IIT Kanpur

Indian Institute of Technology Kanpur

2025

ANNUAL REPORT

Students-Undergraduate Research Graduate Excellence

SURGE

surge.iitk.ac.in

Table of Content
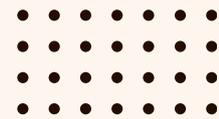
MESSAGE FROM PIC, OFFICE OF OUTREACH ACTIVITIES

Prof. Vimal Kumar
Prof. in Charge, Office of Outreach Activities

Dear Colleagues and Students,

Greetings of the day!

The SURGE Programme of IIT Kanpur aims to encourage undergraduate students to actively engage in research across diverse fields of engineering and sciences. The programme offers a unique opportunity for students to gain hands-on research experience under the mentorship of distinguished IIT Kanpur faculty members, thereby extending their intellectual horizons beyond conventional classroom learning.

The **SURGE Programme was conducted in offline mode**, and a total of **272 participants successfully completed the internship**. The programme has been very well received by both participants and mentors alike. Its success can be attributed to the enthusiastic involvement and dedicated efforts of the SURGE participants, the committed guidance of IIT Kanpur faculty mentors, the generous and unwavering financial support extended by our eminent alumni, and the efficient coordination provided by the Office of Outreach Activities (OOA) staff.

It is noteworthy that by the conclusion of the programme, a significant number of SURGE participants expressed a strong inclination towards pursuing research and development as a career path, which stands as a testament to the effectiveness and impact of the programme.

I extend my **heartiest congratulations to the successful SURGE–2025 participants** on the successful completion of their internships, and to their mentors for providing exceptional guidance and fostering high-quality research outcomes, which have further strengthened the programme.

I would also like to express my sincere gratitude to **DoRA** for the financial support extended to this programme, and I look forward to their continued support in the future for the broader benefit of undergraduate students and the sustained success of the programme.

Last but not least, I convey my heartfelt appreciation to the **mentors, members of the Evaluation Committee, and the OOA staff** for their invaluable contributions in making the SURGE Programme a resounding success.

Thank you.

SURGE PROGRAM – AN OVERVIEW

Students-Undergraduate Research Graduate Excellence (SURGE) program, is an approved internship Program of IIT Kanpur, which runs under the aegis of Office of Outreach Activities, IIT Kanpur. This program provides an opportunity to undergraduate and M.Sc first year students of IITK, Non-IITK and also to the students of SAARC countries, with an objective of giving in-hand experience of technical learning in their field of research.

This year a total of 1450 applications were received for SURGE-2025 internship from IITK, Non-IITK and students SAARC countries. Among these, 272 students (135 IITK students, 136 Non-IITK students, 01 SAARC student) successfully completed their internship.

The SURGE-2025 Program provided financial support to participants selected under the Institute-Funded, Partially Institute-Funded, and Project-Funded categories. During the year, 42 participants received stipends under the Institute-Funded category, 29 participants under the Partially Institute-Funded category, and 32 participants were supported through stipends provided by their respective mentors under the Project-Funded category. In addition, one international participant from a SAARC country (Nepal) received financial support under the program.

The program also recognized outstanding research contributions through the conferral of awards for exceptional quality research work. Awardees received cash prizes under various award categories, along with commendation certificates. Furthermore, all successful participants of the SURGE-2025 Program were awarded participation certificates in recognition of their involvement.

A poster Presentation was organised on 08.07.2025 and 09.07.2025 wherein the participants presented the posters of the work done by them during the internship. The posters were evaluated by the Evaluation Committee members.

On the last day of completion of SURGE-2025 internship, a farewell dinner was organized by OOA, which was held on 11.07.2025 at Type II Community Center, wherein the certificates were distributed to the eligible participants, followed by the dinner. The event was chaired by Prof. Braj Bhushan (Deputy Director) followed by Prof. Vimal Kumar (Professor-in-charge, Office of Outreach Activities).

The occasion was graced by the mentors who guided the participants during their internships, together with members of the SURGE Evaluation Committee who evaluated the posters and assessed the participants' work and reports.

SURGE - 2025
LECTURE SERIES

SURGE Lecture: 1
Are We Building the Right Things?
An Introduction to Human-Centered Design for Engineers

Speaker: Dr. Sruti Raghavan
Department: Computer Science & Engineering, IIT Kanpur

SURGE Lecture: 2
Atomic Collisions- Understanding the Fascinating World of Coulomb Interaction

Speaker: Prof. Aditya H. Kelkar
Department: Physics, IIT Kanpur

SURGE Lecture: 3
Key Scientific Discoveries That Drive Today's Mobile Phones

Speaker: Prof. Ajit K. Chaturvedi
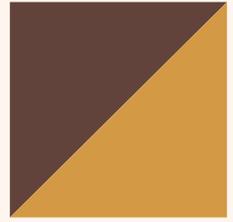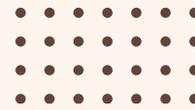**Department: Electrical Engineering, IIT Kanpur**

SURGE Lecture: 4
Platforms and Power: How Digital Business Models Reshape Markets and Strategy

Speaker: Prof. Vimal Kumar
Department: Economic Sciences, IIT Kanpur

SURGE - 2025 AWARDS

To encourage and appreciate the efforts and hard work of the participants, SURGE program provides the following awards to its participants;

- **Dr. Elizabeth and Dr. Verkey Cherian Award**
  1. Overall Best Project: Awarded for producing research of exceptional quality. The award carries a cash prize of ₹5,000 along with a commendation certificate.
  2. Outstanding Poster: Awarded for producing an exceptionally outstanding poster. The award carries a cash prize of ₹5,000 along with a commendation certificate.

- **Best Project Award – Engineering**

Awarded for producing research of exceptional quality in Engineering. The award carries a cash prize of ₹10,000 along with a commendation certificate.

- **Best Project Award – Sciences**

For producing exceptional quality research in sciences, which carries a cash award of Rs. 10,000/- plus a commendation certificate.

Awarded for producing research of exceptional quality in Sciences. The award carries a cash prize of ₹10,000 along with a commendation certificate.

This year following participants were awarded the aforesaid awards under various categories;

1. Dr. Elizabeth and Dr. Verkey Cherian Award for Best Poster

Name	Institute Name	Department	Mentor Name	Project Title
Mr. Sumit Kumar Gupta	NIT Silchar	Chemistry	Dr. Venkata Suresh Mothika	Fabrication of Blatter Radical Porous Polymer Thin Films: Synthesis and Structural Characterization
Mr. Chandan Kumar	IIT Kanpur	Chemistry	Dr. Gurunath Ramanathan	Biodegradation of nitroaromatic using Diaphorobacter sp. DS2 and its genomic variant Diaphorobacter sp. DS2-NT
Mr. Arijit Bhattacharyya	IIT Bombay	Chemistry	Dr. Pratik Sen	Mixed Macromolecular Crowding Effects on Protein Stability
Mr. Kushagra Tiwari	IIT Kanpur	Chemical Engineering	Dr. Akash Choudhary	Influence of electrolyte gradient orientation on colloid transport in dead-end pores

2. Dr. Elizabeth and Dr. Verkey Cherian Award for Best Project

Name	Institute Name	Department	Mentor Name	Project Title
Mr. Sumit Kumar Gupta	NIT Silchar	Chemistry	Dr. Venkata Suresh Mothika	Fabrication of Blatter Radical Porous Polymer Thin Films: Synthesis and Structural Characterization
Mr. Chandan Kumar	IIT Kanpur	Chemistry	Dr. Gurunath Ramanathan	Biodegradation of nitroaromatic using Diaphorobacter sp. DS2 and its genomic variant Diaphorobacter sp. DS2-NT
Mr. Arijit Bhattacharyya	IIT Bombay	Chemistry	Dr. Pratik Sen	Mixed Macromolecular Crowding Effects on Protein Stability
Mr. Kushagra Tiwari	IIT Kanpur	Chemical Engineering	Dr. Akash Choudhary	Influence of electrolyte gradient orientation on colloid transport in dead-end pores

3. Best Project Award for Engineering

Name	Institute Name	Department	Mentor Name	Project Title
Mr. Kushagra Tiwari	IIT Kanpur	Chemical Engineering	Dr. Akash Choudhary	Influence of electrolyte gradient orientation on colloid transport in dead-end pores

