

A  
REPORT  
On  
The Workshop on  
**“Demonstration of various Virtual Labs”**  
(Organized by the IIC & IQAC in association with IIT Kanpur)



The poster is for a "One Day Workshop on Virtual Labs" held on 25th July 2024 from 02:00 PM onwards. It features the logos of RITE, Virtual Labs, and IIT Kanpur. The event is organized by the IIC & IQAC in association with IIT Kanpur. The poster lists five participants: Mr. Vinay Kumar Tripathi (Guest Speaker, Senior Project Associate, Virtual Labs, IIT Kanpur), Mrs. Suman Tripathi (Guest Speaker, Senior Project Associate, Virtual Labs, IIT Kanpur), Dr. Subash Ranjan Kabat (Principal, RITE), Dr. Chandrabhanu Malla (Dean-Academics, RITE), and Prof. Priyadarshinee Das (Nodal Co-ordinator (VL), RITE). The venue is an online platform, and the date is 25/07/2024.

**RADHAKRISHNA INSTITUTE OF TECHNOLOGY AND ENGINEERING**  
IDCO PLOT NO-1, IDCO Industrial Estate, Barunei, Khordha-752057

**Virtual Labs**  
An MoE Govt of India Initiative

**“One Day Workshop on Virtual Labs”**  
25<sup>th</sup> July 2024 | 02:00 PM Onwards

**GUEST SPEAKER**  
**Mr. Vinay Kumar Tripathi**  
Senior Project Associate  
Virtual Labs, IIT Kanpur

**GUEST SPEAKER**  
**Mrs. Suman Tripathi**  
Senior Project Associate  
Virtual Labs, IIT Kanpur

**Dr. Subash Ranjan Kabat**  
Principal, RITE

**Dr. Chandrabhanu Malla**  
Dean-Academics, RITE

**Prof. Priyadarshinee Das**  
Nodal Co-ordinator (VL), RITE

**Venue:** Online Platform  
**Date:** 25/07/2024  
**Time:** 02:00 PM Onwards

***Date: 25-07-2024***

***Prepared by:***  
**Prof. Priyadarshinee Das** (Department Electrical Engineering)

**A Brief Description of one day Workshop on “Demonstration of various Virtual Labs”**

**Date: 25-07-2024**

**Venue: Seminar Hall, RITE**

**Organized by: IIC & IQAC in association with IIT Kanpur**

**Keynote Speaker: Mr. Vinay Kumar Tripathi, Senior Project Associate, Virtual Labs, IIT Kanpur & Mrs. Suman Tripathi, Senior Project Associate, Virtual Labs, IIT Kanpur**

**Coordinator: Prof. Priyadarshinee Das, Nodal Co-ordinator (VL), RITE**

**Introduction:**

The Institution's Innovation Council (IIC) and Internal Quality Assurance Cell (IQAC) of Radhakrishna Institute of Technology and Engineering (RITE), in collaboration with IIT Kanpur, organized an online workshop on "Demonstration of Various Virtual Labs" on 25th July 2024 at 2:00 PM. The primary objective of the workshop was to enhance awareness and adoption of virtual laboratories among faculty and students for a more effective and inclusive learning environment. It was hosted by eminent speaker of IIT Kanpur. The objective of the workshop was to discuss the creation and enhancement of Virtual Labs, facilitating improved educational outcomes and hands-on learning experiences for students. The workshop is inaugurated by Dr. Subash Ranjan Kabat, Principal RITE, Dr. ChandraBhanu Malla, Dean Academics and welcomed by Prof. Priyadarshinee Das HOD of Electrical Engineering Department & Nodal Coordinator of Virtual Lab.

Virtual Labs is an initiative of the Ministry of Human Resource and Development, Govt. of India under the National Mission on Education through Information and Communications Technology (NME-ICT). This initiative provides an opportunity for all students to use virtual labs free of cost. The aim to provide high quality remote laboratory access in Science and Engineering disciplines for students and teachers of the country and is applicable to undergraduate (B.Sc., B.Tech, B.E.) and post-graduate (M.Sc., M.Tech, M.E.) students including Physical Sciences, Biological Sciences, Chemical Sciences, Computer Science and Electronics and Mechanical Engineering. Virtual Labs are being developed by consortia of 12 institutes which include Amrita Vishwa Vidyapeetham, IIT Delhi, IIT Bombay, IIT

Kanpur, IIT Kharagpur, IIT Madras, IIT Roorkee, IIT Guwahati, IIT Hyderabad, Dayalbagh Educational Institute, NIT Surathkal and College of Engineering, Pune.

