

Report on
AICTE Training and Learning
(ATAL) Academy
Sponsored
Faculty Development Program
On
Robotics: Exploring Technology of Tomorrow
14th - 18th September 2021

FDP Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Electronics and Telecommunication

Engineering Department,

IET-DAVV, Indore

+91 94253 33837

Faculty Development Program (FDP) on

Robotics: Exploring Technology of Tomorrow

- AICTE Sponsored FDP Program on “Robotics: Exploring Technology of Tomorrow” under ATAL Scheme was conducted through online mode during 14th - 18th September, 2021 in IET DAVV Indore under aegis of Electronics and Telecommunication Engineering Department.
- Total 84 out of 101 Participants got certificate as per AICTE criteria of 80% Attendance and 60% minimum marks in test conducted during the program.
- The program was scheduled for 5 days as per the guidelines of AICTE and a total of 15 sessions was conducted. Duration of each session is of 2 hours which was taken by experts. The experts were well known academicians, scientists from various reputed institutes like IITs and industries of India.
- Most of the resource persons were from IITs. Practical Applications were also illustrated during the sessions from the experts.

Eminent Speakers



Dr. Prakash Dandekar
SGSITS Indore



Dr. Sonali Agarwal
IIIT Allahabad



Dr. Santhakumar Mohan
IIT Palakkad



Dr. Subir Kumar Saha
IIT Delhi



Mr. Manish Joshi
Sciencetech Technologies Pvt. Ltd.,
Indore

Eminent Speakers



Dr. Shivashankar B. Nair
IIT Guwahati



Mr. Satish Thakare
Scientech Technologies Pvt.
Ltd., Indore



Dr. Anjali V. Kulkarni
IIT Kanpur



Dr. Arpita Sinha
IIT Bombay



Ms. Neeta Raghuwanshi
Heartfulness, Hyderabad

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Tomorrow

14th - 18th September 2021

INAUGURATION Function

Presented By

Electronics and Telecommunication Engineering,

Institute of Engineering & Technology,

Devi Ahilya University, Indore



Chief Guest

Dr. Renu Jain

Vice-Chancellor

DAVV, Indore



Coordinator

Dr. Sanjiv Tokekar

Director

IET-DAVV, Indore



Chief Guest

Dr. Ashok Sharma

Rector

DAVV, Indore



Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor, E&TC Dept.

IET-DAVV, Indore

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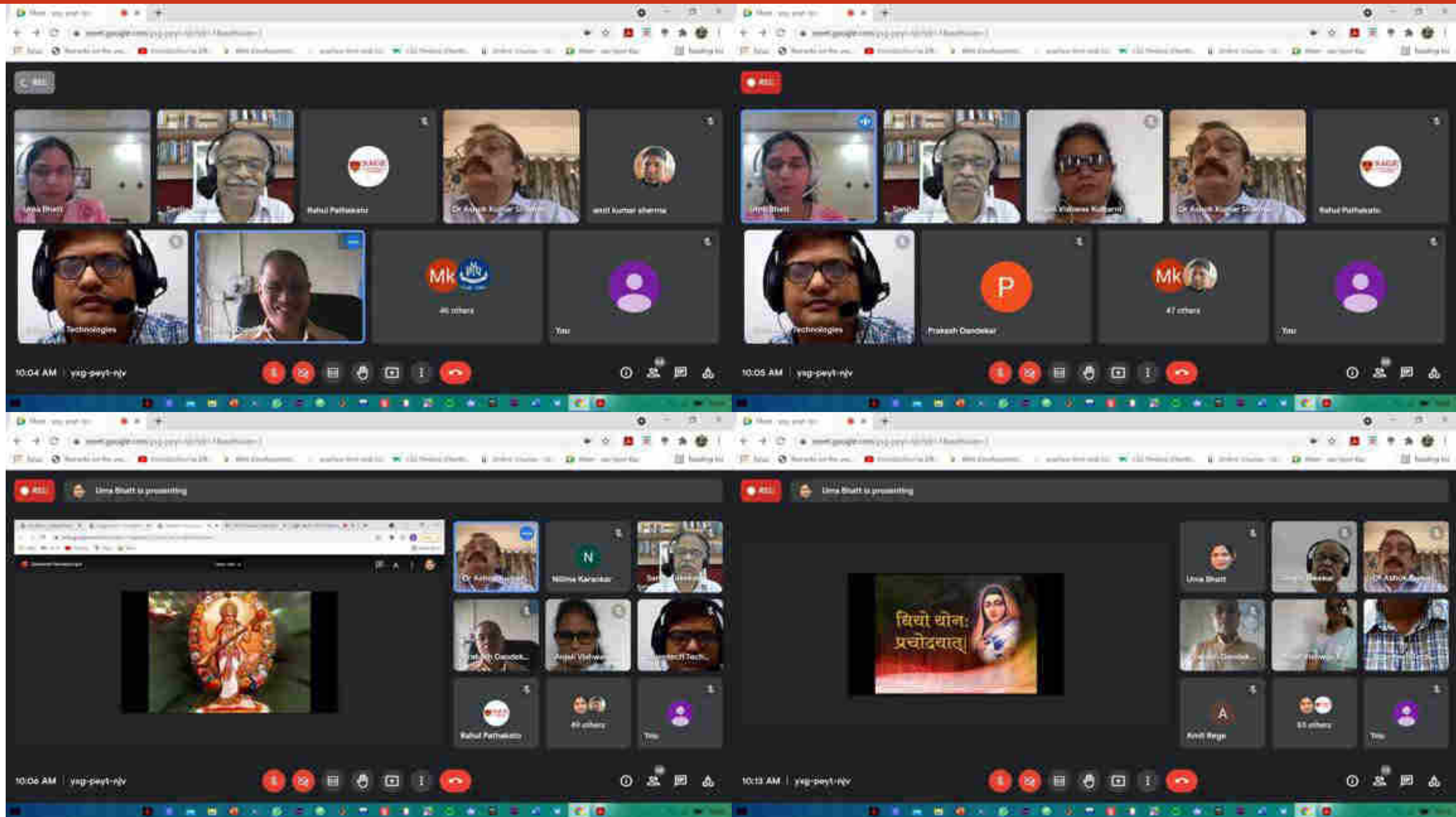
Dr. Uma Rathore Bhatt, the FDP co-coordinator, welcomed Hon'ble Vice-Chancellor Dr. Ashok Kumar Sharma, Director IET, DAVV and coordinator of FDP Dr. Sanjeev Tokekar, Speakers and the participants.

The Faculty Development Program began with pleasant Saraswati Vandana followed by our pious Kulgeet as per our culture. Dr. Uma Rathore Bhatt told everyone about DAVV University which is an A+ grade university by NAAC and glorious journey of 25 years of IET DAVV. Later she told about robotics, its applications, and its scope in research and development in technology. Then she invited Hon'ble Vice-Chancellor Dr. Ashok Kumar Sharma to address the participants.

Dr. Ashok Kumar Sharma welcomed everyone and appreciated the efforts of Director and his team for the FDP program. He told about Robotics, whose goal is to design a machine that replicates human work.

Dr. Uma Rathore Bhatt invited Dr. Sanjeev Tokekar coordinator of the FDP, to speak more about the FDP design, sessions, speakers and relevance of the FDP title at present scenario.

This was also announced that AICTE had sanctioned 6 FDP to IETDAVV, of which this is the 5th FDP in which more than 100 people have participated from all across the country. By giving vote of thanks Inaugural ceremony is concluded.



INAUGURATION FUNCTION

AICTE Training and Learning
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On

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14th - 18th September 2021

DAY 1

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore



Dr. Prakash Dandekar
SGSITS Indore

Topic:

Experiment in Basic Robotics to
Learn About Automation



Mr. Satish Thakare

Sciotech Technologies Pvt. Ltd., Indore

Topic:

Internet of Robotics



Dr. Anjali V. Kulkarni
IIT Kanpur

Topic:

Electronics for Robotics

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14th - 18th September 2021

SESSION 1

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 1: Experiment in Basic Robotics to Learn About Automation Speaker: Dr. Prakash Dandekar



Prof. Prakash Dandekar, first speaker for the day introduced the participants to Robotics, new technologies, and scope. He started his presentation by explaining the experiments in basic robotics. In a very effective manner he gave ideas about the definition of robotics, the application of robotics in various fields, components of robotics, how to choose which robot to build 1st, the men material and money requirements. Finally, he shared information about his own developed projects. He guided the participants that, how he successfully achieved what he thought of and how to convert thoughts into a model. Later he also discussed some of his failed projects to give an idea that what things should be kept in mind while working on a robotics project and said “A failed project teaches you more than a successful achievement”. Finally he concluded by saying that A machine used to reduce human effort is a ROBOT.

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SESSION 2

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 2: Internet of Robotics

Speaker: Mr. Satish Thakare



The second Session of Day-I was all about the Internet of Robotic things (IoRT), our speaker for the session was Mr. Satish Thakare, from Scientech Technologies Pvt. Ltd Indore, who made us aware of the concept, IoT+Robotics = IoRT. He explained the architectural approach to IoRT and gave the knowledge of various technologies used for IoRT such as Swarm Technology. Furthermore, he told about intelligent connectivity, IoRT platforms, and interoperability in IoRT. The topic of trustworthiness in IoRT was also covered in the session along with the applications of IoRT and Stack of layers covered by IoRT.

He concluded the session by showing Scientech's website and the variety of products they provided, after which Mr. Thakare addressed the queries of the participants.