4. Best Project Award for Sciences

Name	Institute Name	Department	Mentor Name	Project Title
Mr. Sumit Kumar Gupta	NIT Silchar	Chemistry	Dr. Venkata Suresh Mothika	Fabrication of Blatter Radical Porous Polymer Thin Films: Synthesis and Structural Characterization
Mr. Chandan Kumar	IIT Kanpur	Chemistry	Dr. Gurunath Ramanathan	Biodegradation of nitroaromatic using Diaphorobacter sp. DS2 and its genomic variant Diaphorobacter sp. DS2-NT
Mr. Arijit Bhattacharyya	IIT Bombay	Chemistry	Dr. Pratik Sen	Mixed Macromolecular Crowding Effects on Protein Stability

SURGE-2025 EVALUATION COMMITTEE

S.No.	Name	Department
1	Dr. Navrose	AE
2	Dr. Anusmita Sahoo	BSBE
3	Dr. Jagdish Prasad Sahoo	CE
4	Dr. Salman Ahmad Khan	CHE
5	Dr. M L. N. Rao	CHM
6	Dr. D L V K Prasad	CHM
7	Dr.G. Anantharaman	CHM
8	Dr. Sayak Ray Chowdhury	CSE
9	Dr. Himanshu Yadav	CogSci
10	Dr. Mousami Prasad	DoMS
11	Dr. Malabika Koley	EcoSci
12	Dr. Arnab Bose	EE
13	Dr. Chithra	EE
14	Dr. Amar Agarwal	ES
15	Dr. Jishnu Bhattacharya	ME
16	Dr. Heena Khanchandani	MSE
17	Dr. Soumya Sridar	MSE
18	Dr. Niraj Mohan Chawake	MSE
19	Dr. Shivam Tripathi	MSE
20	Dr. Srinu Gangolu	MSE
21	Dr. Abhijit Biswas	MTH
22	Dr. Subhomoy Haldar	PHY
23	Dr. Aakash Chand Rai	SEE
24	Dr. Pankaj Jain	SPASE
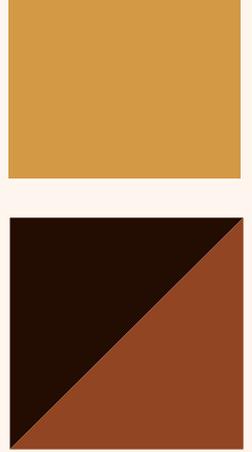
SURGE FUNDING

Institute Funded Category (Support from DORA):

Under this category, financial support is provided by DORA, IIT Kanpur, through alumni donations to a maximum of 60 eligible SURGE participants (from IIT Kanpur and other institutions), along with up to four participants from SAARC countries.

Partial Institute Funded Category (Support from DORA):

In this category, partial financial support from DORA, IIT Kanpur, through alumni donations is extended to a maximum of 60 eligible SURGE participants from IIT Kanpur and other institutions.

This year 42 SURGE participants under Institute Funded category received a stipend for Rs. 16,000/- and 29 participants under Partial Institute Funded category received a stipend for Rs. 8000/- and 01 participant of SAARC country (Nepal) received a stipend for Rs. 16,000/-. The travel expenses of SAARC candidate was also reimbursed. The details of these participants are mentioned below;

Participants from Institute Funded Category

S.No.	Name	Mentor Name	Mentor Dept.	Category
1	Mr. Tharun D	Dr. Ramprasad Potluri	EE	IITK
2	Mr. Arnav Gupta	Dr. Sutanu Gayen	CSE	IITK
3	Ms. Sudarshana Karmakar	Dr. Nisanth N. Nair	CHM	IITK
4	Ms. Khushi Khandelwal	Dr. Subhajit Roy	CSE	IITK
5	Mr. Karmanya Goyal	Dr. Salman Ahmad Khan	CHE	IITK
6	Mr. Rohan Garg	Dr. R. Budhiraja	EE	IITK
7	Mr. Kushagra Tiwari	Dr. Akash Choudhary	CHE	IITK
8	Mr. Aaryaman Aggarwal	Dr. Subrahmanya Swamy Peruru	EE	IITK
9	Ms. Harshita Awasthi	Dr. Shankar Prawesh	DoMS	IITK

10	Mr. Divyansh Asthana	Dr. Deepak Dhingra	ES	IITK
11	Mr. Sumit Kumar Gupta	Dr. Venkata Suresh Mothika	CHM	IITK
12	Ms. Esta Hanna Basil	Dr. Abhas Singh	CE	Non-IITK
13	Ms. Saiswari Arghyarupa	Dr. Tanmoy Maiti	MSE	Non-IITK
14	Ms. Vrisha Parikh	Dr. Nikunj A. Bhagat	BSBE	Non-IITK
15	Mr. Aryaman Shukla	Dr. Ebin Cherian Mathew	EE	Non-IITK
16	Mr. Shikhar Kanauje	Dr. Amit Verma	EE	Non-IITK
17	Mr. Atharv Patil	Dr. Arnab Samanta	AE	Non-IITK
18	Ms. Maitreyee Sar	Dr. Preeti Malakar	CSE	Non-IITK
19	Ms. Tanurupa Singha	Dr. Banerjee Malay	MTH	Non-IITK
20	Mr. Sanchit Singh	Dr. Vishal Agarwal	CHE	Non-IITK
21	Mr. Abhishek Kumar	Dr. Vaibhav Arghode	SEE	Non-IITK
22	Ms. Aarti Nain	Dr. Sankar P. Rath	CHM	Non-IITK
23	Ms. v.shyam chaitrika	Dr. Nagaditya Poluri	EE	Non-IITK
24	Ms. Meera Prajapati	Dr. A. R. Harish	EE	Non-IITK
25	Mr. Pranav Bharadwaj Cheruvu	Dr. Pranav Joshi	ME	Non-IITK
26	Ms. Ashmita Dhar	Dr. Jishnu Bhattacharya	ME	Non-IITK
27	Ms. Deeksha Yadav	Dr. Ashoke De	AE	Non-IITK
28	Mr. Sachin Gaikwad	Dr. Somnath Bhowmick	MSE	Non-IITK
29	Mr. Rituraj Patel	Dr. Sachin Y. Shinde	ME	Non-IITK
30	Mr. Debjyoti Saha	Dr. Utsab Kundu	EE	Non-IITK
31	Mr. Shreeansh Hota	Dr. Kuber Amit	MTH	Non-IITK
32	Mr. Dasari Ram Vasanth	Dr. Nilesh Prakash Gurao	MSE	Non-IITK
33	Mr. Benament paul R	Dr. Raju Kumar Gupta	CHE	Non-IITK
34	Ms. Saloni Ajit Patil	Dr. P. M. Mohite	AE	Non-IITK
35	Ms. Bhavya Garg	Dr. Soumya Ranjan Sahoo	EE	Non-IITK
36	Mr. Madhav Kalra	Dr. J. Ramkumar	ME	Non-IITK
37	Mr. Shah Mit Ashishkumar	Dr. Raghvendra Kumar Chaudhary	EE	Non-IITK

38	Mr. Daivik Bharatbhai Hirpara	Dr. Tushar Sandhan	EE	Non-IITK
39	Mr. Pratham Maan	Dr. Abhishek K Gupta	EE	Non-IITK
40	Ms. Pushpanjali Yadav	Dr. Arghya Das	CE	Non-IITK
41	Mr. Angith S	Dr. Subhadip Das	CE	Non-IITK
42	Ms. Vidhi Arora	Dr. Soumyabrata Roy	SEE	Non-IITK

Participants from Partial Institute Funded Category

S.No.	Name	Mentor Name	Mentor Dept.	Category
1	Mr. Kartikey Gupta	Dr. Aditya Medury	CE	IITK
2	Mr. Anirvan Tyagi	Dr. Rituraj	EE	IITK
3	Mr. Prithwish Das	Dr. Amit Agarwal	PHY	IITK
4	Mr. Darshit Mittal	Dr. Twinkle Tripathy	EE	IITK
5	Mr. Mahesh	Dr. Sapam Ranjita Chanu	PHY	IITK
6	Ms. Tanvi Manhas	Dr. Sivakumar Sri	CHE	IITK
7	Mr. Arul Gupta	Dr. Abhishek	AE	IITK
8	Ms. Anusua Paul	Dr. Bhar Suprio	MTH	IITK
9	Mr. Ayan Raj	Dr. Saikat Ghosh	PHY	IITK
10	Mr. Swarnim Verma	Dr. Rathish Kumar B.V.	MTH	IITK
11	Mr. Saptarshi Mandal	Dr. Ganguly Arijit	MTH	IITK
12	Mr. Bhavnoor Singh	Dr. Arjun Ramakrishnan	MTH	IITK
13	Mr. Aaryan Maheshwari	Dr. Nadimpalli Santosh	MTH	IITK
14	Mr. Neel Basak	Dr. Ushasi Roy	ME	IITK
15	Mr. Akshit Gupta	Dr. R. M. Hegde	EE	IITK

