

## ACTIVITY REPORT

1.	Name of Activity (Title)	<b>Expert Lecture on “Impact on Bulk Power System Operation due to High penetrated DERs at DN” and “Interoperability a key for TSO-DSO Interaction”</b>
2.	Type of Activity (FDP/Lecture/Technical/conference etc.)	<b>Expert Lecture</b>
3.	Name of department/ Section/ cell conducting the activity	International Affairs Cell
4.	In coordination with (if any)	Department of Electronics & Communication Engineering and Department of Electrical Engineering
5.	Date of conduct	<b>16/08/2023</b>
6.	Name of Activity Coordinator (s)	Dr. Mamta Kathuria
7.	Amount Spent	INR 10000/-
8.	Funding/ grant from (University/ Industry/ UGC/ AICTE/ DST/ TEQIP/ Outside Society/ agency/others (mention)	University
9.	Target audience	UG students of Electronics and Electrical Engineering
10.	No. of beneficiaries	101
11.	Name of Outside guests	<b>Dr. Pawan Sharma</b> , who is currently working as an Associate Professor at the Faculty of Engineering Science and Technology, UiT, The Arctic University of Norway (Narvik campus) <b>Dr. Charu Sharma</b> , is working as an Associate Professor at the UiT, The Arctic University of Norway (Tromso campus).
12.	Any other information	Report attached
13.	Also attach two/ three good quality photographs	Photographs attached

## Report

**International Affairs Cell- Expert Lecture on "Impact on Bulk Power System Operation due to High penetrated DERs at DN" and "Interoperability a key for TSO-DSO Interaction" on 16th August 2023.**

The **International Affairs Cell**, J.C. Bose University of Science & Technology, YMCA, Faridabad **in coordination with Department of Electronics & Communication Engineering and Department of Electrical Engineering of the University** organised an expert Lecture on "**Impact on Bulk Power System Operation due to High penetrated DERs at DN**" and "**Interoperability a key for TSO-DSO Interaction**" on **16th August 2023** for the students of prefinal and final year from the Electronics and Electrical Engineering Departments. The lecture was intended to make students aware about the latest development in this area with focus on providing them with the broad idea about importance of Interoperability for TSO-DSO Interaction.

The session was delivered by eminent speaker Dr. Pawan Sharma, who is currently working as Associate Professor at Faculty of Engineering Science and Technology, UiT, The Arctic University of Norway (Narvik campus) in the Electrical power engineering group. Dr. Sharma discussed Voltage profile of LV systems without PV and with PV penetration and Impact of variable RES on the power system flexibility.

His session was followed by discourse from Dr. Charu Sharma, who is working as an Associate Professor at the UiT, The Arctic University of Norway (Tromso campus). She focused on DER control use cases, Interoperability categories and cross cutting issues, benefits of interoperability during her lecture. The queries of the students were also answered in an effective manner by the Experts. Approximately 101 students attended the lecture with great enthusiasm on the topic.

The Session ended with vote of thanks by Dr. Shakuntla Boora, Coordinator Electrical Engineering Department. The organising team also thanked Hon'ble Vice Chancellor Prof. S. K. Tomar, Prof. Pradeep Dimri, Prof. Anju Gupta and Dr. Shilpa Munjal for their support and guidance. The session was well coordinated by Dr. Rajeev Saha, Dr. Mamta Kathuria and Dr. Sonam Khera.



J.C. BOSE UNIVERSITY OF SCIENCE & TECHNOLOGY, YMCA, FARIDABAD  
A Haryana State Govt. University  
(Established by Haryana State Legislative Act. No. 21 of 2009  
& Recognized by UGC Act 1956 u/s 22 to Confer Degrees)  
Accredited 'A+' Grade by NAAC



## EXPERT LECTURE

on

“Impact on Bulk Power System Operation  
due to High Penetrated DERs at DN”

and

“Interoperability a key for TSO-DSO Interaction”



**International Affairs Cell**

in coordination with

**Department of Electronics and Communication Engineering  
& Department of Electrical Engineering**



**Prof. Sushil Kumar Tomar**  
Vice Chancellor  
JCBUST, YMCA, Faridabad  
(Haryana)



**Dr. Pawan Sharma**  
Associate Professor  
UiT, (Narvik Campus) Norway



**Dr. Charu Sharma**  
Associate Professor  
UiT, (Tromso Campus) Norway



### Convener

Dr. Shilpa Sethi

### Co-Conveners

Dr. Rajeev Saha  
Dr. Mamta Kathuria  
Dr. Shakuntla Boora  
Dr. Sonam Khera

**Platform : Google Meet**

### Meeting Id:

<http://meet.google.com/pnc-pgbj-wip>

**Date: 16.08.2023**

### Passcode:

**149 238 468#**

**Time: 2:30pm(IST)**





# J.C. BOSE UNIVERSITY OF SCIENCE & TECHNOLOGY, YMCA, FARIDABAD

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## Expert Lecture

on

**“Impact on Bulk Power System Operation due to High penetrated DERs at DN” &  
“Interoperability a key for TSO-DSO Interaction”**