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SESSION 3

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

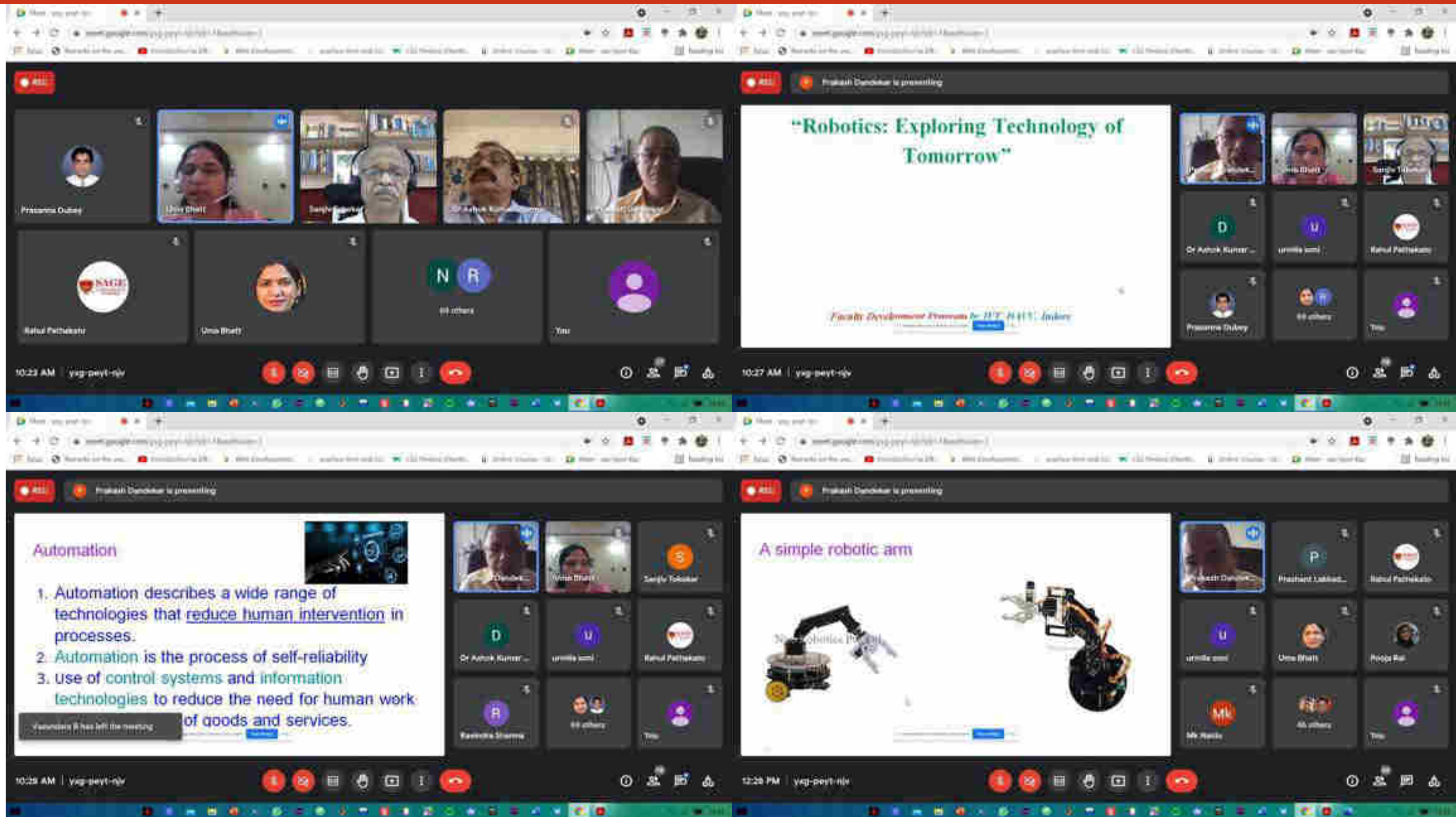
Session 3: Electronics of Robotics

Speaker: Dr. Anjali V. Kulkarni

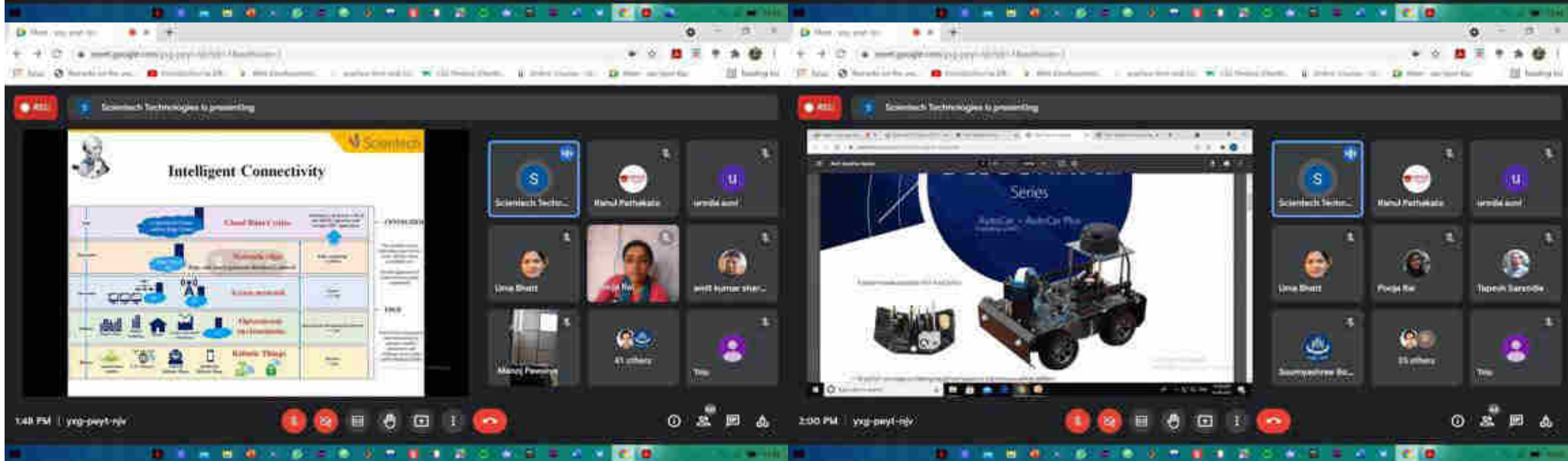
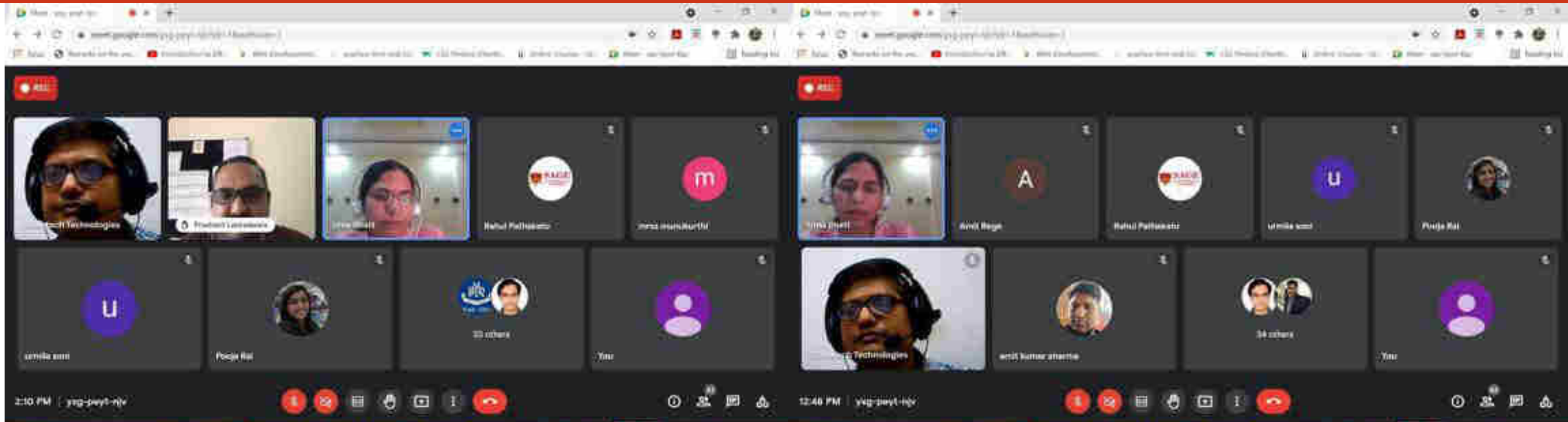


The last session of our very first day was covered by Dr. Anjali Vishwas Kulkarni from IIT Kanpur.

She started the session in a very different way by giving the scientific outlook from the Rigveda. She gave us knowledge about the terminologies and the components required for robotics. This session helped the participants to understand what electronics is needed for robotics. A detailed specification sheet with the functioning of all components was explained by her. Participants also saw the use of measuring instruments and electro-magneto-mechanical components in robotics.




SESSION 1



SESSION 2

meet.google.com/yqg-peyt-hjv

Anjali Kulkarni is presenting



Scientific Outlook

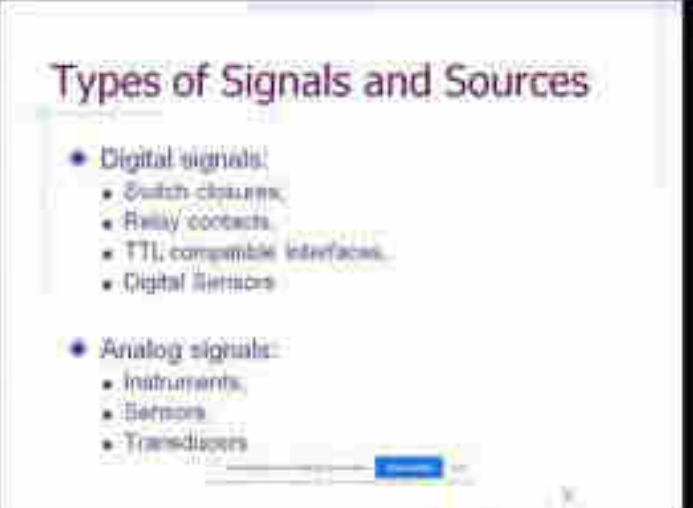
3:06 PM | yqg-peyt-hjv

3:07 PM | yqg-peyt-hjv

Participants: Uma Shetti, Anjali Kulkarni, Anil Kumar Sharma, Dr. Shreepatil Sahasra, Anirudh Sankar, Dr. Anilraj Tambe, Anil Raju, 21 others, You.

meet.google.com/yqg-peyt-hjv

Anjali Kulkarni is presenting

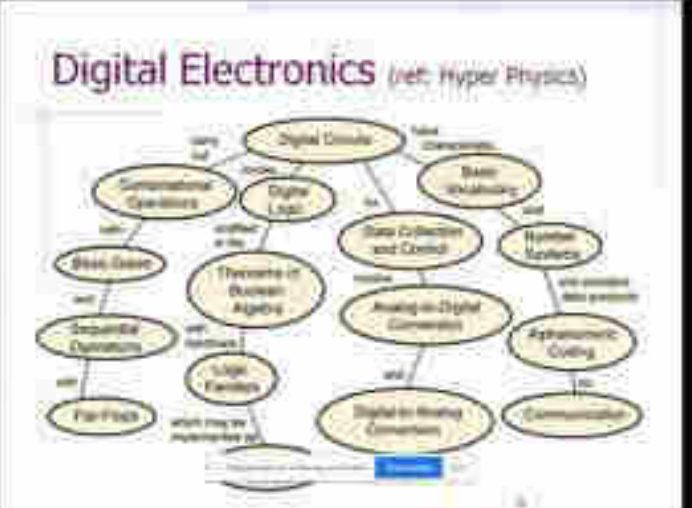


Types of Signals and Sources

- Digital signals:
 - Switch closures,
 - Relay contacts,
 - TTL compatible interfaces,
 - Digital sensors
- Analog signals:
 - Instruments,
 - Sensors,
 - Transducers

4:11 PM | yqg-peyt-hjv

Anjali Kulkarni is presenting



Digital Electronics (ret: Hyper Physics)

4:42 PM | yqg-peyt-hjv

Participants: Anjali Kulkarni, Anirudh Sankar, Karan Laha, Arthun Patel, Seema Choudhan, Raghavendra Balla, C.C.Theodor MD, 21 others, You, Dr. Anilraj Tambe, Mihir Patel, MV SVV, Seema Choudhan, 21 others, You, Rahul Patilkar.

