XAVIER INSTITUTE OF ENGINEERING

A SISTER INSTITUTION OF ST. XAVIER'S COLLEGE

Online session on "Optical Communication for cellular network" in the Tech-Week in (From 31 Aug-4Sept) on on 1st September, 2021

DATE: 01/09/2021

Event Coordinator(s)

1. **Prof. Smita Pawar**

Time & Place:

September 01, 2021

4:00pm to 5:15 pm

Google Meet

Department:

Electronics and Telecommunication

Under TSX

No. of participant:

22 Students

OBJECTIVE:

The last few decades have seen rapid advances in information and communication technology. We commonly use broadband technology with high-speed Internet connectivity at our homes, offices, and in our mobile devices. The bandwidth and high-capacity requirements due to the increased use of Internet and broadband services have exceeded our expectations in twenty-first century. Wireless optical communication (WOC) uses optical carrier in the near-infrared (IR) and visible bands and is considered a viable solution for realizing very high-speed and large-capacity communication links. It is a line-of-sight communication using a laser to transmit the information signal between two transceivers over an unguided channel which may be either the atmosphere or free space.

Session Highlights:

- **1G TO 5G OVERVIEW**
- **5G GOALS**
- **WHY 5G NEEDS FIBER**
- **FIBER DENSIFICATION**

RESOURCE PERSON (S): Prof. Shailaja Udtewar, XIE.

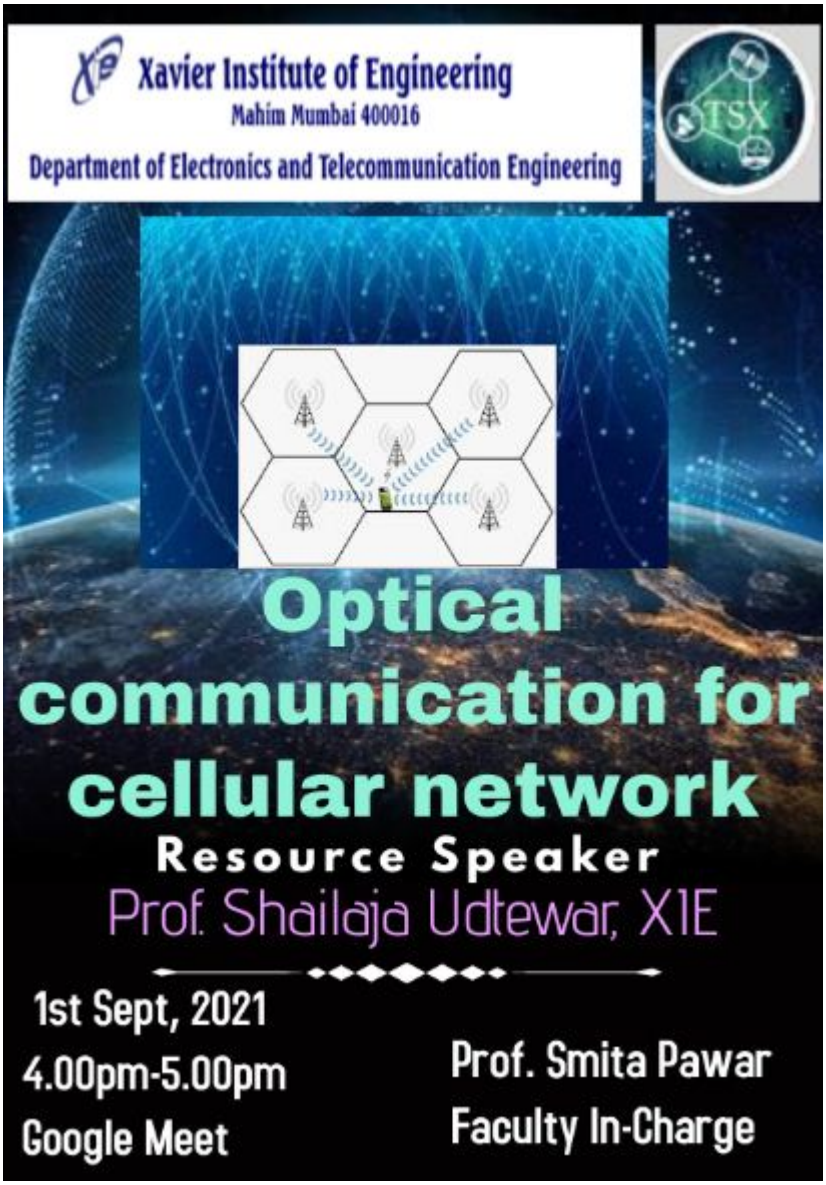
OUTCOME:

