



**MANIPAL UNIVERSITY
JAIPUR**

MUJ/Q&C/22/F/1.01



**MANIPAL UNIVERSITY
JAIPUR**

FACULTY OF ENGINEERING

SCHOOL OF CIVIL & CHEMICAL ENGINEERING

DEPARTMENT OF CHEMICAL ENGINEERING

Lecture on “Solar Thermal Technologies and Applications”

**Type of Event: Technical Lecture (also an MoU activity with
National Institute of Solar Energy)**

Date of Event: 29th Dec 2022, 11am-12noon



Content of Report

1. Introduction of the Event
2. Objective of the Event
3. Beneficiaries of the Event
4. Details of the Guests
5. Brief Description of the event
6. Geo-tagged Photographs
7. Schedule of the event
8. Attendance of the Event



1. Introduction of the Event

The Department of Chemical Engineering and Indian Institute of Chemical Engineers (IChE) Student Chapter, Manipal University Jaipur organized a Webinar entitled “Solar Thermal Technologies and Application” on December 29, 2022 (11:00 a.m. – 12:00 noon).

Mr. Vikrant Yadav (Assistant Director (Technical) at National Institute of Solar Energy, India) was the speaker at the event.

2. Objective of the Event

- To shed light on the current topic of Solar Thermal Technologies.
- To facilitate fruitful interactions between NISE staff and MUJ faculty.
- Activity as a part of an existing MoU between NISE and MUJ.

3. Beneficiaries of the Event

B.Tech. Chemical Engineering students of Second, Third and Final year, PhD scholars, and faculty.

4. Details of the Speaker

Mr. Vikrant Yadav (Assistant Director (Technical) at National Institute of Solar Energy, India) will be the speaker at the event. Mr. Vikrant Yadav has received B.Tech. in Mechanical Engineering from UIET Kurukshetra, followed by M.Tech. in Thermal Engineering from NIT Kurukshetra. He works in the field of Solar Thermal Technologies and has publications on Solar Cooker design and thermal performance evaluation. He also has a patent on Three-Wheeler Anti-Toppling Vehicle.

5. Brief Description of the event

It has been conducted from December 29, 2022 (11:00 a.m. – 12:00 noon) on MS Teams.



MANIPAL UNIVERSITY JAIPUR

Meeting Invitation Email

Dr. Harsh Pandey [MU - Jaipur]

From: Dr. Harsh Pandey [MU - Jaipur]
Sent: 22 December 2022 11:38
To: vikrant.yadav@nise.res.in; vikrant.nise@gmail.com
Cc: Dr. Anees Ahmed Yunus Khan [MU - Jaipur]
Subject: FW: Invitation of Talk from Manipal University Jaipur

Dear Sir,

We have scheduled it for **Thu 29th Dec, 11am.**

I have created a Team on MS Teams platform for the Webinar and sent you the link of the scheduled meeting to join it as a guest. Please sign up for MS Teams on either of the two email IDs (nise.res.in or using gmail ID).

The link for the meeting is as below:

<https://teams.microsoft.com/l/meetup-join/19%3aw3gFe4QmLzG7nGp842C5Ie83tnEfGBdpL08Fdis6hug1%40thread.tacv2/1671689200793?context=%7b%22Tid%22%3a%22a1608842-8390-4bfb-90af-89ac3ab30761%22%2c%22Oid%22%3a%22e25497a3-55de-4166-851c-9eefac148cb1%22%7d>

Thanks and best regards,

Dr. Harsh Pandey.

From: Vikrant Yadav <vikrant.yadav@nise.res.in>
Sent: 21 December 2022 19:18
To: Dr. Harsh Pandey [MU - Jaipur] <harsh.pandey@jaipur.manipal.edu>
Cc: vikrant.nise@gmail.com
Subject: Re: Invitation of Talk from Manipal University Jaipur

Caution: This email originated outside of Manipal Group. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Dear Sir

Thu 29th Dec- anytime between 10-12 Am will be ok.

Thanks and Regards

विक्रंत यादव/Vikrant Yadav
सहायक निदेशक (संज्ञानिक)/Assistant Director (Technical)
राष्ट्रीय सौर ऊर्जा संस्थान/National Institute of Solar Energy

1



(नवीन और नवीकरणीय ऊर्जा मंत्रालय, भारत सरकार का स्वायत्त संस्थान)
(An Autonomous Institute of MNRE, Government of India)
दूरभाष/Contact: 0124-2853122/+91 9996559252

On 21/12/2022 15:14, Dr. Harsh Pandey [MU - Jaipur] wrote:

Dear Sir,

A gentle reminder. Thanks.