SESSION 3

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DAY 2

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore



Dr. Sonali Agarwal

IIIT Allahabad

Topic:

Data Robotics: Data Driven Machine

Learning Robots



Dr. Shivashankar B. Nair

IIT Guwahati

Topic 1:

Nature Inspired Mechanisms for

Robots

Topic 2:

Lab Demonstration on Robotics

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SESSION 4

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 4:

Data Robotics: Data Driven
Machine Learning Robots

Speaker: Dr. Sonali Agarwal



The first session of Day-II was conveyed by Dr. Sonali Agarwal from IIT Allahabad. FDP coordinator and Director of IET-DAVV Dr. Sanjeev Tokekar welcomed Dr. Sonali for delivering a session in FDP.

Dr. Sonali started the session with an introduction to data-driven robotics and how data analytics support robotics. She explained that how, through data robotics, we are making robots more intelligent for advantages in business and other purposes, and how complex situations can be handled with data robotics through pattern recognition and multiple decision making. Then she made participants familiar with terms like Robotic Process Automation (RPA), and Artificial Intelligence (AI) and told them that RPA is process-driven and AI is data-driven.

Lastly, she explained about Intelligence automation(IA), its architecture and the techniques used in IA.

She concluded that IA is certainly a big part of next-generation workforce.

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SESSION 5

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 5:

Nature Inspired Mechanisms for
Robots

Speaker: Dr. Shivashankar B. Nair



The speaker for this session, Dr. Shivashankar B. Nair from IIT Guwahati, was welcomed by the FDP coordinator and Director of IET-DAVV Dr. Sanjeev Tokekar for taking out time and delivering a speech.

Dr. Nair's perspective of Robotics was quite different. The topic of discussion was Nature inspired Mechanisms for Robots. He started the session by showing the beauty of nature around IIT Guwahati followed by the statement that "Nature provides a range of practical and viable set of solutions for a gamut of problems". He tried to convey that Self-adaptive and Self-healing properties of nature can be imitated in Robots. Finally he told about the role of our immune system during invasion of a antigen and tried to convey that same role can be implemented in Robots.

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SESSION 6

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 6:

Lab Demonstration on Robotics

Speaker: Dr. Shivashankar B. Nair



Continuing the previous session Dr. Nair started session-3. He gave a brief description of the Immune Network – Dynamics and Metadynamics. He explained that what behaviour (Antibody) should a Robot exhibit for a given situation(Antigen). By his speech participants came to know that by discovering natural rules, one learns new things and if the same algorithm is applied to a Robot, it will work in the same manner. The concept of ‘Immuno inspired behaviour arbitration’ was explained by a video and analyzed with a graph for a better visuality of the topic. The session ended by the lab demonstration of the same concept through Tartarus Software and some electronic components.

10:05 AM | yag-peyt-nlv

Understanding the Data Robotics

Data Robot is the result of the training process based on:

- Historical data
- Continuous refinements of operator / user historical outcome of the taken decisions.

RESOLVING DATA SOLUTIONS MEANS BRIDGING IN THE SCOPE

11:00 AM | yag-peyt-nlv

IA Automation Architecture

Intelligent Automation Architecture

SESSION 4

Immune Network - Dynamics & Metadynamics - N.K.Jerne, 1984

- Pioneering work by N.K.Jerne (Nobel Laureate)
- Immune lymphocytes are regarded to exist that are self-organizing in a self-organizing system
- Identical lymphocytes were called "lymphocytes of type"
- Clonal selection theory: clonal expansion of lymphocytes of one type
- Lymphocytes of type interact with other cells & molecules (e.g. lymphocytes of type j or antibodies of type j) via receptors & signaling sites
- Those of type j interact with others & so on resulting in a dynamic self-organizing system in the absence of an antigen

2:17 PM | yag-peyt-nv

Nature-inspired Mechanisms for Robots

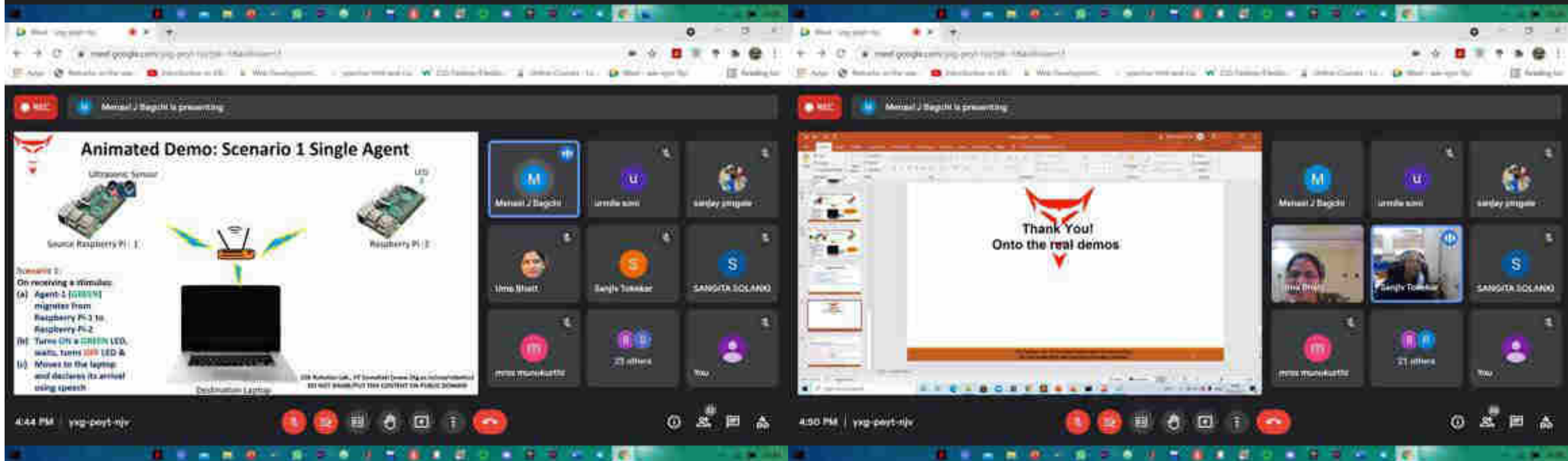
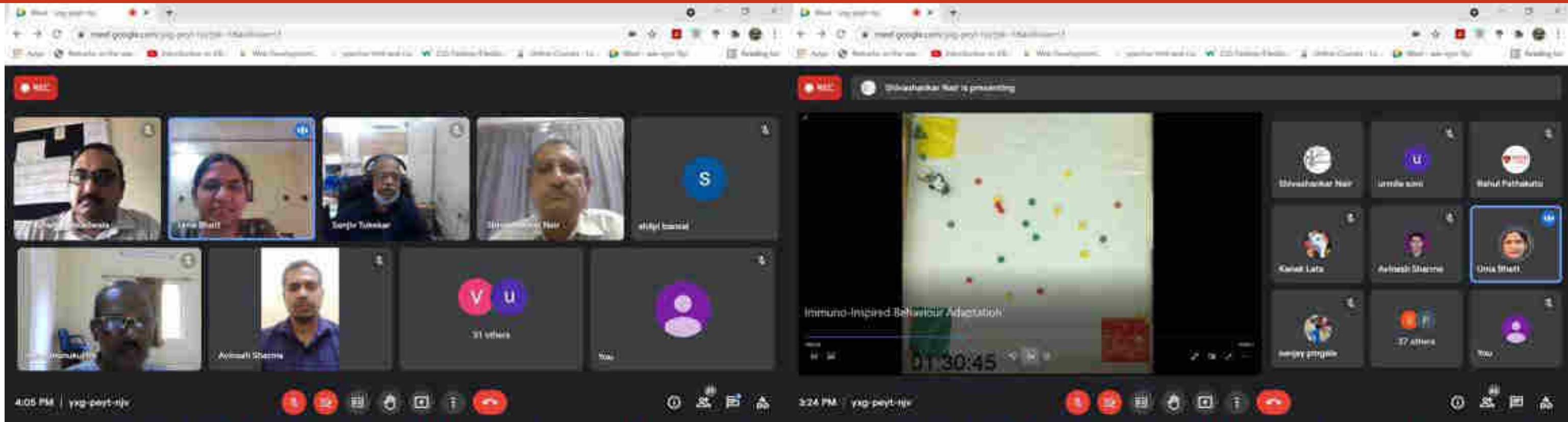
Mishankar B. Nair
(University of Illinois)
 Professor

Department of Computer Science & Engineering
 Indian Institute of Technology Guwahati,
 Assam (INDIA)
 Webpage: www.iitg.ac.in/~mishankar

1:51 PM | yag-peyt-nv

12:21 PM | yag-peyt-nv

SESSION 5



SESSION 6

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DAY 3

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore



Mr. Satish Thakare
Sciencetech Technologies Pvt. Ltd., Indore

Topic:
AI & Robotics



Dr. Santhakumar Mohan
IIT Palakkad

Topic:
Rehabilitation Robotics



Mr. Manish Joshi
Sciencetech Technologies Pvt. Ltd., Indore

Topic:
Arduino Based Robots

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SESSION 7

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 7: AI & Robotics



Speaker: Mr. Satish Thakare

The first session of day 3 was conducted by Mr. Satish Thakare from Sciencetech Technologies Pvt. Ltd.

After being welcomed by the FDP coordinator and director of IET-DAVV Dr. Sanjeev Tokekar, Mr. Thakare started the session by the introduction to Artificial Intelligence (AI). He told that Robotics and AI augment and amplify human potential, and are moving towards human like cognitive abilities.

Mr. Thakare explained that how AI saves time and make things easy. Participants came to know about the major companies in AI and the subfields and technologies underpinning AI. Later, the knowledge of Robotics and AI was given by explaining the ethical issues, limitations and opportunities in it. The session ended followed by the conversation of Dr. Tokekar and Mr. Thakare, which was very informative for the participants.

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SESSION 8

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 8: Rehabilitation Robotics

Speaker: Dr. Santhakumar Mohan



The coordinator of FDP and Director of IET-DAVV Dr. Sanjeev Tokekar welcomed Dr. Santha Kumar Mohan, speaker for session 2. This session was all related to Rehabilitation Robotics and moreover on lower limb rehabilitation. Dr. Mohan started by explaining about industry 4.0 and how we are taking everything on the cloud and remotely accessing it, later he told that the same can be done in healthcare systems. Participants got a deeper knowledge of the topic when Dr. Mohan started sharing his experience. He then demonstrated his Rehab Robo “ANKUR-LL I”. Furthermore, he told about the key technologies and current issues in rehabilitation robotics. The session ended by resolving the queries of participants.