WHY 5G NEEDS FIBER? 5G, High Radio Frequencies & Small Cells, 5G requires a completely different backhaul / fronthaul connection, Cell optimization, 5G needs fiber to every cell site,Fiber deployment : cost challenges

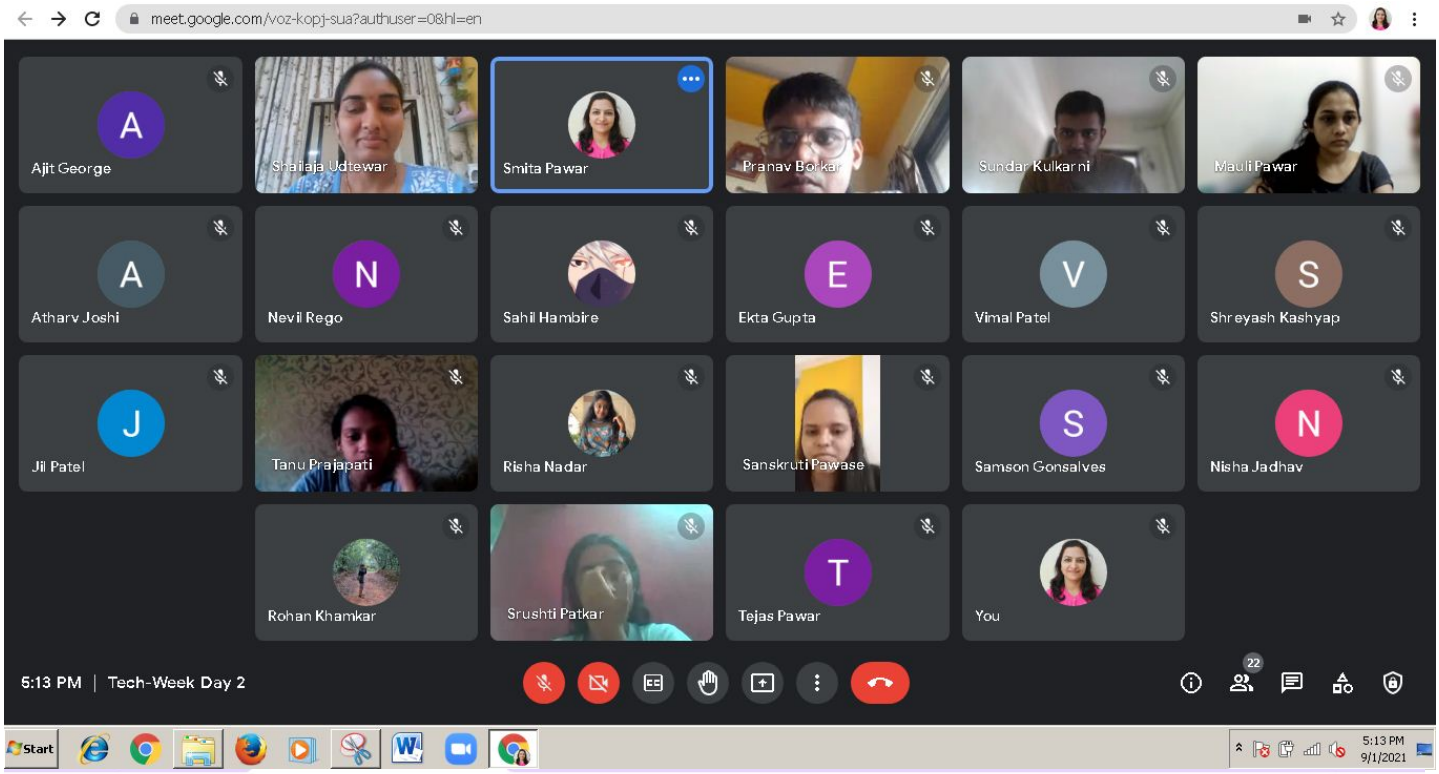
Prof. Smita Pawar
Coordinator, Faculty in charge