16	Mr. Rohit Mahesh	Dr. Adithya Vadapalli	CSE	Non-IITK
17	Mr. Ansuman Agrawal	Dr. Pritam Chakraborty	AE	Non-IITK
18	Ms. Shagun	Dr. Mohanty Parasar	MTH	Non-IITK
19	Mr. Kaustubh Singh	Dr. Tushar Sikroria	ME	Non-IITK
20	Ms. N Lakshmi	Dr. Amitabha Bandyopadhyay	BSBE	Non-IITK
21	Mr. Tanishq Londe	Dr. Bishakh Bhattacharya	ME	Non-IITK
22	Mr. Madanmohan Rana	Dr. Rahul Sarkar	MSE	Non-IITK
23	Mr. Dhruv Shailesh Kuvar	Dr. Debopam Das	SEE	Non-IITK
24	Ms. Ananya Jauhari	Dr. Debanjan Dasgupta	BSBE	Non-IITK
25	Ms. Poulomi Basak	Dr. Nilesh Badwe	MSE	Non-IITK
26	Mr. Subhayan Mukherjee	Dr. Santosh K Misra	BSBE	Non-IITK
27	Ms. Samikshya Panda	Dr. Amar Nath Roy Chowdhury	CE	Non-IITK
28	Mr. Ayush Sahu	Dr. Dipak Kumar Giri	AE	Non-IITK
29	Mr. Anuj Sharma	Dr. Chinmoy Kolay	CE	Non-IITK

Participant from SAARC countries (Nepal)

S. No.	Name	Mentor Name	Mentor Dept.	Category
1	Mr. Saksham Kumar Yadav	Dr. Bishakh Bhattacharya	ME	SAARC

Project Funded Category (Support from Mentors):

Under this category the participants get financial support from their mentors, based on their overall performance. This year 32 participants received stipend from their respective mentors. The details of these participants are mentioned below;

S.No.	Name	Mentor Name	Mentor Dept.	Category
1	Mr. Om Bhartiya	Dr. Santosh Nadimpalli	MTH	IITK
2	Mr. Humayun Ahmad	Dr. Mohit Law	ME	IITK
3	Mr. Shivansh Yadav	Dr. Shankar Prawesh	DoMS	IITK
4	Mr. Ankit K Dubey	Dr. Shankar Prawesh	DoMS	IITK
5	Mr. Shubham Agarwal	Dr. Shankar Prawesh	DoMS	IITK
6	Ms. Lavina Goyal	Dr. Jonaki Sen	BSBE	IITK
7	Ms. Prutha Vinay	Dr. Kantesh Balani	MSE	IITK
8	Mr. Basudev Mohapatra	Dr. Kantesh Balani	MSE	IITK
9	Ms. Chaitnya Goel	Dr. Abhishek	AE	IITK
10	Mr. Rana Sadhukhan	Dr. Saikat Ghosh	PHY	IITK
11	Mr. Debkanta Biswas	Dr. Saikat Ghosh	PHY	IITK
12	Ms. Sougata Kar	Dr. Saikat Ghosh	PHY	IITK
13	Mr. Avula Ajay	Dr. Suvendu Samanta	EE	IITK
14	Mr. G Sriniketh Balachandar	Dr. Rituraj	EE	IITK
15	Ms. Niharika Srivastava	Dr. Anshu Gaur	MSE	Non-IITK
16	Mr. Ayushmaan Badola	Dr. Abhijit Kushari	AE	Non-IITK
17	Mr. Avneesh Dalvi	Dr. Tanmoy Maiti	MSE	Non-IITK
18	Ms. Ritu Rajput	Dr. Vishal Govind Rao	CHM	Non-IITK
19	Ms. Rajani Eddula	Dr. Ashish Garg	SEE	Non-IITK
20	Mr. Jainam Tated	Dr. Mohit Law	ME	Non-IITK
21	Ms. Chanda Bavitha Sri	Dr. Mohit Law	ME	Non-IITK

22	Ms. Punam Samal	Dr. S. Ganesh	BSBE	Non-IITK
23	Mr. Aditya Tandon	Dr. Chithra	EE	Non-IITK
24	Mr. Austadish Saika	Dr. Chithra	EE	Non-IITK
25	Ms. Anushka Gupta	Dr. Niraj Mohan Chawake	MSE	Non-IITK
26	Mr. Abhay Singh	Dr.Pritam Chakraborty	AE	Non-IITK
27	Mr. Ansuman Agrawal	Dr.Pritam Chakraborty	AE	Non-IITK
28	Mr. Anuj Sharma	Dr. Chinmoy Kolay	CE	Non-IITK
29	Mr. Vishal	Dr. Chinmoy Kolay	CE	Non-IITK
30	Ms. Thamballa Sindhu	Dr. Chinmoy Kolay	CE	Non-IITK
31	Mr. Divyansh Singh	Dr. Ebin Cherian Mathew	EE	Non-IITK
32	Mr. Jairam G	Dr. Ebin Cherian Mathew	EE	Non-IITK

SURGE-2025 IITK PARTICIPANTS

S. No.	Name	Mentor Name	Mentor Dept.	Title
1	Mr. Ayush Goyal	Dr. Somesh K. Mathur	EcoSci	Applications of Gtap-Dynamics
2	Ms. Ridhima Sharma	Dr. Bishakh Bhattacharya	ME	Non Visual SLAM
3	Mr. Shivansh Yadav	Dr. Shankar Prawesh	DoMS	Automatic Pedestrian Trajectory Prediction
4	Mr. Manas Todi	Dr. Indranil Saha Dalal	CHE	ML-GLE: Hybrid Machine Learning framework for Polymer Dynamics
5	Mr. Kavin Chowdary G	Dr. Subrahmanya Swamy Peruru	EE	Restless Multi-Armed Bandits with Cascading Model and Whittle Index-Based Policies
6	Mr. Tharun D	Dr. Ramprasad Potluri	EE	Design of Electrical and Communication Systems for a 4WIS4WID Scale Testbed
7	Mr. Mrityunjay Kumar	Dr. R. Budhiraja	EE	CSI compression using sparse transformer
8	Mr. Rachit Agarwal	Dr. Abhilash Patel	EE	Carebot feeder
9	Mr. Kartikey Gupta	Dr. Aditya Medury	CE	Exploration of Topic Modeling Frameworks for Crash Narrative Analysis
10	Mr. Anirvan Tyagi	Dr. Rituraj	EE	Avalanche Breakdown in Photodetector Design
11	Ms. Sanvi Jain	Dr. R. M. Hegde	EE	Machine Learning in Audio Localisation
12	Ms. Anushree Mittal	Dr. Abhishek	AE	Vision-based Waypoint Navigation of Quadrotor using ArUco markers
13	Mr. Dandibhotla Sivanath	Dr. Soumik Mukhopadhyay	PHY	Spin dynamics in lower dimensional Ferromagnets
14	Mr. Devansh Abhay Dhok	Dr. R. M. Hegde	EE	ASR in Sanskrit
15	Mr. Vivek Kumar Gupta	Dr. R. M. Hegde	EE	Low Resource Language ASR