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SESSION 9

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

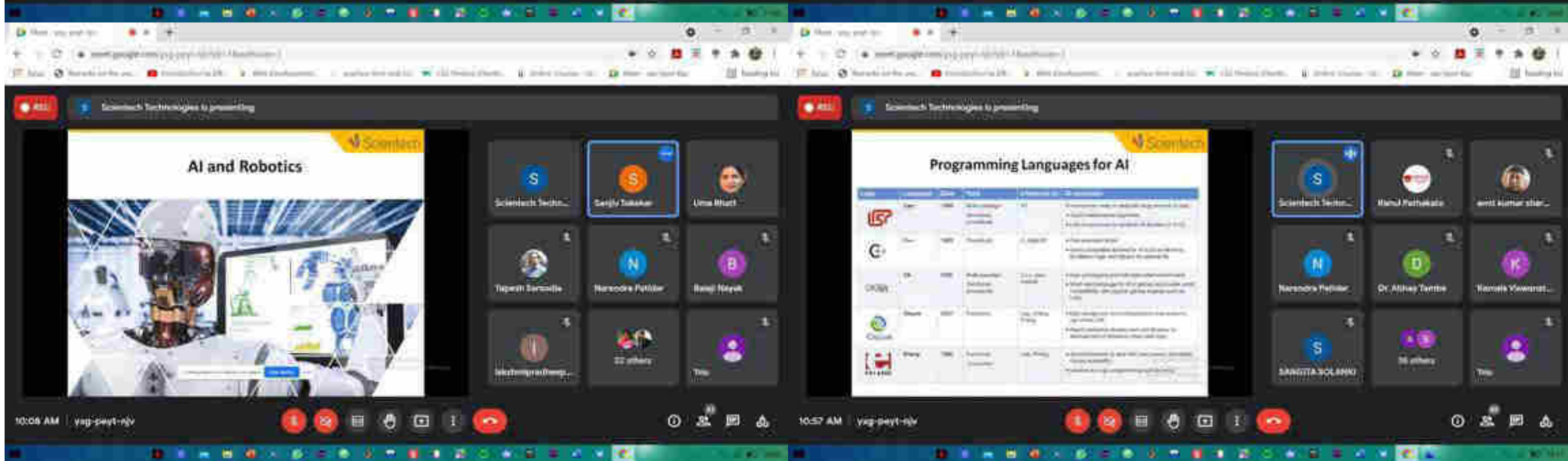
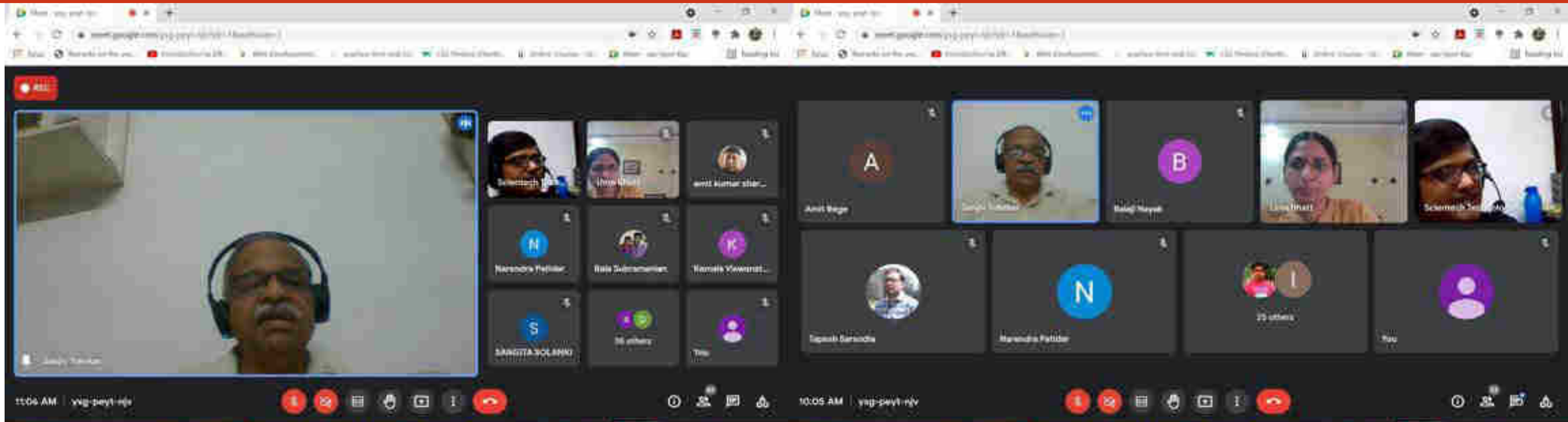
Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 9: Arduino Based Robots

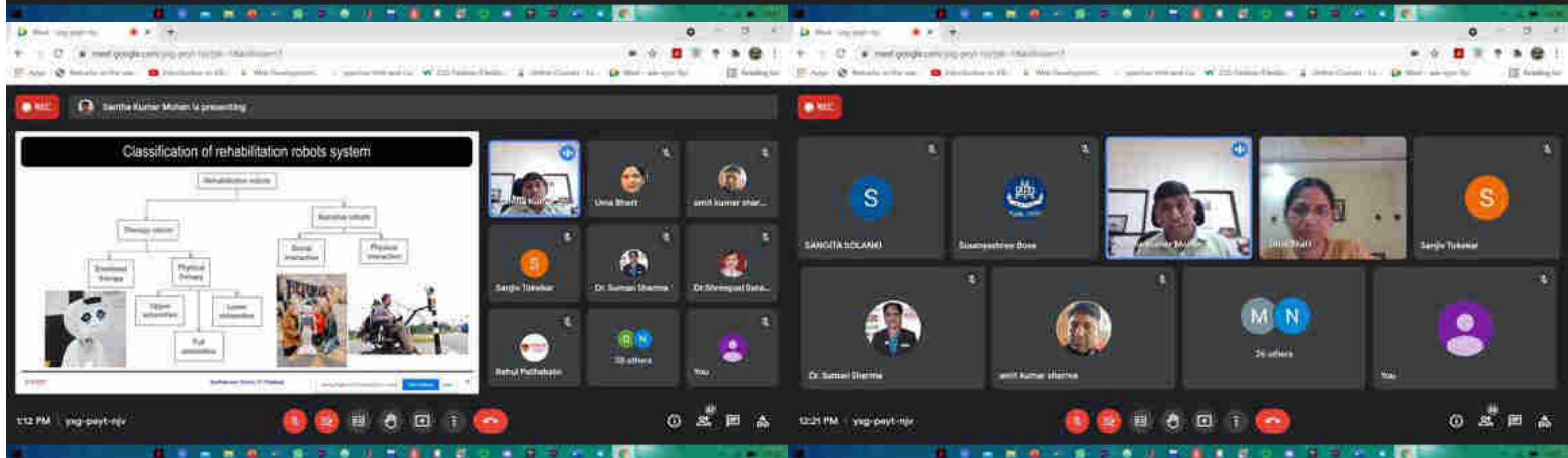
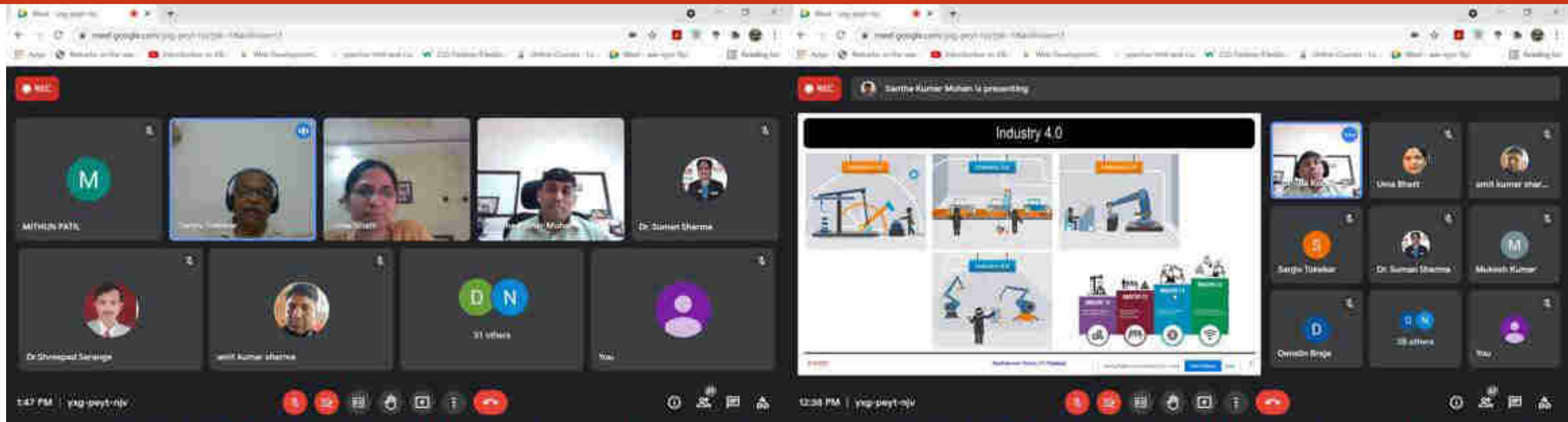
Speaker: Mr. Manish Joshi