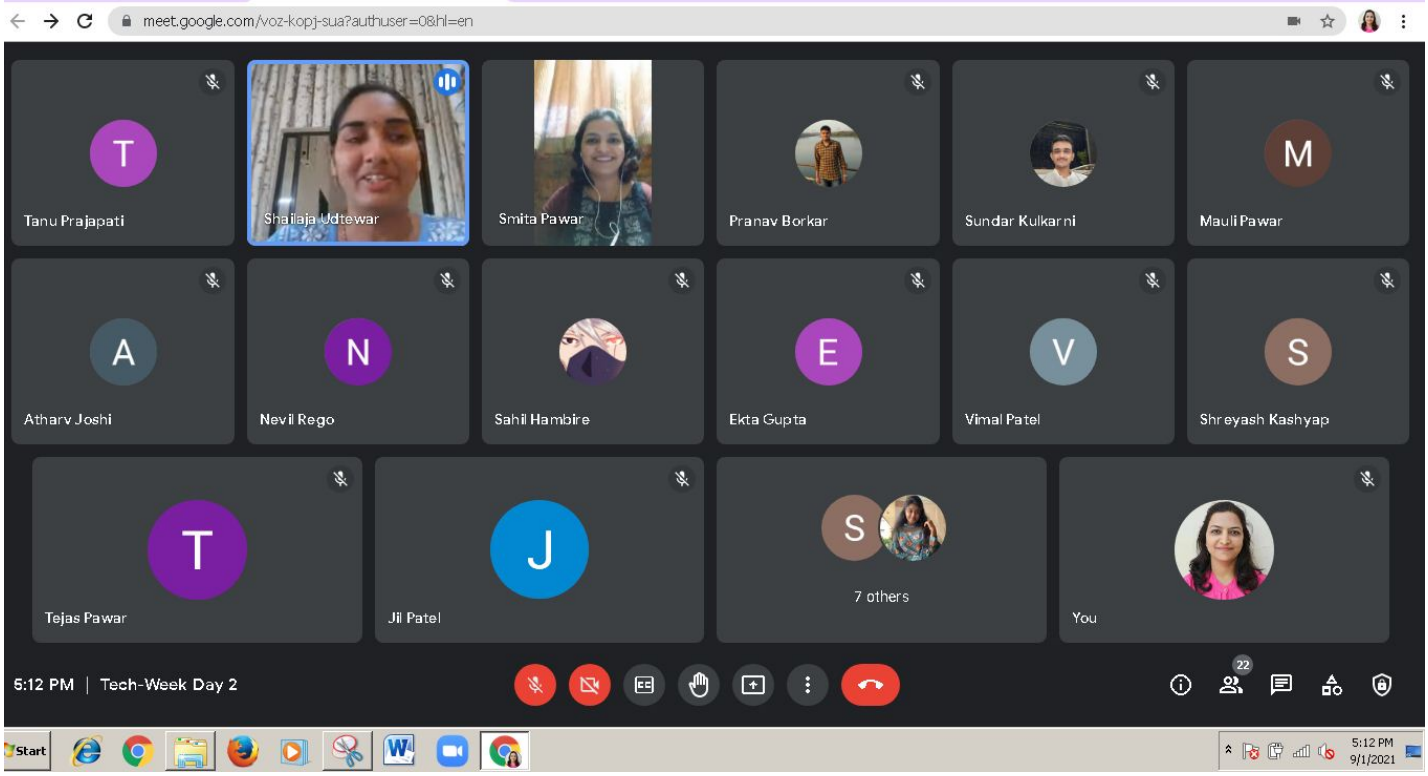
Dr.Vidya Sarode