From: Dr. Harsh Pandey [MU - Jaipur]
Sent: 20 December 2022 11:52
To: Vikrant Yadav <vikrant.yadav@nise.res.in>
Cc: Dr. Anees Ahmed Yunus Khan [MU - Jaipur] <anees.khan@jaipur.manipal.edu>
Subject: RE: Invitation of Talk from Manipal University Jaipur

Dear Sir,

Thanks for your reply.

If you are comfortable, we can arrange in Online Mode (MS Teams) on **Thu 29th Dec.**

Please let us know a **convenient time slot** for the same.

Topic, as mentioned by you "Solar Thermal Technologies and Application". Is this fine?

Kind regards,

Dr. Harsh Pandey.



MANIPAL UNIVERSITY JAIPUR

From: Vikrant Yadav <vikrant.yadav@nise.res.in>
Sent: 19 December 2022 12:56
To: Dr. Harsh Pandey [MU - Jaipur] <harsh.pandey@jaipur.manipal.edu>
Subject: Re: Invitation of Talk from Manipal University Jaipur

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Dear Sir

Thank you for the invitation

I shall be able to take a 40-50 minutes talk on 29/30 December 2022 on topic related to solar thermal technologies and its application.

Thanks and Regards

विक्रान्त यादव/Vikrant Yadav
सहायक निदेशक (तकनीकी)/Assistant Director (Technical)
राष्ट्रीय सौर ऊर्जा संस्थान/National Institute of Solar Energy
(नवीन और नवीकरणीय ऊर्जा मंत्रालय, भारत सरकार का स्वायत्त संस्थान)
(An Autonomous Institute of MNRE, Government of India)

दूरभाष/Contact: 0124-2853122/+91 9996559252

On 16/12/2022 07:05, Dr. Harsh Pandey [MU - Jaipur] wrote:

Dear Sir,

Greetings from Manipal University Jaipur!

As per your earlier discussion with Dr. Abhishek Sharma and our HoD Dr. Anees Khan, we would like to formally invite you for a research talk (in Online mode: MS Teams) tentatively in the remainder of December month.

Please convey your acceptance, and availability by return email.

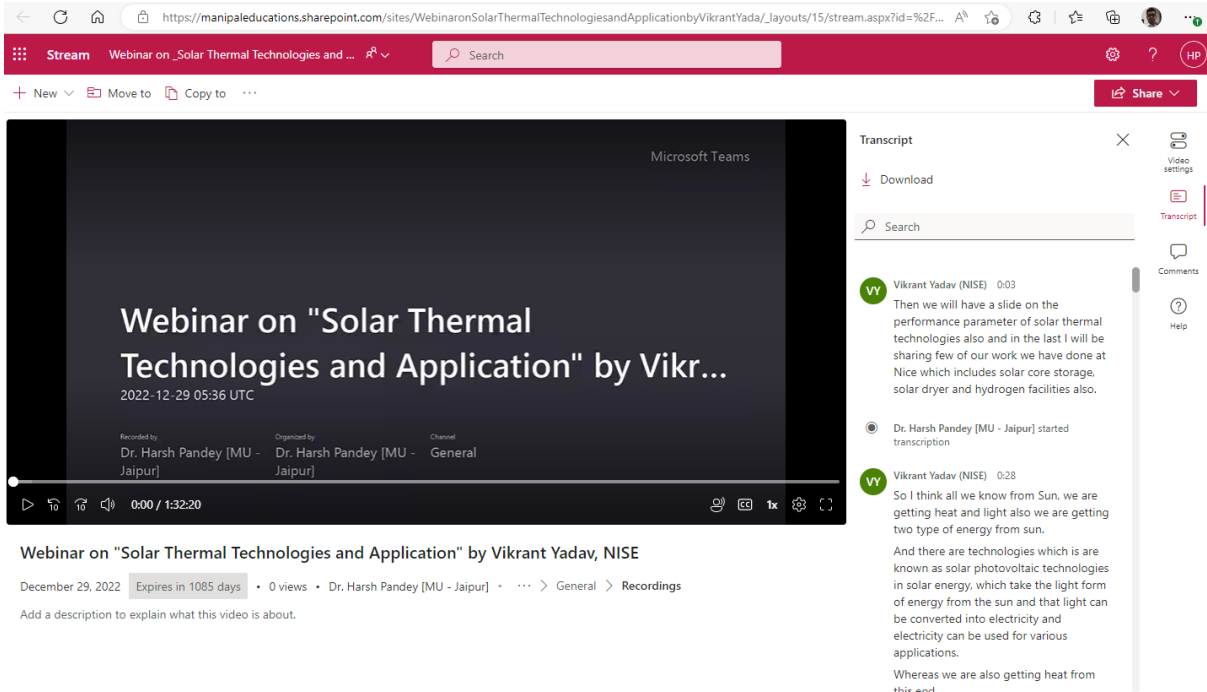
3

We look forward to your talk on Solar Energy!