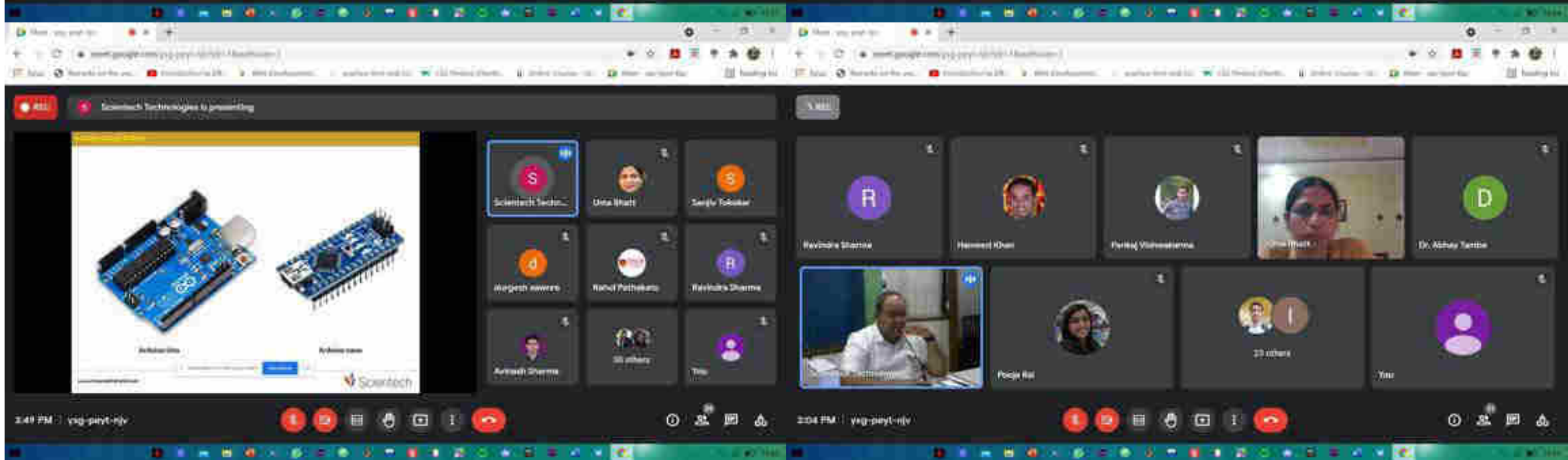
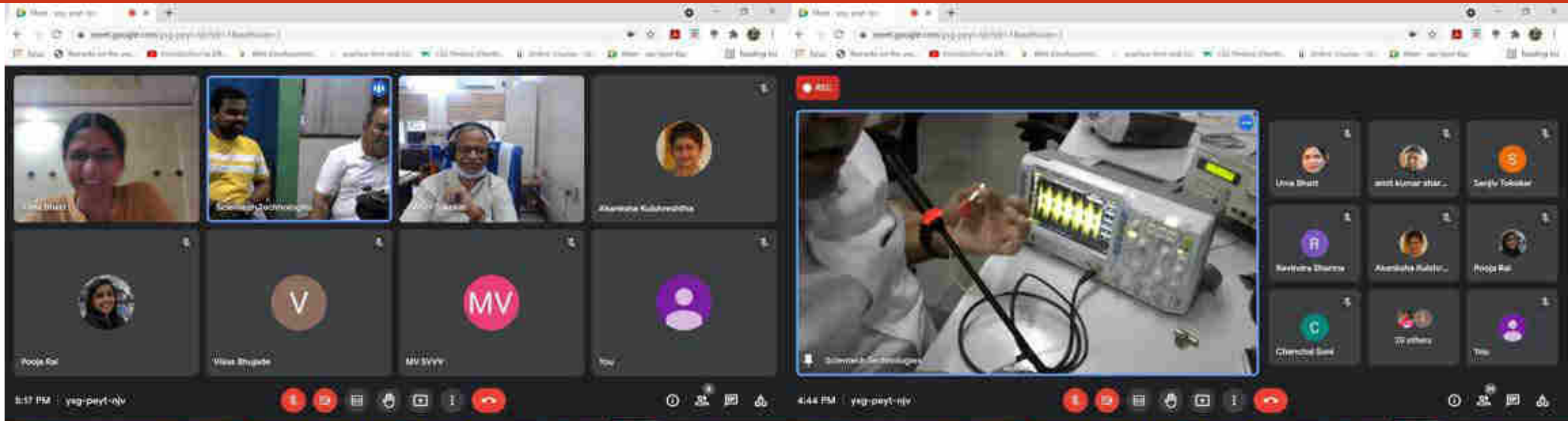
Mr. Manish Joshi from Scientech Technologies Pvt. Ltd. Delivered session 3 which was about the Arduino-based robots. Mr. Joshi started the session by revising the scheme of basic components of a robot. Later he guided how to choose which Arduino to use for any project. He also explained the working of Arduino IDE. Arduino and its rising use in projects was also told by him. Then he described the Arduino Uno and all the components present on it in detail. The session was completed by the programming of a robotic car with Arduino IDE and showing its movement.



SESSION 7



SESSION 8



SESSION 9

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DAY 4

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore



Dr. Subir Kumar Saha
IIT Delhi

Topic:
Robotics2Rural: Innovative Teaching
and Research Approaches



Dr. Sonali Agarwal
IIIT Allahabad

Topic:
Sensors and Actuators



Ms. Neeta Raghuvanshi
Heartfulness, Hyderabad

Topic:
Meditation

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SESSION 10

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 10:
Robotics2Rural: Innovative Teaching
and Research Approaches

Speaker: Dr. Subir Kumar Saha



Day 4 of the Faculty development program started with the speech of renowned and respected Dr. Subir Kumar Saha from IIT Delhi. FDP coordinator and Director of IET-DAVV Dr. Sanjeev Tokekar welcomed Dr. Saha.

He started by telling about his interests namely RoCK-BEE and MuDRA, and how he manages to overcome unemployment and impart true education. Later he demonstrated his projects made for Indian Army and other projects developed by him. Participants came to know about co-bots, industrial bots, defence bots etc. The session was very informative, encouraging and interactive. Later Dr. Saha explained how rural technology action group (RuTAG) made the projects for rural people. He ended the session by showing his publications. Dr. Saha's words and experience were very important and inspiring.

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SESSION 11

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 11: Sensors and Actuators

Speaker: Dr. Sonali Agarwal



FDP coordinator and Director of IET-DAVV Dr. Sanjeev Tokekar welcomed Dr. Anjali Vishwas Kulkarni from IIT Kanpur, to deliver the session-II. Dr. Kulkarni started the session by greeting everyone for Vishwakarma Jayanti. The topic of discussion for this session was actuators and sensors. She tried to relate the karmendriyas and jnanendriyas of our body with actuators and sensors respectively. She then told about types of actuators, their applications in detail, and how to choose an actuator. Later she described sensors and their types with the application. Finally, she concluded by explaining the robotic application of sensing.

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SESSION 12

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

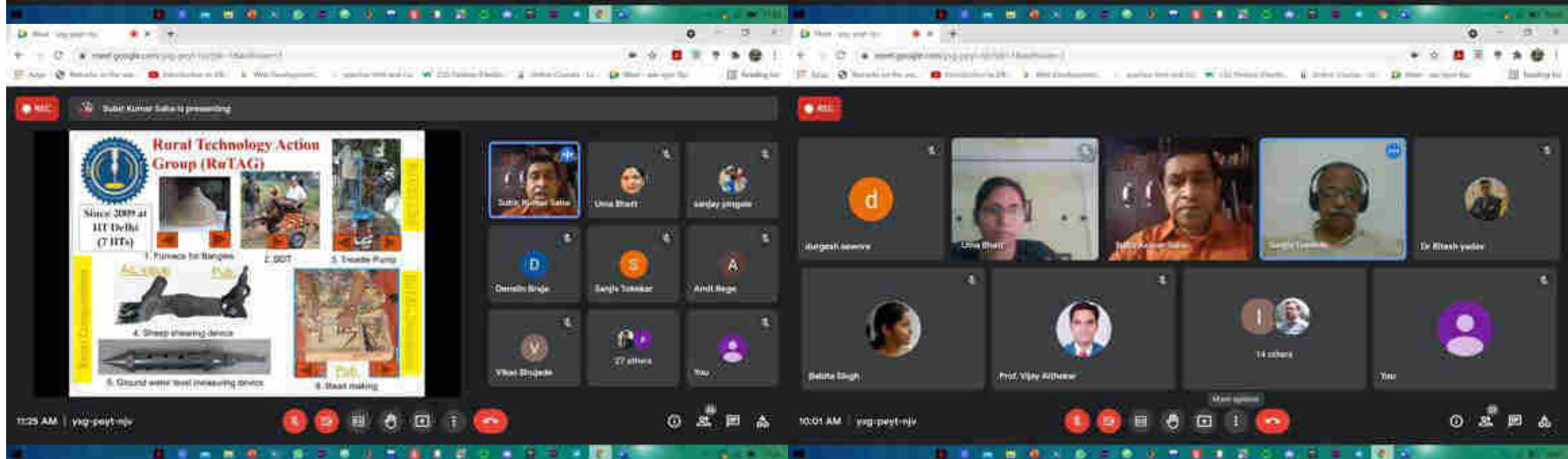
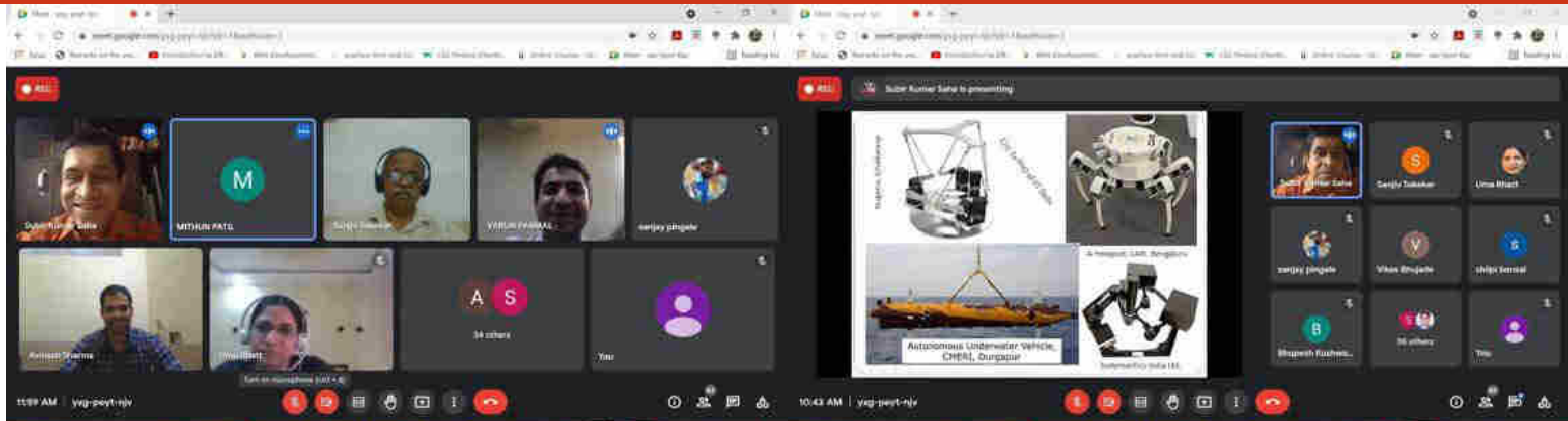
Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 12: Meditation