**Main website:** <https://www.vlab.co.in>

## **Objective of the Workshop:**

The workshop aimed to:

- Introduce the concept and utility of Virtual Labs developed by IITs.
- Demonstrate hands-on usage of the Virtual Labs platform.
- Promote the integration of virtual experimentation in regular academic curricula.
- Provide training and support for faculty and students in using digital laboratory resources.

## **Resource Persons:**

The session was facilitated by two distinguished experts from IIT Kanpur's Virtual Labs team:

Mr. Vinay Kumar Tripathi, Senior Project Associate, Virtual Labs, IIT Kanpur

Mrs. Suman Tripathi, Senior Project Associate, Virtual Labs, IIT Kanpur

Both resource persons brought their extensive experience and in-depth knowledge of the Virtual Labs project, which is a flagship initiative under the National Mission on Education through ICT (NMEICT), Ministry of Education, Government of India.

## **Discussion points:**

- Include Virtual Labs in Course Syllabus.
- Develop a repository of lab exercises mapped to specific courses.
- Incorporating Virtual Experiments in Lab Sessions.
- Develop project-based assignments where students must apply concepts learned through virtual labs.
- Lab Development & Mapping of Lab Courses.
- Include virtual labs in their daily classroom.
- Given idea about roles and responsibility of the Nodal Coordinator.

## **Program Coordination:**

The program was coordinated by Prof. Priyadarshinee Das, Nodal Coordinator (Virtual Labs), RITE. She welcomed the speakers and participants, and delivered the opening remarks highlighting the significance of virtual labs in modern engineering and science education, especially in a post-pandemic digital-first learning environment.

## **Session Highlights:**

The session included the following key segments:

### **Introduction to Virtual Labs**

- Historical background and development under NMEICT.
- Vision and mission of the Virtual Labs initiative.
- Types of laboratories and subjects available.

### **Live Demonstration**

- Step-by-step navigation through the Virtual Labs portal.
- Demonstration of selected experiments from domains like Physics, Chemistry, Computer Science, and Electronics.
- Explanation of experiment procedures, simulations, and result interpretations.
- Real-time Q&A during the demonstration for interactive learning.

### **Pedagogical Integration**

- Use cases for integrating virtual labs in B.Tech and MCA curricula.
- Benefits in remote and blended learning settings.
- Use of virtual labs for assessments and assignments.

### **Participant Interaction**

- Faculty and students raised questions about implementation, student access, and evaluation methods.
- Resource persons shared best practices and troubleshooting tips.

## **Participation:**

The workshop witnessed enthusiastic participation from:

- 20 faculty members from various departments of RITE.
- 65 students from B.Tech and MCA programs.

Participants appreciated the initiative and shared positive feedback regarding the interactive

and informative nature of the session.

## **Outcome of the Workshop:**

The workshop successfully achieved its objectives by:

- Enhancing awareness of digital lab resources.
- Equipping faculty and students with practical knowledge on using Virtual Labs.
- Encouraging institutional adoption of virtual experimentation as a regular academic practice.

Faculty members expressed interest in integrating Virtual Labs into their coursework, while students found it an accessible and engaging way to conduct experiments remotely.



**Workshop Notice**

Radhakrishna Institute of Technology & Engineering, Bhubaneswar

(BPUT affiliated, AICTE approved & NAAC accredited)



REF. NO. RITE/2024-25/ 027

DATE: 24.07.2024

**NOTICE**

It is hereby informed to all B.Tech, MBA & MCA students that a Workshop on "Virtual Labs" will be organized by our institute in association with Virtual Labs, IIT Kanpur in the online mode on 25<sup>th</sup> July 2024 at 01:45 PM in the Seminar Hall. All students and faculty members are required to attend the above said Workshop without fail.