Thanks, and warm regards,

Dr. Harsh Pandey.

6. Photographs



Microsoft Teams

Webinar on "Solar Thermal Technologies and Application" by Vikr...

2022-12-29 05:36 UTC

Recorded by: Dr. Harsh Pandey [MU - Jaipur] | Organized by: Dr. Harsh Pandey [MU - Jaipur] | Channel: General

0:00 / 1:32:20

Webinar on "Solar Thermal Technologies and Application" by Vikrant Yadav, NISE

December 29, 2022 | Expires in 1085 days | 0 views | Dr. Harsh Pandey [MU - Jaipur] | ... > General > Recordings

Add a description to explain what this video is about.

Transcript

Download

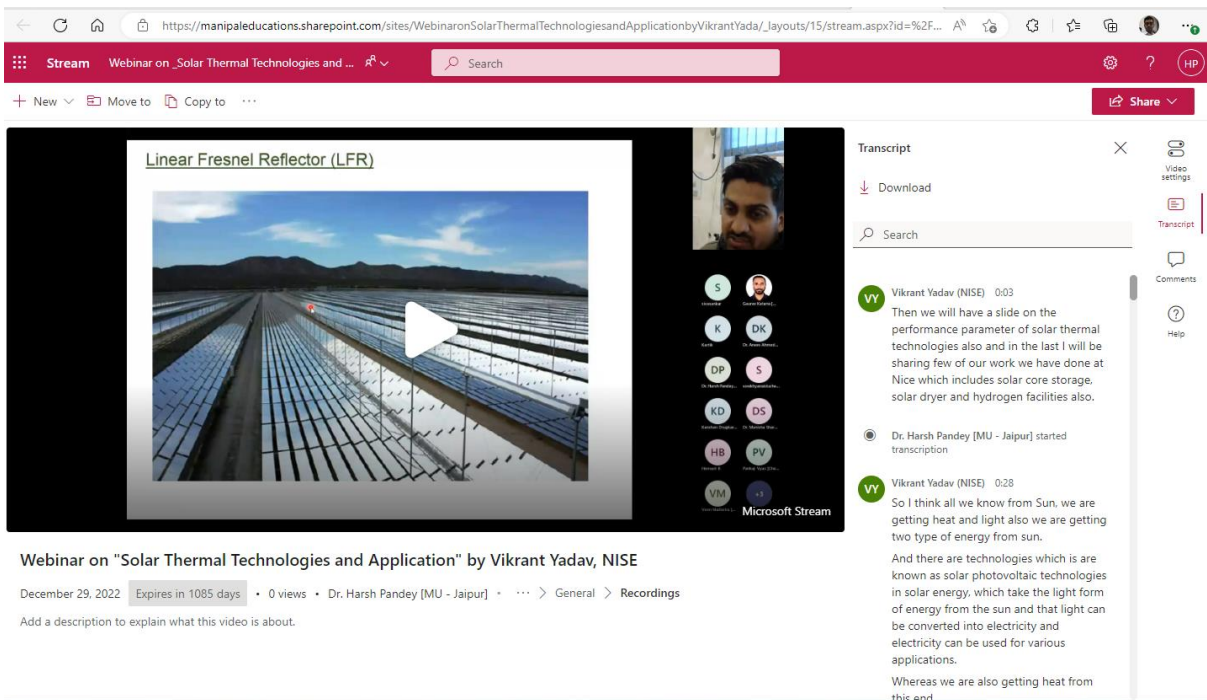
Search

Vikrant Yadav (NISE) 0:03
Then we will have a slide on the performance parameter of solar thermal technologies also and in the last I will be sharing few of our work we have done at NICE which includes solar core storage, solar dryer and hydrogen facilities also.