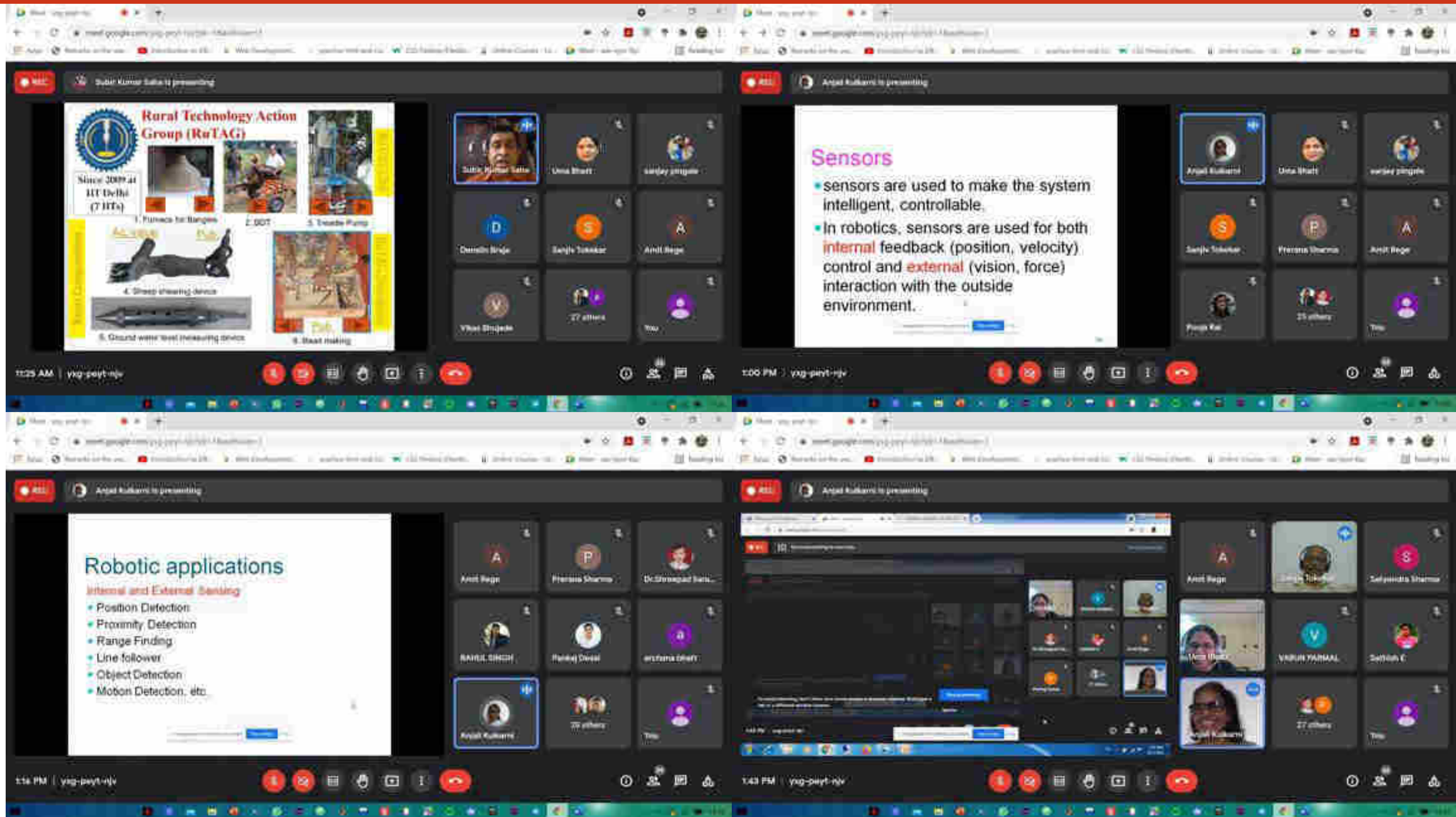
Speaker: Ms. Neeta Raghuwanshi



As we all know: working hard is important, but the relaxation of mind is more important. And the key tool for mind relaxation is meditation. So, in session-3 we had Ms. Neeta Raghuwanshi with us who is a certified healthfulness meditation trainer from Bhopal, after being welcomed by the FDP coordinator Dr. Uma Rathore Bhatt, Ms. Neeta started the session. She explained meditation in a very different manner with the help of many illustrations. Participants got to know that bodily responses to meditation are an expansion of consciousness. Later a meditation session was conducted by her which was a very pleasant and different experience for everyone. She concluded that one can connect to his higher self anytime through meditation.



SESSION 10



SESSION 11

This screenshot shows a Zoom meeting in progress. The main window displays a presentation slide titled "How Are We Wired" with a diagram of a human brain. The slide contains the following text:

- Human Brain = Thinking Brain:** Controls and directs thinking
- Limbic/Mammalian Brain:** The seat of emotion
- Brain Stem = Reptile Brain:** The subconscious part of the brain, e.g. breathing, heartbeat, temperature control

The meeting interface shows a grid of participants on the right and a toolbar at the bottom. The time displayed is 2:05 PM.

This screenshot shows a Zoom meeting in progress. The main window displays a presentation slide with two diagrams of a human head illustrating brain activity during different emotional states:

- Low emotion (calm, relaxed):** Shows a diagram with a low level of activity in the amygdala and higher activity in the cortex. Labels include "higher cortex" and "amygdala".
- High emotion (anger, fear, excitement, hate, disgust, frustration):** Shows a diagram with a high level of activity in the amygdala and lower activity in the cortex. Labels include "higher cortex (deactivated)", "amygdala", and "brain stem".

The meeting interface shows a grid of participants on the right and a toolbar at the bottom. The time displayed is 2:23 PM.

SESSION 12

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On

Robotics: Exploring Technology of
Tomorrow

14th - 18th September 2021

DAY 5

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,

Institute of Engineering & Technology,

Devi Ahilya University, Indore



Dr. Anjali V. Kulkarni
IIT Kanpur

Topic:
R&D in Robotics



Dr. Arpita Sinha
IIT Bombay

Topic:
Multi Robot Systems

AICTE Training and Learning
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On

Robotics: Exploring Technology of
Tomorrow

14th - 18th September 2021

SESSION 13

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 13: R&D in Robotics

Speaker: Dr. Anjali V. Kulkarni



FDP coordinator and Director of IET-DAVV, Dr. Sanjeev Tokekar welcomed Dr. Anjali Vishwas Kulkarni to deliver the session. Dr. Kulkarni started the session by relating the concept of Mechatronics with the shloka of the epic “Bhagavad Gita”. She told how technology changed many business models. She explained about Robotic research and development issues and how to deal with them. She explained her experience in designing a lunar rover for ISRO Chandrayan 2, and many of her projects, with the help of demonstrative videos. Later she described in detail all the lab work with the help of some of her projects and studies, through which the participants got a clear sight of accomplishing any particular task.

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14th - 18th September 2021

SESSION 14

Coordinator

Dr. Sanjiv Tokekar

Co-Coordinator

Dr. Uma Rathore Bhatt

Assistant Professor,

Electronics and Telecommunication Engineering,
Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 14: Multi Robot Systems

Speaker: Dr. Arpita Sinha



Session 2 was about Multiple mobile robot systems which was conveyed by Dr. Arpita Sinha from IIT Bombay. After being welcomed by the FDP coordinator and Director of IET-DAVV Dr. Sanjeev Tokekar, Dr. Sinha started the session. She started by explaining the multi-robot architecture, their communication and why they are needed. She also told about the research challenges in the multi-robot systems and how to overcome them and also gave a brief about swarm robotics. With the help of many videos, Dr. Sinha explained different concepts and made participants familiar with the multi-robot task allocation taxonomy. She ended the session by recommending some books that she refers to for robotics.

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SESSION 15

Coordinator

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Co-Coordinator

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Assistant Professor,

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Institute of Engineering & Technology,
Devi Ahilya University, Indore

Session 15:

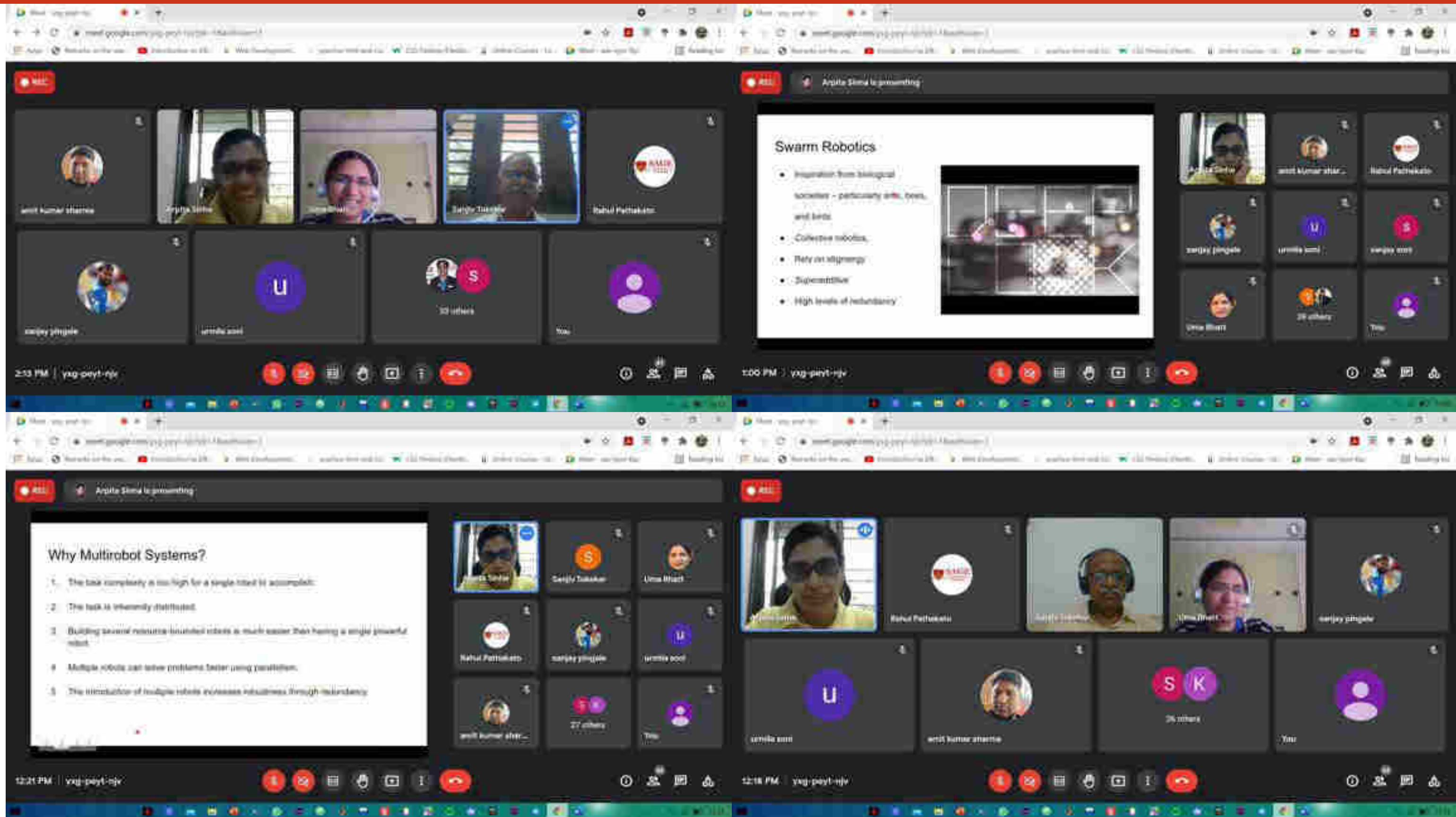
Valedictory cum Feedback Session by the
respected participants of the Faculty Development
Program

The last session of the Faculty Development Program was a Feedback and Valedictory session. A total of 84 participants from different states of INDIA actively participated in the program. After this short journey of 5 days participants came to know many new things which were very informative for them. Everyone thanked FDP coordinator Dr. Sanjeev Tokekar, FDP co-coordinator Dr. Uma Rathore Bhatt, Mr. Tapeshe Sarsodia, and all organizers of the FDP for conducting such a wonderful program. All were inspired by the renowned speakers who gave practical knowledge and spared time with us. Everyone was very happy and enthusiastic, with the hope of meeting again someday, the session ended.