HoD, EXTC

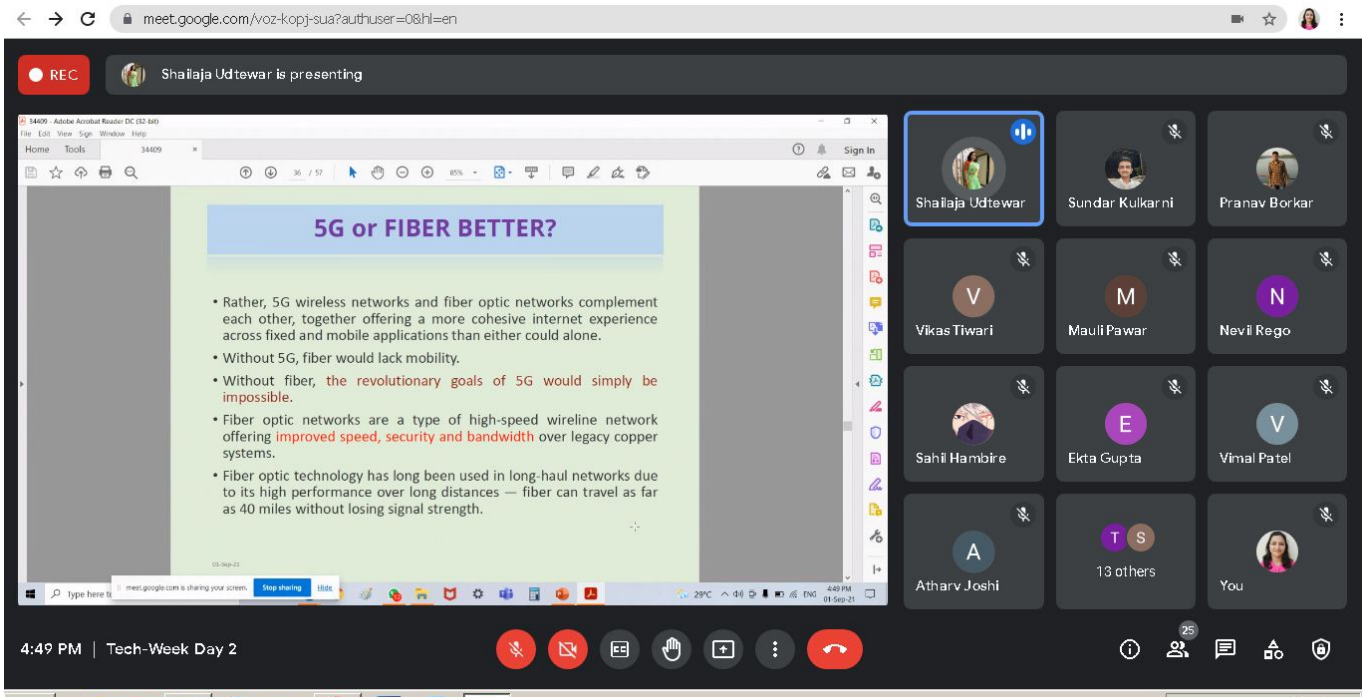
EVENT POSTER:

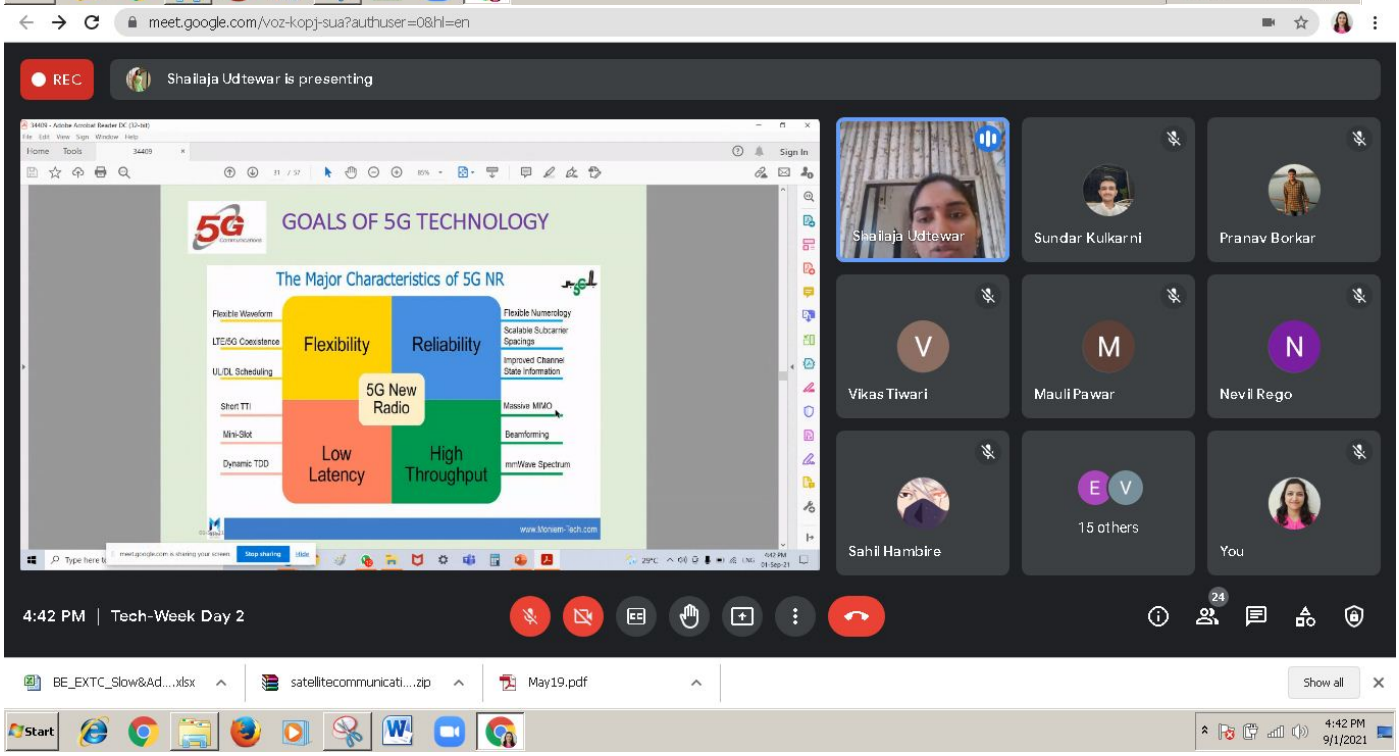


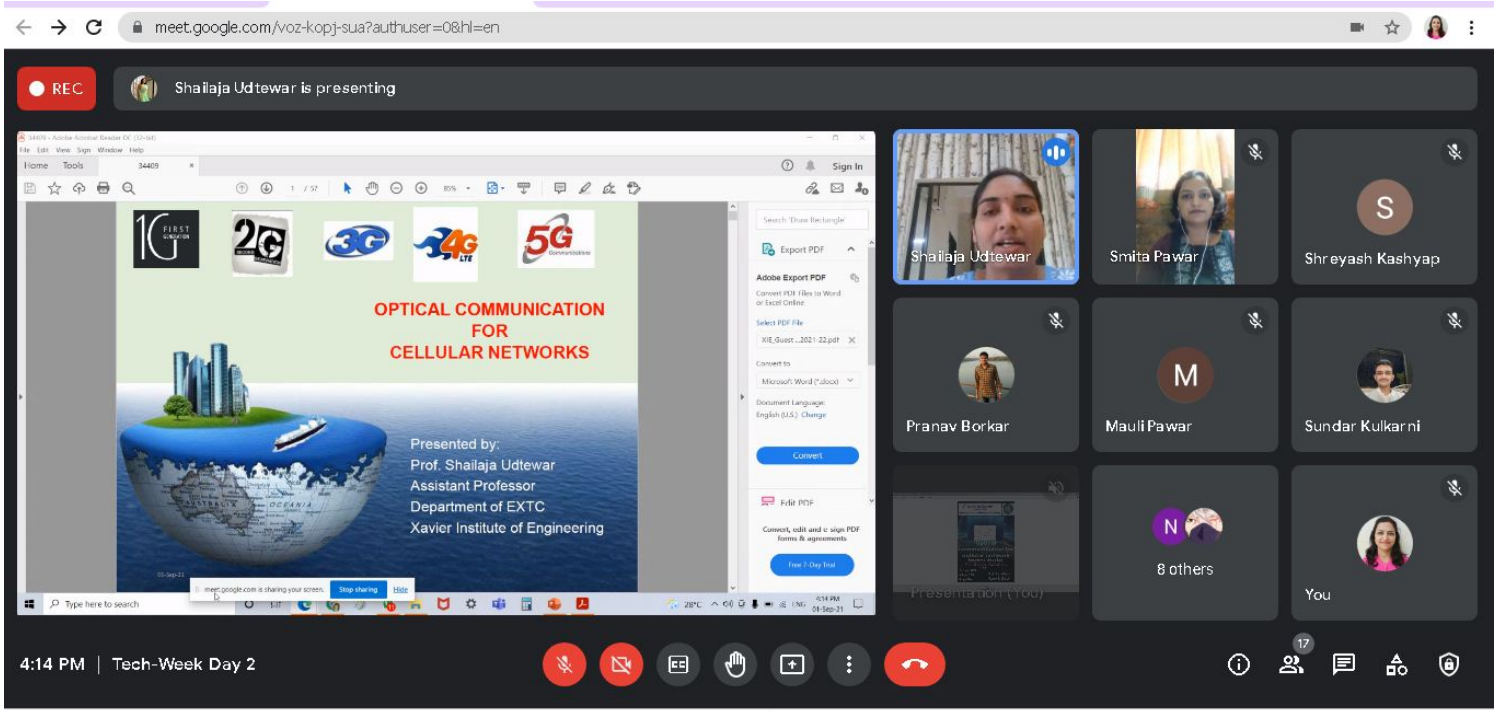
EVENT SCREENSHOT:

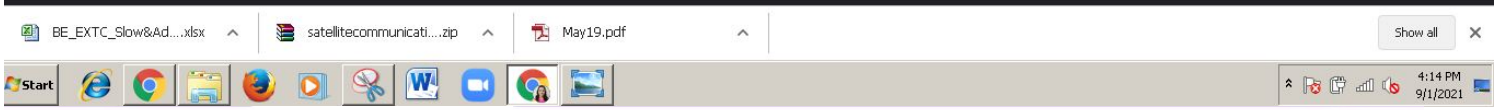

meet.google.com/voz-kopj-sua?authuser=0&hl=en
Ajit George
Shailaja Udtewar
Smita Pawar
Pranav Borkar
Sundar Kulkarni
Mauli Pawar
Atharv Joshi
Nevil Rego
Sahil Hambire
Ekta Gupta
Vimal Patel
Shreyash Kashyap
Jil Patel
Tanu Prajapati
Risha Nadar
Sanskruti Pawase
Samson Gonsalves
Nisha Jadhav
Rohan Khamkar
Srushti Patkar
Tejas Pawar
You
5:13 PM | Tech-Week Day 2
22
Start
5:13 PM
9/1/2021