16	Mr. Jaskaran Singh	Dr. Tushar Sandhan	EE	Comprehensive approach to Radar Signal Deinterleaving through Simulation and Deep Learning-based methods.
17	Mr. Sarthak Singh	Dr. Dipin S. Pillai	CHE	Spatio-Temporal Chaos in Belousov-Zhabotinsky Systems: Modelling & Experimental Characterization
18	Mr. Vattikuti Susruth	Dr. R. Budhiraja	EE	Gaussian transformer for efficient CSI compression
19	Mr. Prithwish Das	Dr. Amit Agarwal	PHY	Valley Hall Effect and Transport in Gapped 2D Materials
20	Mr. Anubhab Goswami	Dr. Rathish Kumar B.V.	MTH	Numerical Linear Algebra and Sparse Matrix Algorithms
21	Mr. Darshit Mittal	Dr. Twinkle Tripathy	EE	Localization of Turtlebot using opti-track and implementation of distributed algorithms
22	Mr. Vrushabh	Dr. Subrahmanya Swamy Peruru	EE	Deep reinforcement learning for cognitive radios
23	Mr. Abhimanyu Solanki	Dr. Soumik Mukhopadhyay	PHY	STFMR measurement of Fe3GaTe2/Pt heterostructure
24	Mr. Suryansh Rastogi	Dr. Tanmay Dutt Mathur	AE	Design of a Variable Speed Traction Drive for Rotary Wing UAV Applications
25	Mr. Valluri Ganga Pranav Vasishta	Dr. Arijit Kundu	PHY	Topology and Dynamics in SSH Model
26	Mr. Mahesh	Dr. Sapam Ranjita Chanu	PHY	Simulation of Mølmer-Sørensen gate
27	Mr. Suyash Kumar	Dr. Anurag Tripathi	CHE	Video Analysis of Granular Material using Opev-CV and Machine Learning
28	Mr. Aarin Sheth	Dr. Virkeshwar Kumar	ME	Effect of Magnetic Field on Melting and solidification
29	Ms. M Kirthiga	Dr. Dipak Kumar Giri	AE	Design and Implementation of Navigation System using Pan and Tilt Mechanism for Lunar Rover
30	Mr. Archil Mogra	Dr. Pranav Joshi	ME	Fabrication of Shear Stress Sensor using hot wire anemometry

31	Mr. Satvik Sharma	Dr. Debabrata Goswami	CHM	Effect of Nonlinearities on Femtosecond Optical Tweezers
32	Mr. Subhayan Dan	Dr. Sanjay Mittal	AE	Computational Analysis of Aerodynamic Effects on Javelin Flight
33	Mr. Ayush Raj	Dr. Raghu Nandan Sengupta	DoMS	B2B Brand Equity
34	Mr. Rishi Divyakirti	Dr. Tushar Sandhan	EE	LLM Generated Text Detection Using Training-Free Methods
35	Mr. Chandan Kumar	Dr. Gurunath Ramanathan	CHM	Biodegradation of nitroaromatic using Diaphorobacter sp. DS2 and its genomic variant Diaphorobacter sp. DS2-NT
36	Mr. Rounak Mishra	Dr. Salman Ahmad Khan	CHE	Modelling the distribution of active sites in multi-metallic catalysts
37	Mr. Arnav Gupta	Dr. Sutanu Gayen	CSE	Learning interaction matrices through samples of Ising Model
38	Ms. Sudarshana Karmakar	Dr. Nisanth N. Nair	CHM	Determining Saddle Points and Minimum Energy Pathways on High-Dimensional Free Energy Surfaces
39	Mr. Aditya Srivastava	Dr. Soumik Mukhopadhyay	PHY	Studying the Spin Dynamics in a Ni-doped F5GT Van der Waals Magnet using FMR
40	Mr. Ramtej Nallabilli	Dr. Mohammed Ibrahim Sugarno	AE	Pressure-Activated Solenoid Valve Regulation of Cooling Gas Flow in Shock Tube Testing
41	Ms. Bhuvana Reddy Gajulapally	Dr. Ushasi Roy	ME	crashworthiness of 3D truss element using FEA and Fracture Mechanics.
42	Mr. Ashish Upadhyay	Dr. Ashutosh Modi	CSE	Indian Sign Language Translation
43	Ms. Vashi Diwakar	Dr. R. Budhiraja	EE	Bayesian Machine Learning for Channel Estimation and Visibility Region Detection in 6G Near Field Communication

44	Ms. Tarushi Srivastava	Dr. Prashant Pathak	SPASE	Shack Hartmann Wavefront Sensor Development for Adaptive Optics
45	Ms. Khushi Khandelwal	Dr. Subhajit Roy	CSE	Generalizable Reinforcement Learning
46	Ms. Tanvi Manhas	Dr. Sivakumar Sri	CHE	Formulation and Optimization of a Cleaning Concentrate for Photovoltaic Surface Maintenance
47	Mr. Karmanya Goyal	Dr. Salman Ahmad Khan	CHE	Generative artificial intelligence for discovering new molecules and materials
48	Mr. Debkanta Biswas	Dr. Saikat Ghosh	PHY	Exploring RedPitaya for Real-Time Signal Manipulation and Control Applications
49	Mr. Akshat Jain	Dr. Sharvari Nadkarni Ghosh	SPASE	Testing the non linear density velocity divergence relation of cosmological large scale structure in Numerical Simulations.
50	Mr. Raj	Dr. Arvind Kumar	ME	Development of Machine Learning Tool for Melt Pool Size Prediction in Metal Additive Manufacturing
51	Mr. Karan Kumar	Dr. Arvind Kumar	ME	Physics-Informed Machine Learning Tool for Defects Prediction in 3D Printing
52	Mr. Rohan Garg	Dr. R. Budhiraja	EE	Partitioned Variational Inference for 1-bit Quantized Decentralized Learning
53	Mr. Akshat Swarup	Dr. Salman Ahmad Khan	CHE	Generative Artificial intelligence for discovering new molecules and materials
54	Mr. Arul Gupta	Dr. Abhishek	AE	Vision-Based Tracking and Landing of Quadcopters on High-Speed Ground Vehicle Using ArUco Markers
55	Mr. Yash Upadhyay	Dr. Indranil Saha Dalal	CHE	Physics-Informed Neural Networks for Flow Past a Cylinder at Low Reynolds Number

56	Mr. Rahul Meena	Dr. Soumya Ranjan Sahoo	EE	Dynamic Modelling of a wind turbine system using DFIG
57	Mr. Archit Kumar Gupta	Dr. Soumya Ranjan Sahoo	EE	Machine Learning Based Macroeconomic Forecasting
58	Mr. Mayank Pattnaik	Dr. Soumya Ranjan Sahoo	EE	Application of Physics-Informed Neural Nets to Dynamical Systems
59	Mr. Rana Sadhukhan	Dr. Saikat Ghosh	PHY	Design and Simulation of Hexagonal Pyramid Magneto-Optical Trap (MOT) Using Zemax
60	Mr. Kushagra Tiwari	Dr. Akash Choudhary	CHE	Influence of electrolyte gradient orientation on colloid transport in dead-end pores
61	Ms. Anusua Paul	Dr. Bhar Suprio	MTH	Brownian Motion
62	Ms. Chhaya Tiwari	Dr. Ganguly Arijit	MTH	Differential Forms and Their Applications in Geometry
63	Mr. Karan Keer	Dr. Vishal Agarwal	CHE	Evaluating the Efficiency of Novel Algorithms for Transition State Identification in Methane
64	Mr. Ankit Kumar Dubey	Dr. Shankar Prawesh	DoMS	Discrete choice modelling for large scale preference data
65	Ms. Khushi Jain	Dr. Indranil Saha Dalal	CHE	Pysics Informed Neural Networks for Low Reynolds Number Fluids over a Cylinder
66	Mr. Anirudh Singh	Dr. Preeti Malakar	CSE	Web-Based Visual Analysis for Parallel Processing Applications
67	Mr. Sougata Kar	Dr. Saikat Ghosh	PHY	Measuring and Calibrating Earths anomalous Magnetic fields towards triangulation of a sensor
68	Ms. Yashwi Agarwal	Dr. Arnab Bose	EE	Study of Magnetization dynamics of Spin-Torque Nano-oscillators
69	Mr. Arsh Jaswal	Dr. Salman Ahmad Khan	CHE	Automated extraction of synthesis data from unstructured scientific literature