Dr. Harsh Pandey [MU - Jaipur] started transcription

Vikrant Yadav (NISE) 0:28
So I think all we know from Sun, we are getting heat and light also we are getting two type of energy from sun.
And there are technologies which is are known as solar photovoltaic technologies in solar energy, which take the light form of energy from the sun and that light can be converted into electricity and electricity can be used for various applications.
Whereas we are also getting heat from this end

MS Teams Lecture Snapshots showing the Lecture delivered by Mr. Vikrant Yadav



Microsoft Stream

Linear Fresnel Reflector (LFR)

Webinar on "Solar Thermal Technologies and Application" by Vikrant Yadav, NISE

December 29, 2022 | Expires in 1085 days | 0 views | Dr. Harsh Pandey [MU - Jaipur] | ... > General > Recordings

Add a description to explain what this video is about.

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Vikrant Yadav (NISE) 0:03
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Dr. Harsh Pandey [MU - Jaipur] started transcription

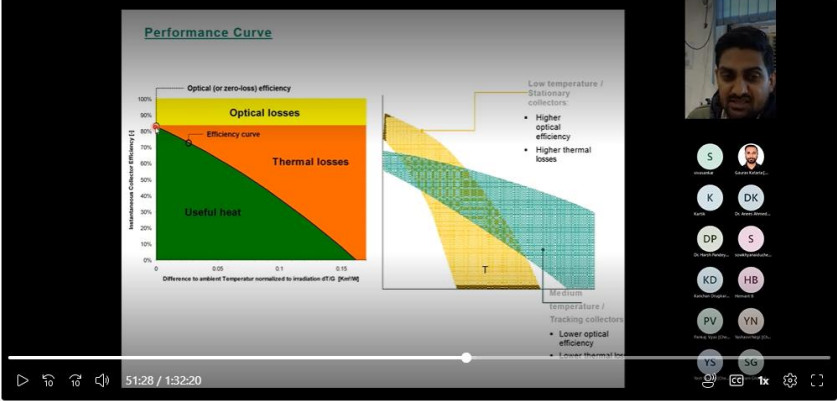
Vikrant Yadav (NISE) 0:28
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Whereas we are also getting heat from this end

MS Teams Lecture Snapshots showing the Lecture delivered by Mr. Vikrant Yadav

https://manipaleducations.sharepoint.com/sites/WebinaronSolarThermalTechnologiesandApplicationbyVikrantYada/_layouts/15/stream.aspx?id=%2F... A

Stream Webinar on _Solar Thermal Technologies and ... Search

+ New Move to Copy to Share



Transcript

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0 in this case here.

So even at we are working at Geo Delta T, we cannot have higher 100% efficiency because some of the energy will be loaded into optical losses.

Optical losses, that is the losses because we don't have 100% reflectivity of the materials, we don't have 100% absorptivity of the. So some of the losses will always be there. So say like 20% are loans and 20 per losses. So we start from here.

And as we increase the. Temperatures.

The Delta team will be increasing the heat losses from the receiver will be increasing, so the heat losses are.

Going through this parabolic form so. So as we increase the temperatures, the efficiency of the collector decreases. So. So looking at higher lower temperatures get higher efficiency, working at higher temperatures give lower efficiency.

Webinar on "Solar Thermal Technologies and Application" by Vikrant Yadav, NISE

78/100

December 29, 2022 Expires in 1085 days • 0 views • Dr. Harsh Pandey [MU - Jaipur] • General > Recordings

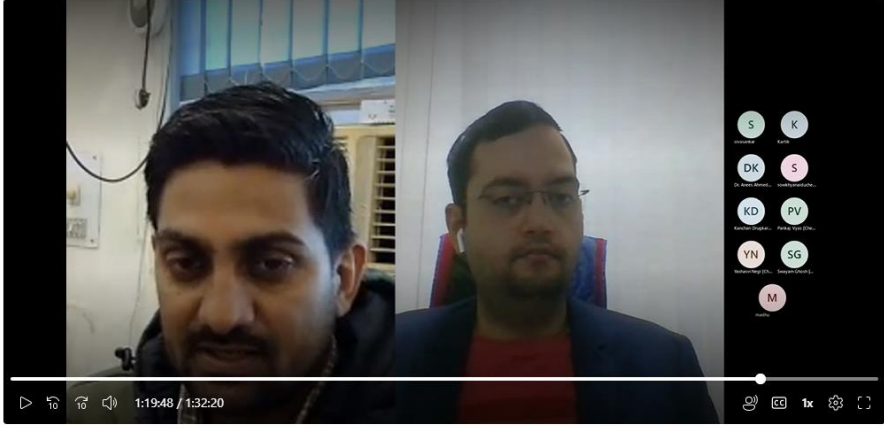
Add a description to explain what this video is about.