*Organized by*  
International Affairs Cell  
*in coordination with*  
ECE and EL department

The screenshot shows a Zoom meeting in progress. The main window displays a presentation slide with four graphs comparing voltage profiles of European LV test systems. The graphs are arranged in a 2x2 grid. The top-left graph shows voltage profiles for a system without PV. The top-right graph shows voltage profiles for a system with PV. The bottom-left graph shows voltage profiles for a system without PV. The bottom-right graph shows voltage profiles for a system with PV. The graphs are labeled (a) through (d). The title of the slide is "Voltage profile of European LV test system without PV and with PV penetration".

Participants listed on the right side of the screen:

- charu sharma
- Shakuntla Boora
- Sonam Kherra
- Khushi Gupta
- ASHU GOEL
- Khushi Antil 8032
- 91 others
- ia ia

At the bottom of the screen, the time is 2:47 PM and the meeting title is "UiT and JCBOSE UST expert lecture".



charu sharma (Presenting)

# INTEROPERABILITY

A key to TSO-DSO INTERACTION

Utkarsh

pawan sharma

BHAVIKA GOYAL

BHAWANSH SINGH

Khushi Gupta

ASHU GOEL

charu sharma

Sonam Khera

91 others

ia ia

3:09 PM | UIT and JCBOSE UST expert lecture

charu sharma (Presenting)

Figure 2: SGAM Layers

pawan sharma

charu sharma

BHAVIKA GOYAL

20001008065 V...

Sonam Khera

ASHU GOEL

Khushi Gupta

78 others

ia ia

3:23 PM | UIT and JCBOSE UST expert lecture

charu sharma (Presenting)

### INTEROPERABILITY LAYERED CATEGORIES BY GRIDWISE ARCHITECTURE COUNCIL

Interoperability Categories		Cross-cutting Issues									
Organizational	8: Economic/Regulatory Policy	Shared Meaning of Content	Resource Identification	Time Synchronisation	Security & Privacy	Logging & Auditing	Transaction & State Mgmt	System Preservation	Quality of Service	Discovery & Configuration	System Evolution & Scalability
	7: Business Objectives										
	6: Business Procedures										
Informational	5: Business Context										
	4: Semantic Understanding										
Technical	3: Syntactic Interoperability										
	2: Network Interoperability										
	1: Basic Connectivity										

3:34 PM | UiT and JCBOSE UST expert lecture

Chhavi Rohilla (Presenting)

### Expert Lecture-'Impact on Bulk Power'

### Query Session

3:58 PM | UiT and JCBOSE UST expert lecture

In-call messages

Let everyone send messages

Messages can only be seen by people in the call and are deleted when the call ends

PAVITRA KAUL 3:56PM  
Which countries you can say are doing an exemplary job Or have pulled this system off well. And what are the practical implications of using this system in India, why is it not widely used here?

MANVI MANV 3:56PM  
What technical challenges can arise in managing the reverse power flow and how do these challenges impact grid overall stability?

ANSHIKA ANSHIK 3:57PM  
How can DERs be used to improve the efficiency and sustainability of the bulk power system?

Send a message



Chhavi Rohilla (Presenting)

**Expert Lecture- 'Co-conveners'**

**Dr. Rajeev Saha**  
*Dy. Director*

**Dr. Mamta Kathuria**  
*Coordinator, IAC*

**Dr. Shakuntla Boora**  
*Coordinator, EI Department*

**Dr. Sonam Khera**  
*Coordinator, ECE Department*

pawan sharma

charu sharma

PAVITRA KAUL

Sonam Khattar

Shakuntla Boora

ASHU GOEL

Khushi Gupta

58 others

ia ia

4:18 PM | UiT and JCBOSE UST expert lecture

pawan sharma

charu sharma

PAVITRA KAUL

Sonam Khattar

Shakuntla Boora

ASHU GOEL

Khushi Gupta

Chhavi Rohilla

Chhavi Rohilla

53 others

ia ia

4:19 PM | UiT and JCBOSE UST expert lecture