70	Ms. Lavina Goyal	Dr. Jonaki Sen	BSBE	Role of Differential Cell Proliferation in Forebrain Roof Plate Invagination during Chick Embryonic Development
71	Mr. Sanchit Garg	Dr. Ushasi Roy	ME	Effect of Precipitate morphology on temperature dependent fracture
72	Ms. Medha Agarwal	Dr. Tushar Sandhan	EE	Automated Wheat Grain and Impurity Analysis
73	Mr. Peeyush Agarwal	Dr. Ashoke De	AE	ARTRACFD GPU PARALLELIZATION
74	Mr. Ayan Raj	Dr. Saikat Ghosh	PHY	Design and Optimization of a High-Finesse Optical Cavity Resonator for a Rubidium-Based MOT System
75	Mr. Shubham Agarwal	Dr. Shankar Prawesh	DoMS	Predictive Analysis of Nitrate Contamination in Groundwater Using ML Model
76	Mr. Aritra Ambudh Dutta	Dr. Ashutosh Modi	CSE	Indian Sign Language Detection Using Procedural Learning and Optimal Transport
77	Mr. Swarnim Verma	Dr. Rathish Kumar B.V.	MTH	From Heat Diffusion to Pattern Formation, A Mathematical Study of Reaction–Diffusion Systems
78	Mr. Ayush Raj	Dr. Rathish Kumar B.V.	MTH	Solving the Time-Fractional Black-Scholes-Merton Equation: A Comparative Study of Numerical and Neural Approaches
79	Mr. Aaryaman Aggarwal	Dr. Subrahmanya Swamy Peruru	EE	Restless Multi Armed Bandits with Cascading Model
80	Mr. Chaitanya Goel	Dr. Abhishek	AE	Design, Optimization and Fabrication of Quadrotor using Cane Grass
81	Ms. Arunima Rajesh	Dr. Kuber Amit	MTH	Applications of Quiver Representations in Topological Data Analysis

82	Mr. Basudev Mohapatra	Dr. Kantesh Balani	MSE	Molecular Dynamics Simulation of Staphylococcus aureus Adhesins on Bio glass Surfaces for Anti Bacterial
83	Mr. Pranshu Agarwal	Dr. R. M. Hegde	EE	Impact of Communication Topology on Decentralized Federated Learning
84	Ms. Lokwani Rajput	Dr. R. Budhiraja	EE	AI/ML for 5G/6G
85	Ms. Prakriti Prasad	Dr. R. Budhiraja	EE	Diffusion Model-Based CSI Reconstruction for 5G/6G Wireless Systems
86	Ms. Vennapa Reddy Shivalasya	Dr. Tushar Sandhan	EE	Palm Print and Veins Authentication System
87	Ms. Harshita Awasthi	Dr. Shankar Prawesh	DoMS	NLP-based ML Model for Vehicle Price Valuation
88	Mr. Saptarshi Mandal	Dr. Ganguly Arijit	MTH	Reading Expedition in Harmonic Analysis
89	Mr. Kamal Jaiswal	Dr. Sivakumar Sri	CHE	Microencapsulated phase change material for cold storage
90	Mr. Shaurya Srivastava	Dr. Harshwardhan H. Katkar	CHE	de novo drug design using Geometric deep learning
91	Mr. Dhawal Saraf	Dr. Rathish Kumar B.V.	MTH	Algorithms to solve Sparse Matrix
92	Mr. Mohit Choudhary	Dr. Sourya Joyee De	DoMS	Privacy Dark Patterns and its implications
93	Mr. Piyush Kumar	Dr. Salil Goel	CE	Loop Closure Detection Using Scan Context
94	Mr. Vishesh Thepadia	Dr. Soumya Ranjan Sahoo	EE	Earthquake Magnitude Prediction
95	Mr. Vemula Anurag Sai	Dr. Tushar Sikroria	ME	Development of an In-House image processing tool for PIV
96	Mr. Vishnnuprasad R	Dr. Anantharaj Sengeni	CHM	Examining The Oxygen Evolution Electrocatalytic Activity of Stainless Steel 316L in Alkaline Medium with Various Electrochemical Techniques
97	Mr. Avula Ajay	Dr. Suvendu Samanta	EE	A Critical Study on Sustainable nature of Solar Energy
98	Mr. Prithviraj Ghosh	Dr. Sutanu Gayen	CSE	Approximating Counting Knapsack

99	Ms. P Movika	Dr. Anusmita Sahoo	BSBE	Optimization of DENV
100	Mr. Bhavnoor Singh	Dr. Arjun Ramakrishnan	BSBE	Leveraging M1 Reward Signals for Adaptive Brain-Computer Interfaces (BCIs)
101	Mr. Tanishq Saraf	Dr. Somesh K. Mathur	EcoSci	mpact of Technology on India's Economic Growth: A Total Factor Productivity Analysis Using Multiple Econometric Methodologies
102	Mr. Raghvendra Singh	Dr. Bharat Lohani	CE	Rainwater Harvesting Suitability Prediction Using Machine Learning Techniques
103	Ms. Somya Garg	Dr. Soumya Ranjan Sahoo	EE	Control Allocation
104	Mr. Devansh Bhardwaj	Dr. Nitin Saxena	CSE	Nullstellensatz over Positive Characteristic Fields
105	Ms. Malavika Nair	Dr. Rajesh Ranjan	AE	Simulating Flow over a Cylinder Using PINNs
106	Mr. Harsh Gupta	Dr. Abhijith. G. R.	CE	Leakage Detection Model for Water Distribution Systems
107	Mr. Krishna Goyal	Dr. Soumya Ranjan Sahoo	EE	Force Torque Sensor Designing
108	Mr. Humayun Ahmad	Dr. Mohit Law	ME	Development and Comparative Analysis of a CNC Spindle Health Monitoring System Using NI CompactRIO and Raspberry Pi
109	Mr. G Sriniketh Balachandar	Dr. Rituraj	EE	Simulation of Semiconductor Structures
110	Ms. Prutha Vinay	Dr. Kantesh Balani	MSE	Molecular Dynamics Study of Staphylococcus aureus Adhesion on Hydroxyapatite coated Implants
111	Mr. Sankarsan Das	Dr. Rathish Kumar B.V.	MTH	A Physics-Informed Neural Network Approach to Solving a Space-Time Fractional Black-Scholes Equation
112	Mr. Adarsh Singh	Dr. Rathish Kumar B.V.	MTH	CUDA Implementation of Bates PIDE Solver
113	Mr. Vinay Chavan	Dr. Koteswar Rao Jerripothula	EE	Part Segmentation using SAM-2

114	Mr. Aaryan Maheshwari	Dr. Nadimpalli Santosh	MTH	Properties of the Markoff Graph Modulo Primes and Their Applications
115	Mr. Rahul Singh	Dr. Koteswar Rao Jerripothula	EE	Part Detection using SAM 2
116	Mr. Aditya Sati	Dr. Balaji Devaraju	CE	Utilisation of SWOT Satellite Data Product for study of water surface characteristics
117	Mr. Om Bhartiya	Dr. Nadimpalli Santosh	MTH	Algebraic Paths to Ramanujan Graphs
118	Mr. Yug Rajesh Vora	Dr. Sanjay Mittal	AE	Sports Aerodynamics of a Shuttlecock
119	Mr. Neel Basak	Dr. Ushasi Roy	ME	Effects of nanoparticles on temperature dependent fracture
120	Mr. Vibhansh Kumar	Dr. R. Budhiraja	EE	SNR Uplink via SRS
121	Ms. Divyanshi Agnihotri	Dr. Tushar Sandhan	EE	AI based gene prioritisation and patter analysis for disease prediction
122	Ms. Varsha Pillai	Dr. Tushar Sandhan	EE	Automated Wheat Grain and Impurity Analysis- Using Image Processing and Machine Learning
123	Ms. Yeva Gupta	Dr. Sourya Joyee De	DoMS	Ethical Implications of AI in Economics, Finance, Hiring and Governance
124	Mr. Himanshu Sharma	Dr. Tushar Sandhan	EE	Interpretability of In Context Learning Performance Scalability via Causal Tracing
125	Mr. Harshit Jaiswal	Dr. Tushar Sandhan	EE	A TWOSTAGE FRAMEWORK FOR LLM GENERATED TEXT DETECTION
126	Mr. Gourav	Dr. Chirag Kothari	CE	Exploring Potential of Blockchain in Land Records Management
127	Mr. Vaibhav Itauriya	Dr. Virkeshwar Kumar	ME	Effects of Ultrasonic Jet Penetration on Solidification of Liquid Metals
128	Mr. Mayank Baranwal	Dr. Abhishek Sarkar	ME	Computational Modeling & Simulation of Na-S Batteries