MS Teams Lecture Snapshots showing the Lecture delivered by Mr. Vikrant Yadav

https://manipaleducations.sharepoint.com/sites/WebinaronSolarThermalTechnologiesandApplicationbyVikrantYada/_layouts/15/stream.aspx?id=%2F... A

Stream Webinar on _Solar Thermal Technologies and ... Search

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Transcript

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Vikrant Yadav (NISE) 1:19:32
BBC One and the air is higher.
So we designed actually we while we were working actually this was one of the challenges we were facing. So so the like the designing of the the appropriate flow levels actually was very critical in this case.

madhu 1:19:35
OK, OK.

Vikrant Yadav (NISE) 1:19:49
So so that the the.

madhu 1:19:50
Nice. We countries are very good work.

Vikrant Yadav (NISE) 1:19:52
Yes, Sir.

madhu 1:19:52
Thank you for contacting us. Thank you.

Webinar on "Solar Thermal Technologies and Application" by Vikrant Yadav, NISE

78/100

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Add a description to explain what this video is about.

MS Teams Lecture Snapshots showing the Lecture delivered by Mr. Vikrant Yadav



7. Schedule of the event

It has been conducted from December 29, 2022 (11:00 a.m. – 12:00 noon) on MS Teams.

MS Teams Meeting Link: <https://teams.microsoft.com/l/meetup-join/19%3aw3gFe4QmLzG7nGp842C5Ilg83tnEfGBdpL08Fdis6hug1%40thread.tacv2/1671689200793?context=%7b%22Tid%22%3a%22a1608842-8390-4bf8-90af-89ae3ab30761%22%2c%22Oid%22%3a%22e25497a3-55de-4166-851c-9eefac148cb1%22%7d>

8. Attendance of the Event: 22 Participants & Speaker

Meeting
Summary
Total
Number of
Participants 23
Meeting
Title General
Meeting
12/29/2022,
Start Time 10:59:14 AM
Meeting End
12/29/2022,
Time 12:38:49 PM
88ea04de-
0567-472e-
96ef-
681b0630f60
Meeting Id 4

Full Name	Join Time	Leave Time	Duration	Email	Role	Participant ID (UPN)
Dr. Harsh Pandey [MU - Jaipur]	12/29/2022, 10:59:14 AM	12/29/2022, 12:35:23 PM	1h 36m	harsh.pandey@jaipur.manipal.edu	Organizer	harsh.pandey@jaipur.manipal.edu
Dr. Anees Ahmed Yunus Khan [MUJ]	12/29/2022, 10:59:25 AM	12/29/2022, 12:35:21 PM	1h 35m	muj0860@muj.manipal.edu	Attendee	muj0860@muj.manipal.edu
Vikrant Yadav (NISE)	12/29/2022, 10:59:27 AM	12/29/2022, 12:35:18 PM	1h 35m		Presenter	
Kanchan Drugkar [PhD - 2020]	12/29/2022, 10:59:27 AM	12/29/2022, 12:35:29 PM	1h 36m	kanchan.202303004@muj.manipal.edu	Attendee	kanchan.202303004_muj.manipal.edu#EXT#@manipal.educations.onmicrosoft.com