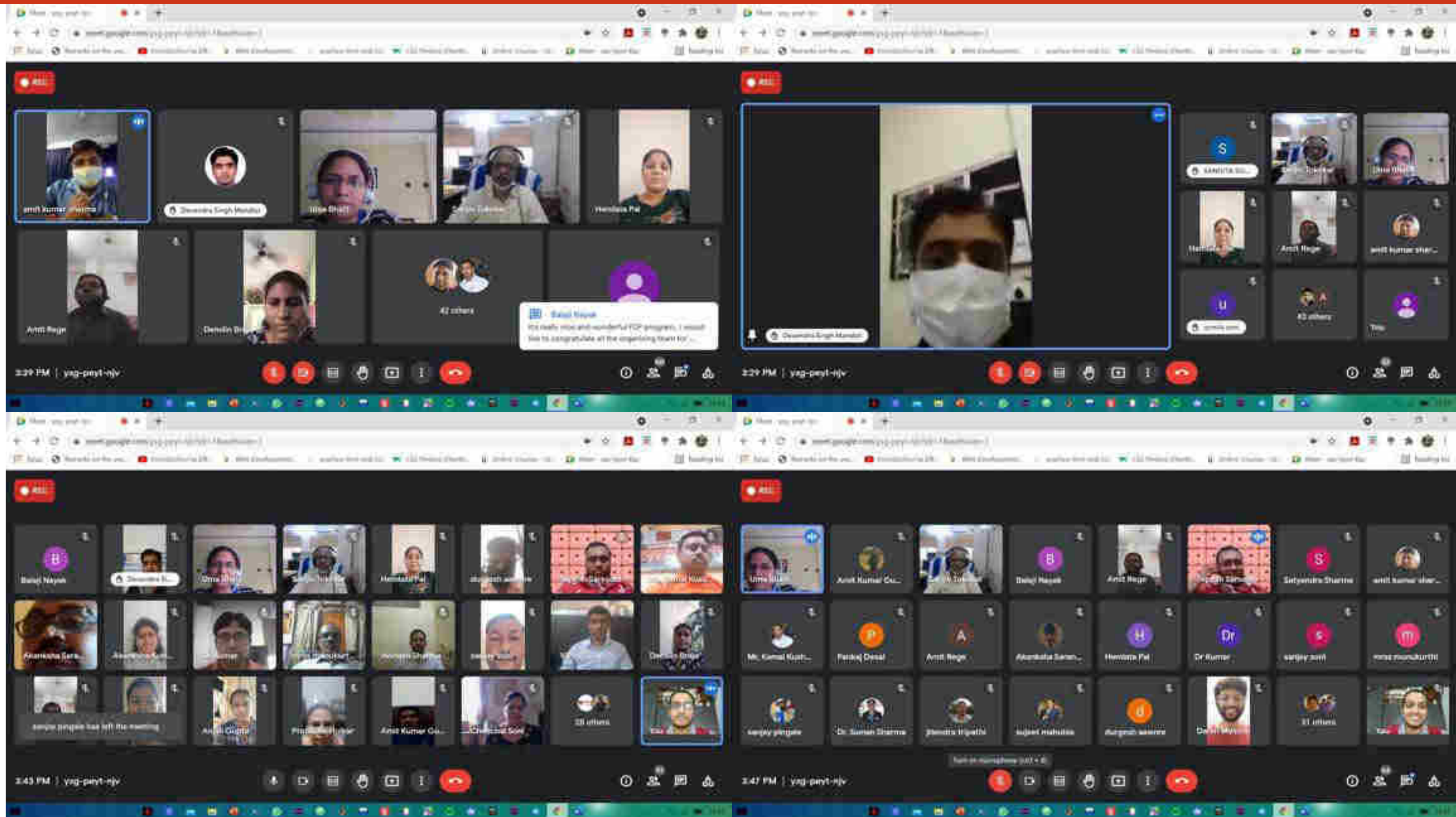
This screenshot shows a Zoom meeting in progress. The main window displays a slide titled "Humanoid Robots" with the following text: "HuBo 2 is Korea's (KAIST, univ.) continuing project of a full-size humanoid that can walk, run, dance, and grasp objects. It uses a straight-leg walking gait that's an improvement over most bipedal robots." The slide includes images of humanoid robots. The meeting interface shows a grid of participants on the left and a list of names on the right. The bottom status bar indicates the time is 12:02 PM and the meeting ID is yag-pwyt-njv.

This screenshot shows a Zoom meeting in progress. The main window displays a slide titled "Design and Development of Lunar Rover (DLR)" with a diagram of a rover and the following text: "The basic suspension mechanism of the six wheel rover is designed using a rocker-bogie mechanism. This mechanism imparts the rover with a maximum obstacle climbing ability and also ensures the stability of the main body. In order to design the rover with a minimum mass a detailed study is done to compare the stresses on different linkages of the rover. Based on the forces acting at the wheels when traversing a given terrain the corresponding stresses in links were determined using ANSYS." The meeting interface shows a grid of participants on the right and a list of names on the left. The bottom status bar indicates the time is 10:50 AM and the meeting ID is yag-pwyt-njv.

SESSION 13



SESSION 14

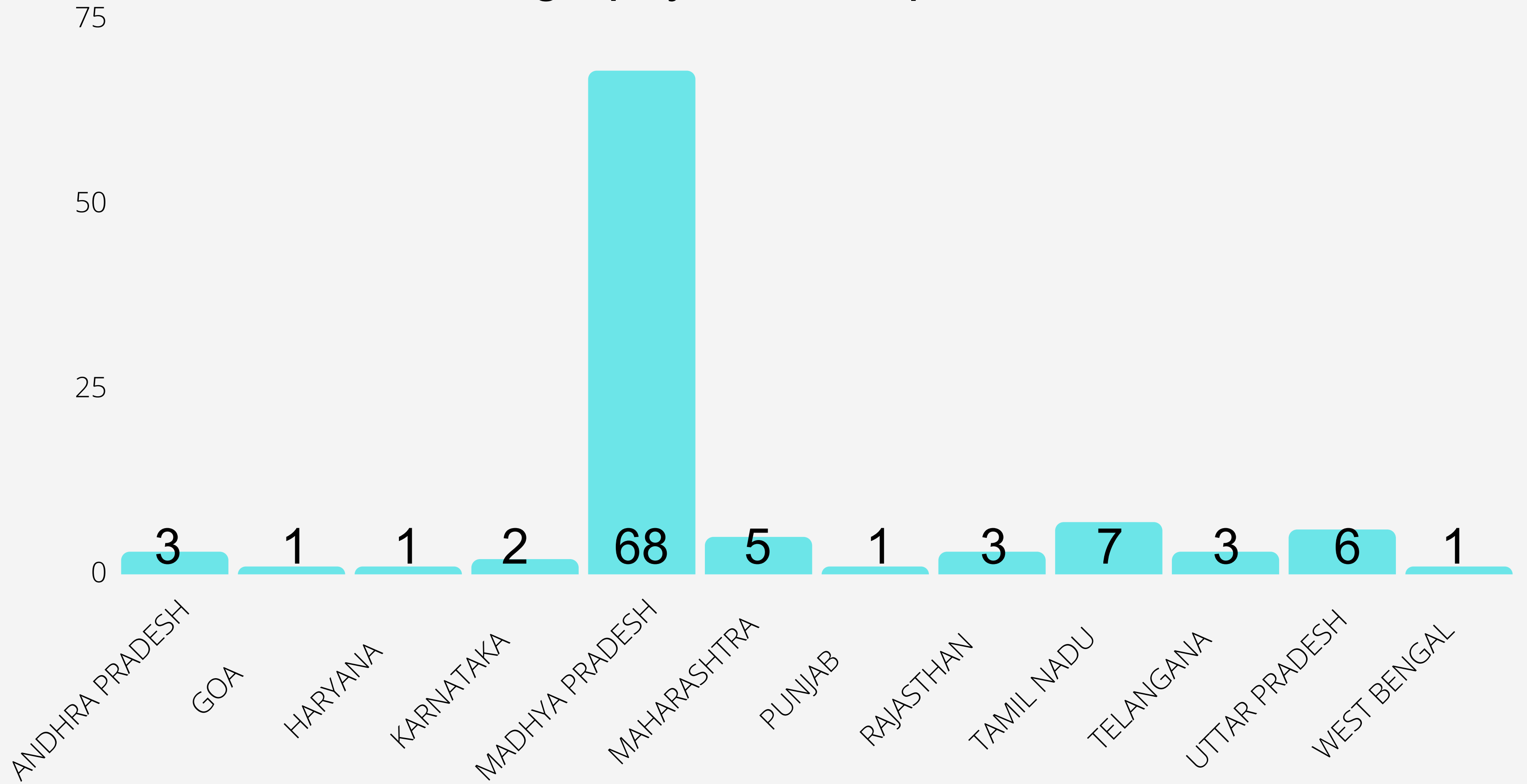


VALEDICTORY SESSION & Feedback

STATISTICS RELATED TO PARTICIPANTS



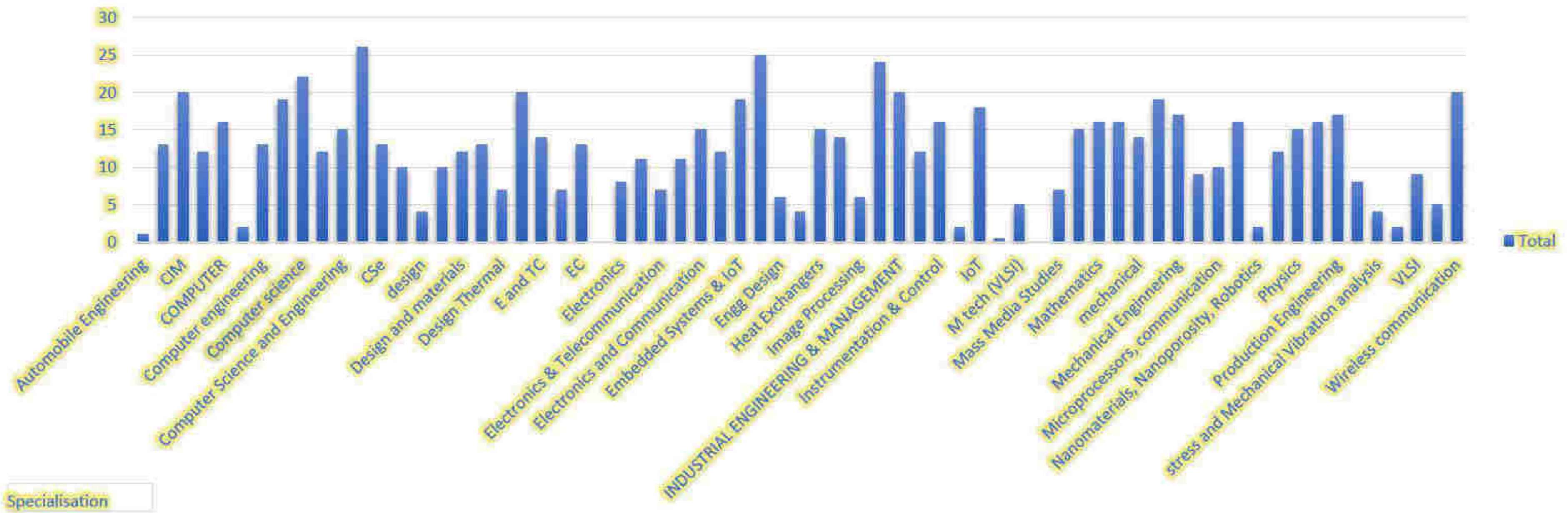
Demography of Participants



Various States Of India

Max of Experience (years)