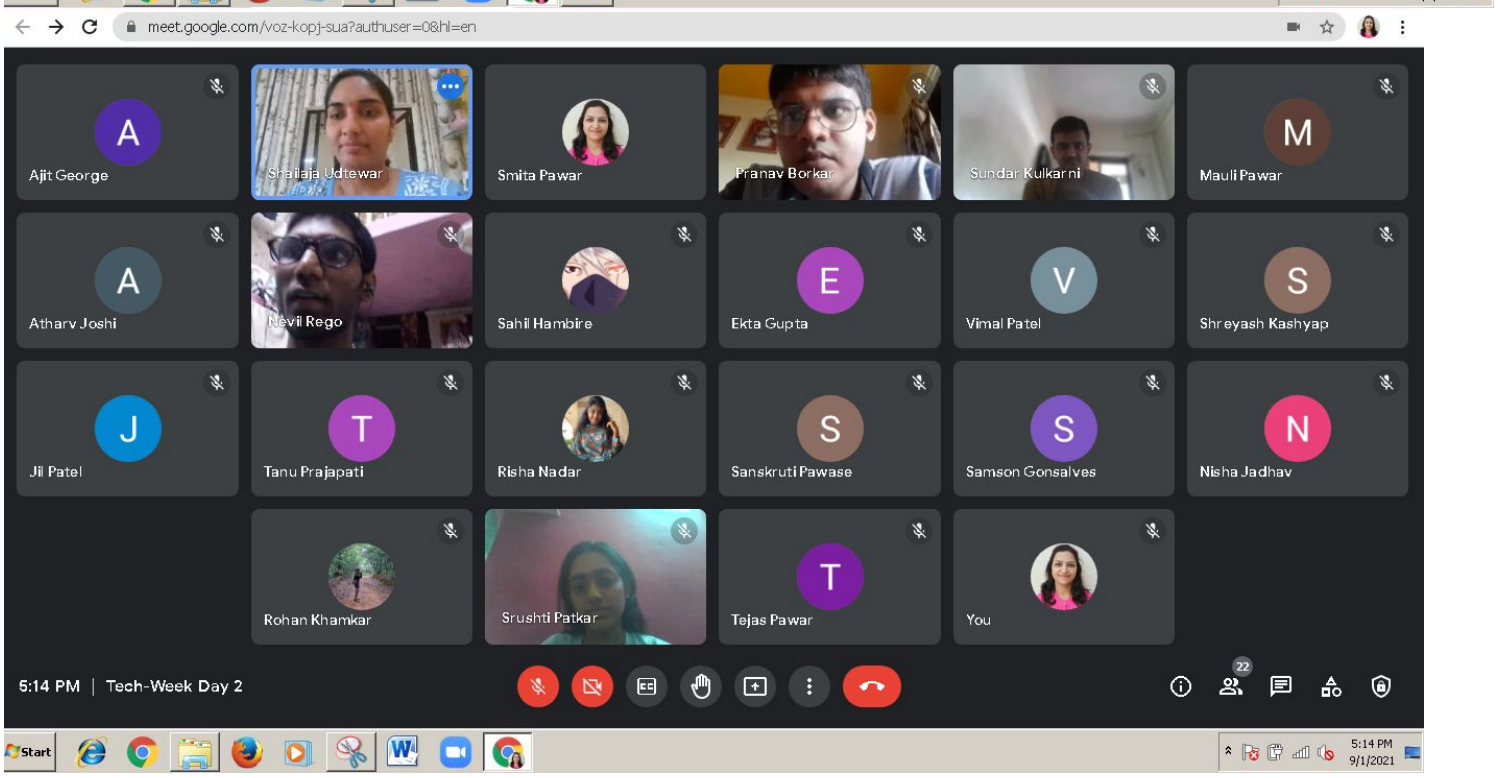

meet.google.com/voz-kopj-sua?authuser=0&hl=en
Tanu Prajapati
Shailaja Udtewar
Smita Pawar
Pranav Borkar
Sundar Kulkarni
Mauli Pawar
Atharv Joshi
Nevil Rego
Sahil Hambire
Ekta Gupta
Vimal Patel
Shreyash Kashyap
Tejas Pawar
Jil Patel
7 others
You
5:12 PM | Tech-Week Day 2
22
Start
5:12 PM
9/1/2021


meet.google.com/voz-kopj-sua?authuser=0&hl=en
REC
Shailaja Udtewar is presenting
5G or FIBER BETTER?
• Rather, 5G wireless networks and fiber optic networks complement each other, together offering a more cohesive internet experience across fixed and mobile applications than either could alone.
• Without 5G, fiber would lack mobility.
• Without fiber, the revolutionary goals of 5G would simply be impossible.
• Fiber optic networks are a type of high-speed wireline network offering improved speed, security and bandwidth over legacy copper systems.
• Fiber optic technology has long been used in long-haul networks due to its high performance over long distances — fiber can travel as far as 40 miles without losing signal strength.
Shailaja Udtewar
Sundar Kulkarni
Pranav Borkar
Vikas Tiwari
Mauli Pawar
Nevil Rego
Sahil Hambire
Ekta Gupta
Vimal Patel
Atharv Joshi
13 others
You
4:49 PM | Tech-Week Day 2
Start
4:49 PM
9/1/2021


meet.google.com/voz-kopj-sua?authuser=0&hl=en
REC
Shailaja Udtewar is presenting
GOALS OF 5G TECHNOLOGY