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		12/29/2022,	12:29:28 AM	12/29/2022,	12:35:26 PM	1h 35m		Att	
sivasankar								en	
								de	
								e	
								Att	
Gaurav Kataria [MU - Jaipur]		12/29/2022,	10:59:45 AM	12/29/2022,	12:22:46 PM	1h 23m	gaurav.kataria@jaipur.manipal.edu	en	gaurav.kataria@jaipur.manipal.edu
Rahul Sharma [Chemical - 2020]		12/29/2022,	11:00:32 AM	12/29/2022,	11:28:05 AM	32s	rahul.209101011@muj.manipal.edu	en	rahul.209101011_muj.manipal.edu#EXT#@manipaleducations.onmicrosoft.com
								Att	
								en	
								de	
Kartik		12/29/2022,	11:01:47 AM	12/29/2022,	12:35:30 PM	33m	kartik.iyer@sriect.in	en	kartik.iyer@sriect.in
								Att	
								en	
								de	
sowkhyanaiduchem		12/29/2022,	11:01:59 AM	12/29/2022,	12:35:24 PM	33m	sowkhyanaiduchem@gmail.com	en	sowkhyanaiduchem@gmail.com#EXT#@manipaleducations.onmicrosoft.com
								Att	
								en	
Nandana Chakinala [MU - Jaipur]		12/29/2022,	11:03:00 AM	12/29/2022,	11:23:19 AM	19s	nandana.chakinala@jaipur.manipal.edu	en	nandana.chakinala@jaipur.manipal.edu
								Att	
								en	
Dr. Manisha Sharma [MU - Jaipur]		12/29/2022,	11:07:30 AM	12/29/2022,	11:53:11 AM	41s	manisha.sharma@jaipur.manipal.edu	en	manisha.sharma@jaipur.manipal.edu
								Att	
								en	
Ruqaiya Hitawala [Chemical - 2021]		12/29/2022,	11:07:40 AM	12/29/2022,	11:28:38 AM	58s	ruqaiya.219101005@muj.manipal.edu	en	ruqaiya.219101005@muj.manipal.edu
								Att	
								en	
								de	
Hemant B Chirayu Agrawal [Chemical - 2021]		12/29/2022,	11:09:58 AM	12/29/2022,	12:20:02 PM	10m	chirayu.219101007@muj.manipal.edu	en	chirayu.219101007_muj.manipal.edu#EXT#@manipaleducations.onmicrosoft.com
								Att	
								en	
								de	
Pankaj Vyas [Chemical - 2021]		12/29/2022,	11:12:10 AM	12/29/2022,	12:27:54 PM	15m	pankaj.219101008@muj.manipal.edu	en	pankaj.219101008@muj.manipal.edu
								Att	
								en	
Yashasvi Negi [Chemical - 2020]		12/29/2022,	11:12:49 AM	12/29/2022,	11:15:20 AM	31s	yashasvi.209101005@muj.manipal.edu	en	yashasvi.209101005_muj.manipal.edu#EXT#@manipaleducations.onmicrosoft.com



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Viren Malhotra	12/29/2022,	12/29/2022,	11:37:40	24	m	viren.209402001@mu.jaipur.edu	Att	viren.209402001_mu.jaipur.edu#EXT#@manipal.edu
[Mechanical - 2020]	11:13:06 AM	11:13:06 AM	7 AM	40	s	anipal.edu	de	pal.edu#EXT#@manipal.edu
Yashasvi Negi	12/29/2022,	12/29/2022,	12:35:40	20	1h	yashasvi.209101005@mu.jaipur.edu	Att	yashasvi.209101005_mu.jaipur.edu
[Chemical - 2020]	11:15:10 AM	11:15:10 AM	3 PM	20	m	u	de	yashasvi.209101005_mu.jaipur.edu
Gunjan Kumar	12/29/2022,	12/29/2022,	11:25:28	10	m		Att	
	11:15:19 AM	11:15:19 AM	8 AM	9s	9s		de	
Yash Saxena	12/29/2022,	12/29/2022,	12:12:22	58	m	yash.219101004@mu.jaipur.edu	Att	yash.219101004_mu.jaipur.edu#EXT#@manipal.edu
[Chemical - 2021]	11:16:23 AM	11:16:23 AM	2 PM	58	s	anipal.edu	de	pal.edu#EXT#@manipal.edu
Swayam Ghosh	12/29/2022,	12/29/2022,	11:25:05	13	m	swayam.219101002@mu.jaipur.edu	Att	swayam.219101002_mu.jaipur.edu
[Chemical - 2021]	11:21:51 AM	11:21:51 AM	5 AM	13	s	u	de	swayam.219101002_mu.jaipur.edu
Swayam Ghosh	12/29/2022,	12/29/2022,	12:38:49	11	1h	swayam.219101002@mu.jaipur.edu	Att	swayam.219101002_mu.jaipur.edu
[Chemical - 2021]	11:27:40 AM	11:27:40 AM	9 PM	11	m	u	de	swayam.219101002_mu.jaipur.edu
Kushal Atul Mavdikar	12/29/2022,	12/29/2022,	11:40:50	23	m	kushal.209101012@mu.jaipur.edu	Att	kushal.209101012_mu.jaipur.edu
[Chemical - 2020]	11:39:26 AM	11:39:26 AM	0 AM	23	s	manipal.edu	de	nipal.edu
madhu	12/29/2022,	12/29/2022,	12:33:24	15	m		Att	
	12:15:09 PM	12:15:09 PM	4 PM	15	s		de	

29th December 2022

Seal and Signature of Head with date