Years of Experience vs respective Field Chart



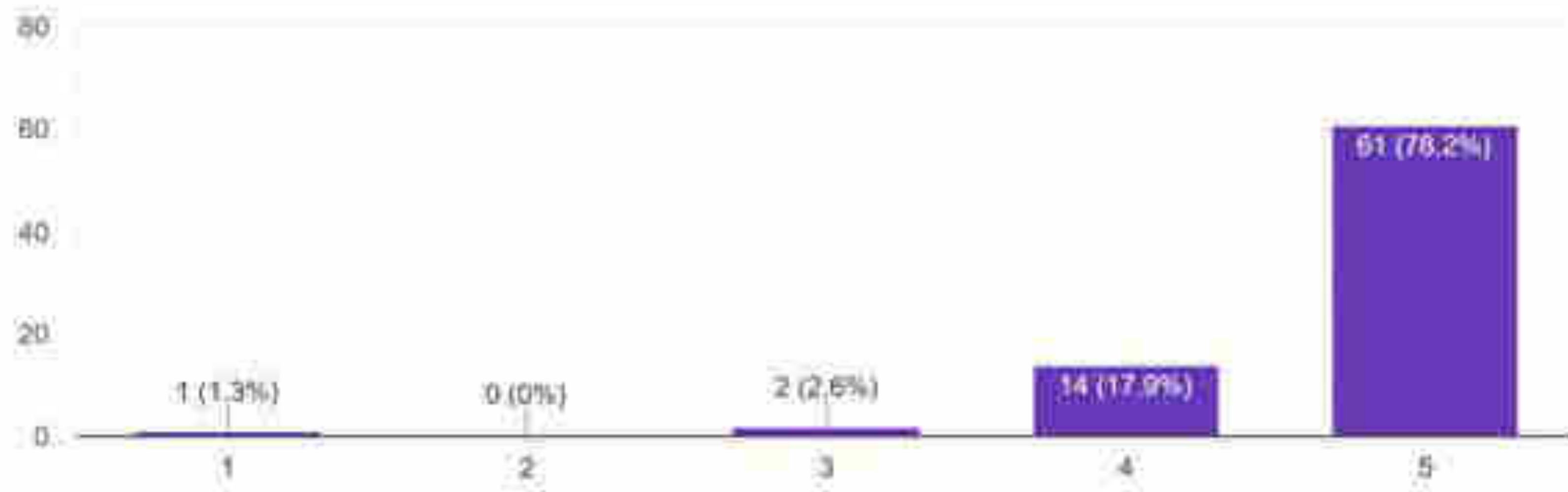
Specialisation

**FEEDBACK FROM
OUR LOVELY
PARTICIPANTS**



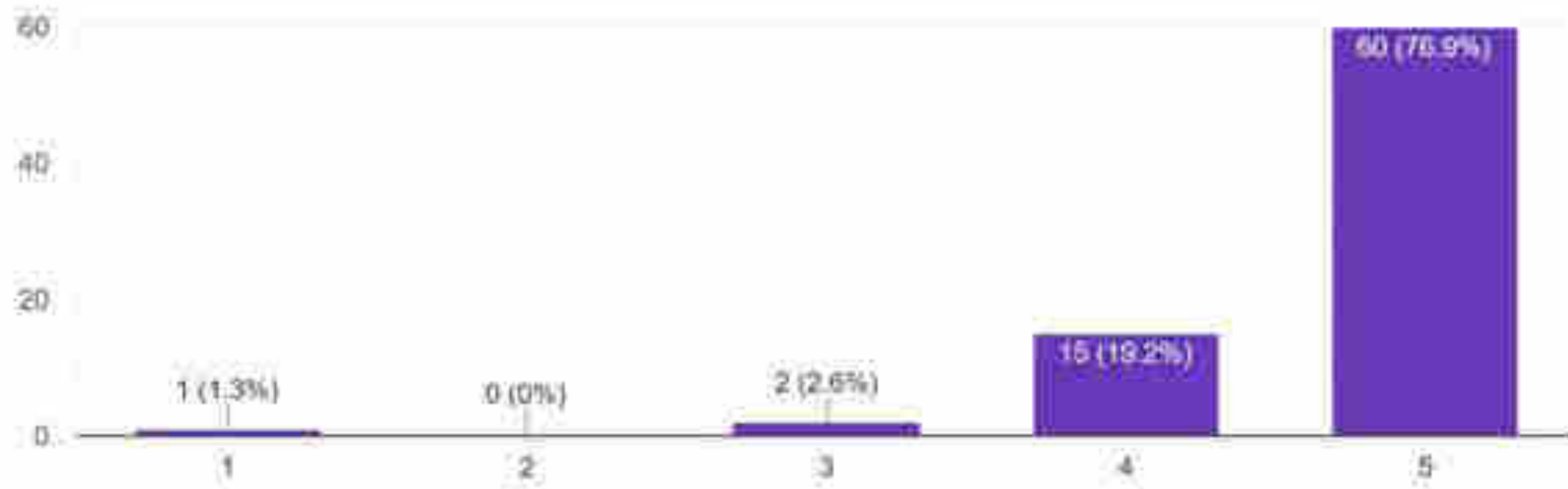
How well organized were the sessions (on the scale of 1 to 5)

78 responses



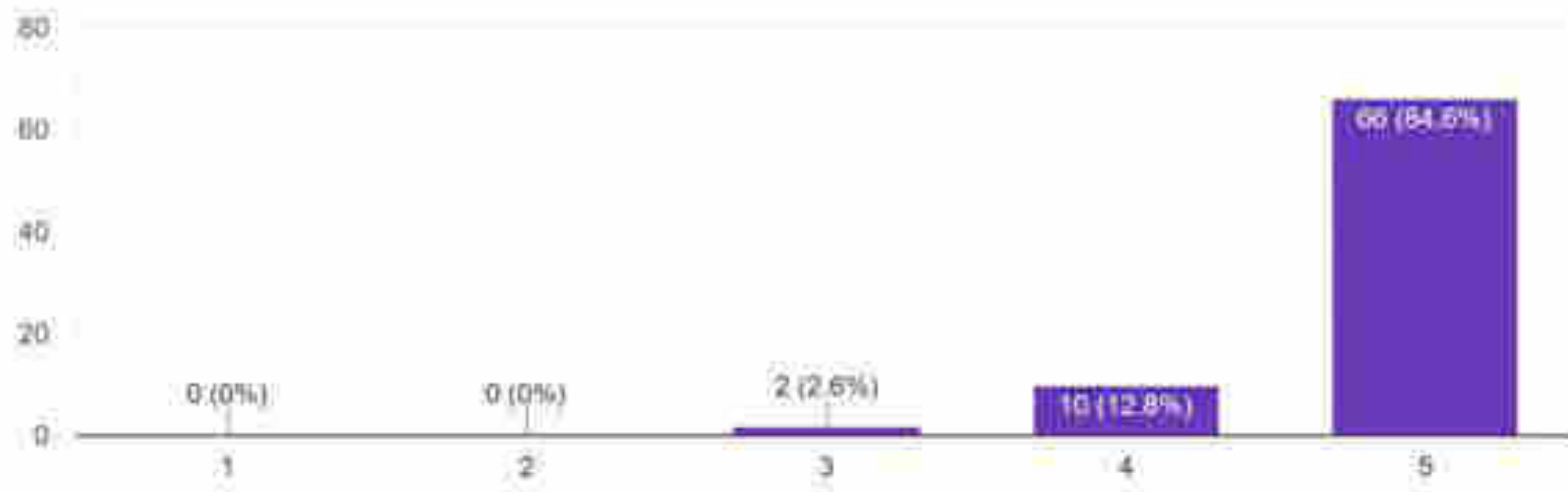
How was the content of the sessions by the expert (on the scale of 1 to 5)

78 responses



How would you rate this FDP program overall (On the scale of 1 to 5)

78 responses



PARTICIPANTS DATA

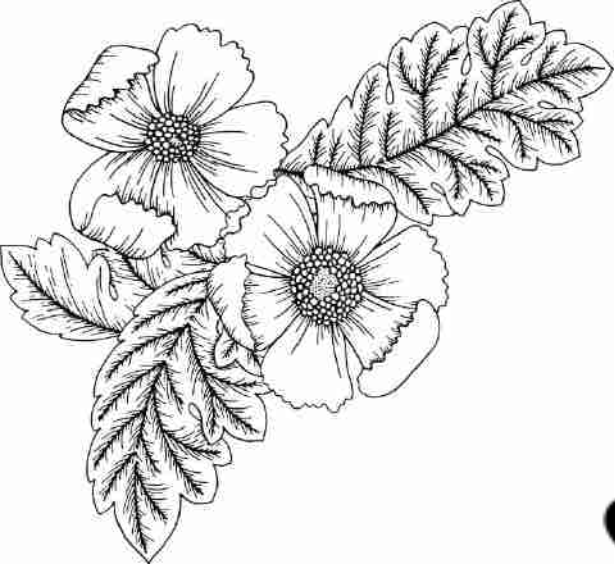


List of Participants who received the certificates as per AICTE norms

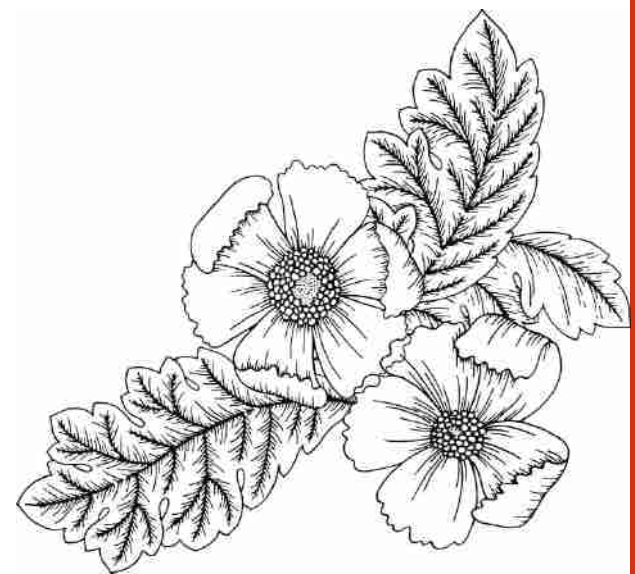
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**HUGE THANKS
TO AICTE**



**FOR PROVIDING SUPPORT
AND OPPORTUNITY FOR
CONDUCTING THE FACULTY
DEVELOPMENT PROGRAM
(FDP) ON “ROBOTICS:
EXPLORING TECHNOLOGY OF
TOMORROW”**