The Major Characteristics of 5G NR
Flexibility
Reliability
5G New Radio
Low Latency
High Throughput
Flexible Waveform
LTE/5G Coexistence
UL/DL Scheduling
Short TTI
Mini-Slot
Dynamic TDD
Flexible Numerology
Scalable Subcarrier Spacings
Improved Channel State Information
Massive MIMO
Beamforming
mmWave Spectrum
Shailaja Udtewar
Sundar Kulkarni
Pranav Borkar
Vikas Tiwari
Mauli Pawar
Nevil Rego
Sahil Hambire
15 others
You
4:42 PM | Tech-Week Day 2
BE_EXTC_Slow&Ad....xlsx
satellitecommunicati....zip
May19.pdf
Show all
Start
4:42 PM
9/1/2021


meet.google.com/voz-kopj-sua?authuser=0&hl=en
REC
Shailaja Udtewar is presenting
OPTICAL COMMUNICATION
FOR
CELLULAR NETWORKS
Presented by:
Prof. Shailaja Udtewar
Assistant Professor
Department of EXTC
Xavier Institute of Engineering
Shailaja Udtewar
Smita Pawar
Shreyash Kashyap
Pranav Borkar
Mauli Pawar
Sundar Kulkarni
8 others
You
4:14 PM | Tech-Week Day 2


BE_EXTC_Slow&Ad....xlsx
satellitecommunicati....zip
May19.pdf
Show all
Start
4:14 PM
9/1/2021


meet.google.com/voz-kopj-sua?authuser=0&hl=en
Ajit George
Shailaja Udtewar
Smita Pawar
Pranav Borkar
Sundar Kulkarni
Mauli Pawar
Atharv Joshi
Nevil Rego
Sahil Hambire
Ekta Gupta
Vimal Patel
Shreyash Kashyap
Jil Patel
Tanu Prajapati
Risha Nadar
Sanskruti Pawase
Samson Gonsalves
Nisha Jadhav
Rohan Khamkar
Srushti Patkar
Tejas Pawar
You
5:14 PM | Tech-Week Day 2
Start
5:14 PM
9/1/2021