129	Mr. Dweep Joshipura	Dr. Tushar Sandhan	EE	Comprehensive approach to Radar Signal Deinterleaving through Simulation and Deep Learning based methods
130	Mr. Pratyush Gupta	Dr. Tushar Sandhan	EE	AnimalLM
131	Mr. Purav Malhotra	Dr. Abhishek Sarkar	ME	Modelling of Na-S batteries
132	Mr. Divyansh Asthana	Dr. Deepak Dhingra	ES	Design and Development of Low-Cost Visible Near-IR Spectrometer
133	Ms. Ishita Porwal	Dr. Tushar Sandhan	EE	Wheat Grain Analysis using AI Hardware
134	Mr. Himanshu Ranjan	Dr. Abhishek Sarkar	ME	Sulphur Recovery Unit
135	Mr. Akshit Gupta	Dr. R. M. Hegde	EE	Federated Learning for Networking Applications

SURGE-2025 NON-IITK PARTICIPANTS

S. No.	Name	Mentor Name	Mentor Dept.	Title
1	Mr. Sumit Kumar Gupta	Dr. Venkata Suresh Mothika	CHM	Fabrication of Blatter Radical Porous Polymer Thin Films: Synthesis and Structural Characterization
2	Mr. Rohit Mahesh	Dr. Adithya Vadapalli	CSE	Quantized Batch PIR
3	Mr. Abhineet Agarwal	Dr. Soumya Ranjan Sahoo	EE	Design and Analysis of a Dragonfly-Inspired Flapping-Wing MAV
4	Mr. Ansuman Agrawal	Dr. Pritam Chakraborty	AE	Generation of gradient microstructure and its crystal plasticity finite element simulation
5	Mr. Sanad Shaha	Dr. Soumya Ranjan Sahoo	EE	Navigating the Unsteady 3D circumnavigation of a moving target on a dynamic incline
6	Ms. Anshu	Dr. Ganguly Arijit	MTH	Several Variable Calculus and Differential Geometry of Surfaces.
7	Ms. Shagun	Dr. Mohanty Parasar	MTH	Hausdorff Measure and Kakeya Conjecture
8	Mr. Tejas Sharma	Dr. Dipak Kumar Giri	AE	Development of a Robotic Arm for Tracking and Capturing Rotating Space Debris
9	Mr. Kaustubh Singh	Dr. Tushar Sikroria	ME	Computational Fluid Dynamics Analysis and Design of a High-Pressure Jet Facility for Supersonic Jets
10	Mr. Vishal	Dr. Chinmoy Kolay	CE	Computational Fluid Dynamics Analysis and Design of a High-Pressure Jet Facility for Supersonic Jets
11	Ms. Gayathri K K	Dr. Raju Kumar Gupta	CHE	Computational Fluid Dynamics Analysis and Design of a High-Pressure Jet Facility for Supersonic Jets
12	Ms. Esta Hanna Basil	Dr. Abhas Singh	CE	Computational Fluid Dynamics Analysis and Design of a High-Pressure Jet Facility for Supersonic Jets
13	Ms. Saiswari Arghyarupa	Dr. Tanmoy Maiti	MSE	Computational Fluid Dynamics Analysis and Design of a High-Pressure Jet Facility for Supersonic Jets

14	Mr. Jairam G.	Dr. Ebin Cherian Mathew	EE	Synchronous Reference Frame dq Control for Modular Multilevel Converter
15	Ms. Vrisha Parikh	Dr. Nikunj A. Bhagat	BSBE	Differences in Event-Related Desynchronization in Isolated and combined Limb Movements measured
16	Mr. Abhay Singh	Dr. Pritam Chakraborty	AE	A Solution Mapping Technique for Elasto-Plastic Problems and its Accuracy.
17	Mr. Vivek Kumar	Dr. Arunabh Meshram	MSE	Aluminium-based metal–organic frameworks prepared using Aluminium dross
18	Mr. Indranil Bhattacharjee	Dr. Bishakh Bhattacharya	ME	A Hybrid Facial Emotion Recognition Pipeline for Autistic Children during name calling event using NAO robot.
19	Mr. Bhavye Verma	Dr. Mousami Prasad	DoMS	Portfolio Rebalancing under Extreme Climatic Conditions using Reinforcement Learning
20	Mr. Utkarsh Gupta	Dr. Bishakh Bhattacharya	ME	Human Machine Interface - developed from existing UI/UX figma design
21	Mr. Austadish Saikia	Dr. Chithra	EE	Design and realisation of a digital Delay Locked Loop for clock phase synchronisation.
22	Mr. Siddharth Menon	Dr. Y. N. Singh	EE	Performance Study of CSI Codebooks in High-Speed 5G Environments
23	Mr. Adnan Zafar	Dr. Vaibhav Arghode	SEE	Design & Analysis of a Passively operated Heat Switch
24	Mr. Aryaman Shukla	Dr. Ebin Cherian Mathew	EE	Hardware Implementation of a Single-Phase MMC and dq-Based Power Decoupling Control for a Three-Phase Grid-Tied Inverter
25	Mr. Shikhar Kanauje	Dr. Amit Verma	EE	Annealed Proton Exchanged Lithium Niobate Optical Waveguides for Integrated Photonic Circuits
26	Ms. N Lakshmi	Dr. Amitabha Bandyopadhyay	BSBE	Development of Molecular Tools for Gene Silencing in Chick Limb Development
27	Mr. Atharv Patil	Dr. Arnab Samanta	AE	Wake Dynamics of a Streamwise Oscillating Circular Cylinder
28	Mr. Arpan Saha	Dr. Banerjee Malay	MTH	Spatial Redistribution of Predator-Prey Dynamics
29	Mr. Parag Jain	Dr. Dipak Kumar Giri	AE	Development of a Robotic Arm for Tracking and Capturing Rotating Space Debris
30	Ms. Maitreyee Sar	Dr. Preeti Malakar	CSE	Modeling Network Behaviour and Interference in HPC Networks at Scale

31	Mr. Aditya C Singh	Dr. Nikunj A. Bhagat	BSBE	Sensor Integrated Prosthetic Hand for Slip Detection and EEG based Response Time Evaluation
32	Mr. Tanishq Londe	Dr. Bishakh Bhattacharya	ME	Quasi Zero Stiffness Modified Smart Memory Alloy Micromanipulator
33	Mr. Shubham Mishra	Dr. K. M. Sharika	CogSci	From Social Self to Neural Correlates of Decision Making
34	Ms. Shilpi Anand	Dr. Hamim Zafar	CSE	Mosaic Integration of Single-Cell Multiomic Data Using a Modified Variational Autoencoder Architecture
35	Ms. Shravani Tembare	Dr. Dipak Kumar Giri	AE	Design and Development of a Modular Rocker Bogie Suspension System for a Lunar Rover
36	Mr. Arijit Bhattacharyya	Dr. Pratik Sen	CHM	Mixed Macromolecular Crowding Effects on Protein Stability
37	Ms. Bhakti poranik	Dr. Harshwardhan H. Katkar	CHE	OpenFOAM Simulations of Cavity and Pipe
38	Mr. Madanmohan Rana	Dr. Rahul Sarkar	MSE	Development of a Mathematical Model for Optimizing Flux Consumption in External Desulphurisation of Blast Furnace Hot Metal Using Co-Injection of Mg and CaO
39	Ms. Tanurupa Singha	Dr. Banerjee Malay	MTH	Non-Local Consumption of prey in Prey-Predator Model
40	Mr. Samrat Sarkar	Dr. Hamim Zafar	CSE	Creation of a Comprehensive scRNA-seq Atlas for Head and Neck Squamous Cell Carcinoma
41	Mr. S Sakthiprakash	Dr. Sathesh Mariappan	AE	Development of Graphical User Interface for Intensity based analysis of images from Temperature Sensitive paint (TSP) coated Surfaces
42	Mr. Dhruv Shailesh Kuvar	Dr. Debopam Das	SEE	Design and Implementation of Helical Vertical Axis Turbine with Horizontal Axis Rotor
43	Mr. Braj Mohan	Dr. Santanu De	ME	Design and Analysis of an Aoustic Muffler For Jet Noise Reduction
44	Ms. Ananya Jauhari	Dr. Debanjan Dasgupta	BSBE	Simulating Driver Circuit of High-Speed Solenoid Valves to Deliver Dynamic Odor Stimuli
45	Mr. Rohit kumar	Dr. Arnab Bhattacharya	CSE	Advanced Streamlit AutoML Dashboard (for) Churn Prediction and Behavioral Analysis
46	Mr. Vikash kumar Jakhar	Dr. Abhilash Patel	EE	'Enhanced Grid Stability Through Bidirectional V2G/G2V Control Strategies for Plug-In EV Systems