  
(Dr. S.R. Kabdt)  
PRINCIPAL

Copy to: 1. Management Committee for kind information  
2. Dean Academics/All HoDs/ The Virtual Lab Coordinator/All Notice Boards

## List of Participants



### Attendance Sheet (Faculties)




















**Workshop Title: "Virtual Labs"**

**Institute Name : RADHAKRISHNA INSTITUTE OF TECHNOLOGY AND ENGINEERING**

**Address** : Plot No.1, IDCO Industrial Estate, Barunei, Khordha-752057

**Date & Time** : 25/07/2024 | 2:00 PM to 4:00 PM

**Organizer Name : Prof. Priyadarshini Das**

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and Engineering, Bhubaneswar





### Attendance Sheet (Students)

Workshop Title: "Virtual Labs"


Institute Name : RADHAKRISHNA INSTITUTE OF TECHNOLOGY AND ENGINEERING

Address : Plot No.1, IDCO Industrial Estate, Barunei, Khordha-752057

Date & Time : 25/07/2024 | 2:00 PM to 4:00 PM

Organizer Name : Prof. Priyadarshini Das

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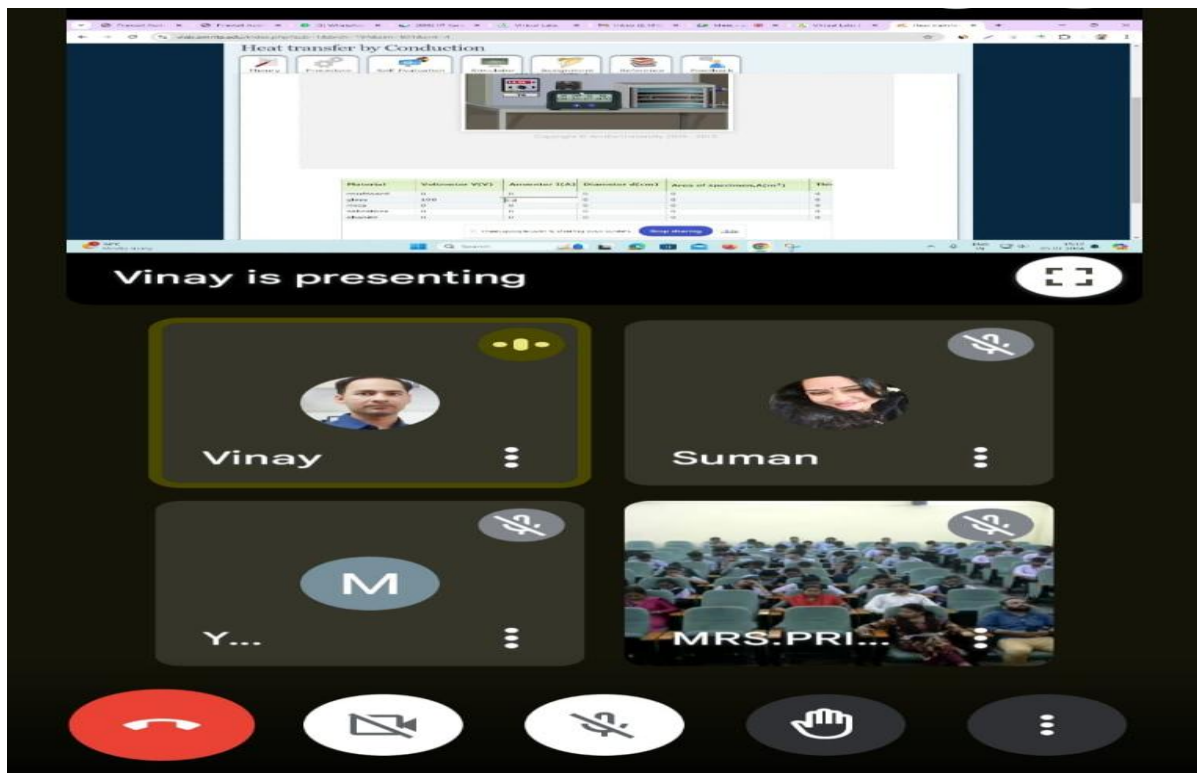
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### Event Photographs







**Virtual Labs Nodal Centers and outreach activities**

**Training & Workshops** National Boot Camp on Virtual Lab Development

**BOOTATHON**  
The first bootathon event was Held in 2019 at Rajkiya Engineering College, Banda in collaboration with IIT Bombay and IIT Kanpur, IIT Delhi and TEQIP III. It was a 7 day event in which AICTE approved colleges from all over the country participated. Students Have developed around 150+ experiments from various disciplines of science and engineering.

1. 03 Experiments from Food Technology are developed by HBTU Kanpur & IET, Bundelkhand University, Jhansi.  
2. 03 Experiments from Pharmaceutical sciences developed by MIET Meerut



**Significant Achievements in eBOOTATHON Series**

01. Increase in Virtual Lab development  
02. Expected development  
03. Increase in Virtual Lab development  
04. