** Research Meeting, 3-7 Feb 2025, School of Basic Sciences, IIT Bhubaneswar, India. Discussed ongoing research work on fluorescence-based sensors for amyloid detection and proposal writing.

2. Dr. Rajiv Kar; Nanoelectronics Roadshow Conference, 27 March 2025 CeNSE, IISc Bangalore, India. Prototype demonstration of sensors, Meeting with MeitY officials and

networking.

3. **Dr. Raju Bej**, Examiner for PhD Viva-voce Examination, (Thesis: Fine tuning of optical and electrochemical properties of peri-functionalized naphthalene dyes using non-covalent interactions), 28th March 2025, Department of Chemistry, IIT Guwahati, India.

4. Dr. Subrata Pramanik, Invited Lecture for ICMR new recruits of North Eastern Region, Quality Council of India, 24-25 March 2025.

Invited Talks:

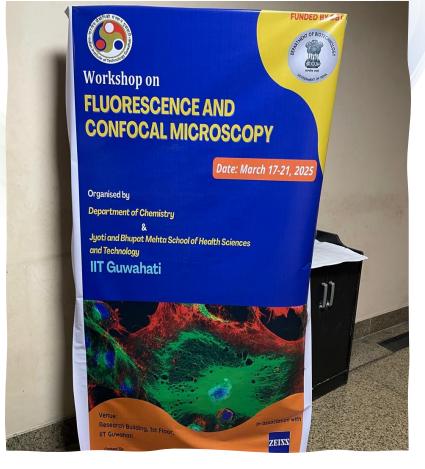
• Dr. Arka Ghosh, Northwestern University, USA delivered an invited talk on "Therapy for moments of Need: The promise of Digital Mental Health Interventions in India", on 21st March 2025.

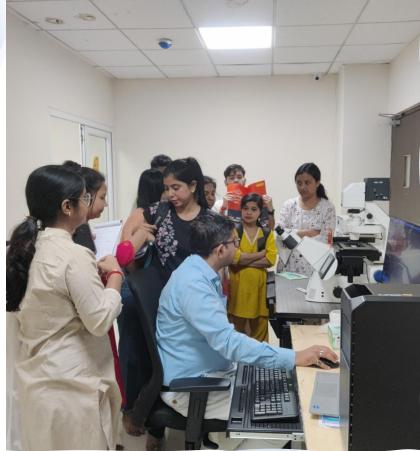


Technical Webinar

 A virtual presentation and discussion on the BD FACS Discover S8 Flow Cytometer by BD Biosciences, organized by Dr. Subrata Pramanik, will be held on 20th March 2025









Workshop:

- Workshop on Fluorescence and Confocal Microscopy
- March 17-21, 2025

Research Highlights:

1. Dr. Kar's group (Bio-sensors and Informatics Laboratory) have published a "Laboratory Experiment" for M.Tech BMSE HT507 Devices and Diagnostics is published in Journal of Chemical Education, American Chemical Society. This is the third laboratory experiment published in an international journal that can be adopted for academic curriculum related to biomedical engineering, nanotechnology, material science, and chemical engineering.

[Source: https://doi.org/10.1021/acs.jchemed.4c01430].

Students' Achievements

PhD Research Scholar: Arpan Kotal

Secured DBT-CTEP International travel grant from Department of Biotechnology, Govt. Of India for attending ACS-SPRING 2025 conference which will be held at SAN DIEOGO, CALIFORNIA.
GRANT NO- DBT/CTEP/02/20241257457

Your Proposal DBT/CTEP/02/20241257457 has been approved



You forwarded this message on Tue 1/7/2025 1:53 PM

Respected Sir/Madam, Mr. Arpan Kotal Indian Institute of Technology Guwahati

Congratulations!

Your proposal with ID DBT/CTEP/02/20241257457 has been approved by DBT as per DBT-CTEP norms.

Below is the committee's remarks:

Recommended

The sanctioned amount subject to actual will be released only on your return to India after participation in the event and on submission of the following documents:

3/16/25, 6:52 PM

Mail - Arpan Kotal - Outlook

Anusandhan National Research Foundation

Anusandhan National Research Foundation (ANRF) (A Statutory Body created by an Act of Parliament - ANRF Act, 2023)

> ANRF 3rd & 4th Floor, Block II Technology Bhavan, New Mehrauli Road New Delhi - 110016

File Number: ITS/2025/000169

Dated: 21-Feb-2025

To

Mr. Arpan Kotal.

Indian Institute Of Technology Guwahati, Guwahati, Kamrup, Assam-781039

Subject: Financial Assistance to Mr. Arpan Kotal for participating in "ACS Spring 2025, USA (23 March, 2025 to 27 March, 2025)"

Sir/Madam

We are happy to inform you that your application seeking financial grant to attend the above mentioned international scientific event has been recommended for support by the Anusandhan National Research Foundation (ANRF). We will provide to and fro economic class air-fare by the shortest route, airport tax, visa fees & registration fees. It is hoped that the support will give you an opportunity to interact with leading international experts in the area. The support, however, is subject to the following conditions.

1. You should not have received financial support during the last three years under this scheme.

- 2. The air tickets are to be booked in economy class at "Best Available Fare" on the date of booking. It may be noted that rescheduling/cancellation charges will not be reimbursed.
- 3. ANRF is directed to instruct the applicant to purchase the air tickets from either of three Authorised Travel Agents viz. i) M/s Balmer Lawrie & Company Limited (BLCL) and ii) M/s Ashok Travels & Tours (ATT) and iii) Indian Railways Catering and Tourism Corporation (IRCTC) vide order no. 19024/03/2021-E.IV dated 31-12-2021 issued by Department of Expenditure, Ministry of Finance. In case of failure of adherence to this quideline, air fare will not be reimbursed.

Also secured International travel Support from Anusandhan National Research Foundation, DST, Govt. of India for attending ACS-SPRING 2025 conference which will be held at SAN DIEOGO, CALIFORNIA. GRANT NO- ITS/2025/000169

Arpan Kotal

Comparative Analysis of Physico-mechanical Properties of Surfactant-Supplemented Graphene Dispersion for Potential Biomedical Application, Frontiers in Nanomaterials Sciences: Aspects in Biotechnology and Chemical Engineering (FINS 2K24),21-23rd December 2024, NIT Patna, Patna, Jharkhand, India.



Arpan Kotal

Presented a paper for oral presentation on "Tuning the surface chemistry of graphene with biocompatible flavin as an alternative to chemical surfactant" in Basic Research in Colloids, Surfactants & Interfaces session at American chemical society (ACS) Spring 2025, San Diego, California, USA on March 23-27, 2025.



आइआइटी गुवाहाटी के नाम रहा बेस्ट प्रेजेंटेशन का अवार्ड

जागरण संवाददाता, पटना : राष्ट्रीय प्रौद्योगिकी संस्थान (एनआइटी) पटना में चल रहे तीन दिवसीय अंतरराष्ट्रीय कांफ्रेंस सोमवार को संपन्न हो गया। इस कांफ्रेंस में इटली, यूएसए, मैंसिक्को, तुर्की आदि देशों के फैकेल्टी व शोधार्थियों ने 128 पेपर प्रस्तुत किए। एनआइटी निदेशक प्रो. पीके जैन के निगरानी में हो रहे इस कांफ्रेंस में नोबेल पुरस्कार के लिए नामित ससायनशासत्री अमेरिका के प्रिंग थामस जे वेबस्टर ने भी शोधार्थियों का वर्चुअल उत्साहवर्धन किया। विभागाध्यक्ष प्रो. सुब्रता दास ने कहा कि मानव जीवन पर पड़ने वाले प्रभाव व पेस्टीसाइट को लेकर भी रिसं चहायता करंगी। समापन समरोह का संचालन सम्मेलन के संयोजक हा. सुब्रत दास और सह-संयोजक हा. सुब्रत दास और सह-संयोजक हा. सुब्रत दास और सह-संयोजक हा. अनुरुद्ध पाल ने किया। इस

सर्वश्रेष्ट प्रस्तुतियों का पुरस्कार

- अर्पण कोटल (आइआइटी गुवाहाटी)
 निमता जायसवाल (सीएसआइआर सीएमईआरआइ, दुर्गापुर)
- डा. सऊदागर डोंगरे (यूएसए)

सर्वश्रेष्ट पोस्टर प्रस्तुति पुरस्कार

- मानसी अग्रवाल (आइआइटी पटना
- लिता कुमारी (सीएमइआरआइ,
- अंजलि सिंह (आइआइटी बीएचयू)
- पांडिल्लापल्ली रमा (आइआइटी हैदराबाद)
- अलका कुमारी (सीएसआईआर एनएमएल, जमशेदपुर)

दौरान कोषाध्यक्ष डा. निक्की स्वेता झा, पूर्व विभागाध्यक्ष डा. खुर्शीद अहमद, डा. मुकेश कुमार चौधरी भी थे।

Raksha Ray, Mtech

Presented a poster titled Development and Evaluation of an AI-Driven Model and Chitosan Hydrogel for Antibacterial Applications: An Integrated Computational and In Vitro Study in the conference International Conference on Pharmaceutical and Biomedical Sciences (ICPBS 2025), March 21–22, 2025, NIPER AHMEDABAD, Gandhinagar, Gujarat, India (International Conference)



Poster Presentation in ICPBS 2025, NIPER AHMEDABAD by Raksha Ray

Arpan Kotal

Received prestigious **Affiliate Membership of ROYAL SCOEITY OF CHEMISTRY** for getting best oral presentation. Membership ID- 785596.

Manjeera PSK, Nivedhya Suresh, Karthikeyan Kandhan (M.Tech)

Second Price on PPT presentation (with ₹20000 cash price)

"THE POLICY MAKER"- a social case study competition organized Under North East social summit of Alcheringa'25.

31st Jan to 2nd February 2025 Held at Indian Institute of technology, Guwahati.





• Letter of Intent (LOI) for the construction of the Academic buildings for the Jyoti and Bhupat Mehta Family School of Health Sciences and Technology has been issued on 17.01.2025.

Building Construction Underway