47	Mr. Soham Das	Dr. Krishanu Biswas	MSE	In-vitro Investigation of HfTiZr Medium-Entropy Alloy for Biocompatibility in Simulated Body Fluid
48	Mr. Sanchit Singh	Dr. Vishal Agarwal	CHE	Investigating the Reactivity of ZnCl2, ZnBr2 and ZnI2 for Methane Pyrolysis
49	Mr. Aniket Saha	Dr. Abhilash Patel	EE	Enhance the Power System in More Electric Aircraft
50	Mr. Abhishek Kumar	Dr. Vaibhav Arghode	SEE	Design and Analysis of a Differential Thermal Expansion (DTE) Cylindrical Thermal Switch for Normal Operation
51	Ms. Gayatri Allamsetti	Dr. Banerjee Malay	MTH	Asymmetric dispersal in multi-patch logistic equation
52	Mr. Spandan Chakraborty	Dr. Nihar Ranjan Patra	CE	Analysis of shallow foundation reinforced with geogrid
53	Mr. Shubham Thakur	Dr. Abhilash Patel	EE	Mathematical Modelling of ribosome stalling
54	Mr. Balram Kumar	Dr. Sarvesh Mishra	ME	Coral reef printing with help of additive manufacturing
55	Ms. Poulomi Basak	Dr. Nilesh Badwe	MSE	Characterizing the mechanical properties and thermal stability of nanocrystalline Ni-Co alloy
56	Ms. Vijeta Sharma	Dr. Nachiketa Tiwari	ME	Vibration Analysis of Radial Tires Using Digital Image Correlation and Experimental Modal Techniques
57	Ms. Aarti Nain	Dr. Sankar P. Rath	CHM	Synthesis and Characterisation of Porphyrin-chlorin Heterodimer
58	Mr. Gaurav Kumar	Dr. Abhilash Patel	EE	Designing and Analyzing a Model-Based Lactic Acid Biorefinery
59	Ms. V. Shyam Chaitrika	Dr. Nagaditya Poluri	EE	Implementation of maximum efficiency transmitter for 5G technology
60	Ms. Meera Prajapati	Dr. A. R. Harish	EE	A low-profile magneto-electric dipole antenna.
61	Ms. Tanirika Pal	Dr. Prabodh Bajpai	SEE	Modeling and Simulation of a Solar PV and Battery Energy Storage Based Stand-alone System
62	Mr. Sparsh Srivastava	Dr. Ankush Sharma	EE	Modeling and Simulation of Scalable and Secure LoRaWAN Networks

63	Mr. Subhayan Mukherjee	Dr. Santosh K. Misra	BSBE	Extraction of Bacterial DNA Extraction using Porous Silica Nanoparticles: An Approach Towards Environmental Sustainability
64	Mr. Aditya Tandon	Dr. Chithra	EE	design of a differential ring oscillator in gpdk180 and gpdk45
65	Mr. Shubham Parite	Dr. Sathesh Mariappan	AE	Characterisation of Bidirectional Turbine
66	Mr. Pranav Bharadwaj Cheruvu	Dr. Pranav Joshi	ME	Development of a Pulsatile Flow Bed for Testing Catheter-Based Devices
67	Mr. Kostubh Khandelwal	Dr. Nachiketa Tiwari	ME	Simulation and Control of Parallel Manipulator Using ROS 2 and Gazebo
68	Ms. Anushka Gupta	Dr. Niraj Mohan Chawake	MSE	Microstructural Hierarchy and Mechanical Performance of Dual-phase α/β Ti-alloy
69	Ms. Aditi Singh Bhadauria	Dr. Yogesh Singh Chauhan	EE	SPICE Simulation of Logic Gates using BSIM-BULK and an Introductory study of Resistive RAMs
70	Mr. Shah Mit Ashishkumar	Dr. Raghvendra Kumar Chaudhary	EE	Design and study of the UWB Antenna for VHF/UHF Communications
71	Ms. Ritu Rajput	Dr. Vishal G. Rao	CHM	Photocatalytic Hydrogenation of Alkenes Using Water-Stable CsPbBr? Perovskites
72	Ms. Ashmita Dhar	Dr. Jishnu Bhattacharya	ME	Numerical and experimental investigation of a parabolic trough concentrator based evaporator with gravity-assisted salt removal
73	Ms. Deeksha Yadav	Dr. Ashoke De	AE	Acoustic Measurements on a Thrust Vectoring Jet
74	Mr. Maitreya Das	Dr. Soumya Ranjan Sahoo	EE	Synchronization of n Kapitza Pendulums
75	Mr. Sachin Gaikwad	Dr. Somnath Bhowmick	MSE	Deep Learning-Driven Prediction of Microstructure Evolution via Latent Space Interpolation
76	Mr. Rituraj Patel	Dr. Sachin Y. Shinde	ME	Flow Visualization of Heaving Flexible Flapping Foils in Quiescent Air
77	Mr. Soumavo Sikdar	Dr. Y. N. Singh	EE	Study of Inertial Sensing using Machine Learning
78	Ms. Shahina Nigar	Dr. Alakesh Chandra Mandal	AE	Two- Dimensional Vortex Shedding Behind a Airfoil Using a Control Cylinder in a Soap Film Tunnel and POD analysis

79	Ms. Khushi	Dr. Raghu Nandan Sengupta	DoMS	Cayley Hash Functions Based on Dynamic Inner Automorphisms of the Sporadic Group M_{24.\ \ }
80	Mr. Divyansh Singh	Dr. Ebin Cherian Mathew	EE	Hardware Implementation of a Single-Phase MMC and dq-Based Power Decoupling Control for a Three-Phase Grid-Tied Inverter
81	Mr. Tapomugdha Mandal	Dr. Prashant Pathak	SPASE	Closed-Loop Real-time Tracking of Space Objects
82	Ms. Sahishnu Sanskriti	Dr. Abhilash Patel	EE	A Coarse-Grained Model of Bacterial Growth Under Nutrient Variation and Synthetic Circuit
83	Mr. Ankush Kumar Jaiswal	Dr. Arunabh Meshram	MSE	Synthesis of High-Silica Zeolite from Aluminium Dross and Rice Husk
84	Mr. Rahul Yadav	Dr. Abhilash Patel	EE	Advancing Bi-Manual Robotic Manipulation Techniques
85	Mr. Dhruv Chandhok	Dr. Soumya Ranjan Sahoo	EE	Distributed Cooperative Localization and Area Coverage in Multi-Robot Systems
86	Mr. Debjyoti Saha	Dr. Utsab Kundu	EE	Efficiency vs Volume Trade-off in Boost PFC Design for Electric Scooters
87	Mr. Rinku	Dr. Amarendra Edpuganti	SEE	Integrated Design of Power Conversion Circuits, PCB Systems and Embedded Control Using TI F28379D Microcontroller
88	Mr. Vivek Raj	Dr. D. Chaitanya Kumar Rao	AE	ACOUSTICALLY COUPLED COMBUSTION OF FUEL DROPLETS
89	Mr. Shreeansh Hota	Dr. Kuber Amit	MTH	A survey of quantum logics
90	Mr. Boni Sarkar	Dr. Y. N. Singh	EE	LDPC Code Optimization for Satellite Modems and PCB Design for Ballistic Computers
91	Ms. Samikshya Panda	Dr. Amar Nath Roy Chowdhury	CE	Data-Driven Surrogate Modeling of Crack-Induced Bistability in Thermally Cured Composite Laminates
92	Mr. Mayank Kesariya	Dr. Shashank Shekhar	MSE	Enhancement of Corrosion Resistance of mild steel using a multi-layer protective coating system.
93	Ms. Eram Zeya	Dr. Santanu De	ME	Kinetic Analysis of Agro waste by using TGA (Thermogravimetric Analysis)
94	Mr. Dasari Ram Vasanth	Dr. Nilesh Prakash Gurao	MSE	Electronic Database Development and Materials Properties Correlation

95	Mr. Jainam Tated	Dr. Mohit Law	ME	Smart Spindle Fault Detection and Health Monitoring System with Wireless Data Transmission
96	Mr. Benament paul R	Dr. Raju Kumar Gupta	CHE	Recovering RO Brine Using VMC Integrated With MVC
97	Ms. Punam Samal	Dr. S. Ganesh	BSBE	Targeting Glycogen Synthase as a Therapeutic Strategy for Glycogen Storage Diseases
98	Mr. Ayush Sahu	Dr. Dipak Kumar Giri	AE	Development of a Robotic Arm for Tracking and Capturing Rotating Space Debris
99	Ms. Saloni Ajit Patil	Dr. P. M. Mohite	AE	ESTIMATE THE EFFECTIVE PROPERTIES BY GENERATING REPRESENTATIVE VOLUME ELEMENT WITH RANDOMLY DISTRIBUTED FIBRES
100	Ms. Rakshita Chauhan	Dr. Rajiv Sinha	ES	Spatiotemporal Analysis of Land Use Land Cover in Kanpur Using Machine Learning and Deep Learning Techniques
101	Ms. Gargi Mishra	Dr. Nihar Ranjan Patra	CE	Numerical Modelling of Laterally Loaded piles in Cohesive Soil
102	Ms. Gauri Tewari	Dr. Dipin S. Pillai	CHE	Oscillating Chemical Reactions :Belousov Zhabotinsky reaction as a case study
103	Mr. Shashwat Tiwari	Dr. Amarendra Edpuganti	SEE	Design of Power Conversion Circuits, PCB Design,TI Delfino F2837XD Microcontroller Study
104	Mr. Avneesh Dalvi	Dr. Tanmoy Maiti	MSE	High-temperature Thermoelectric Generator Modelling and Optimization for Turbofan Engines
105	Mr. Rahul Konar	Dr. Raghu Nandan Sengupta	DoMS	Statistical Inference for Weibull Accelerated Lifetimes Under Progressive Hybrid and Adaptive Progressive Hybrid Censoring Schemes
106	Mr. Satvik Jaiswal	Dr. Rajesh Ranjan	AE	CFD Simulation of Ogive-Shaped Missile for Vortex Asymmetry Analysis
107	Ms. Bhavya Garg	Dr. Soumya Ranjan Sahoo	EE	Hybrid Attitude Controller for Helicopters
108	Mr. Madhav Kalra	Dr. J. Ramkumar	ME	Development of an Autonomous Glass Facade Cleaner System
109	Ms. Rajani Eddula	Dr. Ashish Garg	SEE	2D/3D dimensional engineering to improve the stability of the perovskite solar cells
110	Ms. Shalini Sharma	Dr. Tarun Gupta	CE	Green Building Progress in India for sustainable future

111	Mr. Daivik Bharatbhai Hirpara	Dr. Tushar Sandhan	EE	Self-Supervised Reinforcement Learning For Single Image Denoising
112	Ms. Thamballa Sindhu	Dr. Chinmoy Kolay	CE	Finite Element Analysis of Shear Transfer at the Interface in Circular Concrete-Filled Steel Tubes (CCFST)
113	Ms. Niharika Srivastava	Dr. Anshu Gaur	MSE	Machine Learning Approach for Structure–Property Correlation in Multicomponent Amorphous Semiconductors
114	Mr. Mukund Bharadwaj L	Dr. Soumya Ranjan Sahoo	EE	Closed-Loop Power Factor Correction Converter: Design, Simulation, and Analysis
115	Mr. Pannag Agrawal	Dr. Raghvendra Kumar Chaudhary	EE	Design of a Wideband Frequency Selective Reflector with High Selectivity and Low Profile
116	Mr. Naman Gupta	Dr. Nikunj A. Bhagat	BSBE	Control of BLDC motor and Heart rate monitoring
117	Mr. Vardaan Mathur	Dr. Deepu Philip	DoMS	Smart Supply chain Management Systems for VTOL UAV
118	Mr. Spandan Prasad Seth	Dr. Nachiketa Tiwari	ME	Physics-Informed Neural Networks for Forward and Inverse Structural Vibration Analysis
119	Mr. Pratham Maan	Dr. Abhishek K Gupta	EE	Enhancing Cellular Network Performance Using UAV-Assisted Coverage
120	Mr. Spandan Prasad Seth	Dr. Nachiketa Tiwari	ME	Physics-Informed Neural Networks for Forward and Inverse Structural Vibration Analysis
121	Mr. Pratham Maan	Dr. Abhishek K Gupta	EE	Enhancing Cellular Network Performance Using UAV-Assisted Coverage
122	Mr. Ayushmaan Badola	Dr. Abhijit Kushari	AE	ESTABLISHMENT OF FLOW FACILITY FOR SELECTIVE CATALYTIC REDUCTION OF NOx IN DIESEL ENGINES
123	Mr. Kunal Sharma	Dr. Santanu De	ME	Micro turbojet engine for loitering munition
124	Ms. Pushpanjali Yadav	Dr. Arghya Das	CE	Time dependent slope stability analysis using Consolidation theory and Soil plasticity models
125	Mr. Angith S	Dr. Subhadip Das	CE	Comparison of flow properties for a flow around a solid and porous object.
126	Mr. Wasim Alam	Dr. Srinu Gangolu	MSE	Mechanical properties and microstructural characterization of Mg-1.2Al-0.4Ca- 0.2Ce-xZn where X=0.4,0.8,1.6Wt.%

127	Mr. Anuj Sharma	Dr. Chinmoy Kolay	CE	Dynamic Response Analysis of Single Degree of Freedom System Using Numerical Methods
128	Ms. Chanda Bhavitha Sri	Dr. Mohit Law	ME	Smart Spindle Fault Detection and Health Monitoring System with Wireless Data Transmission
129	Mr. Abhirup Bhandari	Dr. Alakesh Chandra Mandal	AE	Passive Control of Vortex Shedding Behind a Circular Cylinder
130	Mr. Ankesh Patel	Dr. Abhishek Sarkar	ME	Hysys simulation of CO2 and H2S absorption using blended amines
131	Mr. Darshan Misra	Dr. Dipak Kumar Giri	AE	Optimized Electronic Architecture for 4- Gimbled Constant Control Moment Gyroscopes
132	Ms. Vidhi Arora	Dr. Soumyabrata Roy	SEE	QUADRUPLE PEROVSKITES AND C3N4 HYBRIDS FOR PHOTOELECTROCHEMICAL CO2 REDUCTION
133	Mr. Harshal Randive	Dr. Raghvendra Kumar Chaudhary	EE	Design and study of a Dual Polarized Hexagonal Patch Antenna for Ku-Band Applications.
134	Mr. Shreshtha Gandhi	Dr. Sarvesh Mishra	ME	Closed-Loop Defect Detection and Correction in Clay-Based 3D Printing Using YOLO11
135	Ms. Lajbarna Mandal	Dr. Bushra Ateeq	BSBE	Mitigating transcription factor driven prostate cancer oncogenicity using PROTAC degraders
136	Ms. Anjali Katageri	Dr. Raghu Nandan Sengupta	DoMS	LLM Inference Under Bursty Workload Distribution

SURGE-2025 SAARC PARTICIPANT

S. No.	Name	Mentor Name	Mentor Dept.	Title
1	Mr. Saksham Kumar Yadav	Dr. Bishakh Bhattacharya	ME	2D CFD-based optimization of pod geometry for downstream flow in a cargo hyperloop

ACKNOWLEDGEMENT

The Office of Outreach Activities sincerely acknowledges the invaluable support and active participation of the following stakeholders:

- **DoRA,** for providing essential financial support to the SURGE Programme.
- **Faculty Mentors,** for offering students the opportunity to work on meaningful research projects and for their dedicated academic guidance.
- **Members of the SURGE Evaluation Committee,** departmental representatives, and other faculty members for their support and contributions in ensuring the successful execution of the programme.
- **SURGE Participants**, for their enthusiastic involvement and commitment throughout the programme.
- **OOA Staff,** for their efficient coordination and seamless management of the SURGE Programme.

Thank You!

Prof. Vimal Kumar
PIC, Office of Outreach Activities
IIT Kanpur

For more information regarding SURGE program, please contact:

📞 **Phone: +91-512-679-7795/2344**

✉️ **E-Mail: surge@iitk.ac.in**

🌐 **Website: surge.iitk.ac.in**

📍 **Address: New Faculty Building Annexe, Fifth floor, OOA office Indian Institute of Technology Kanpur, Kanpur-208016**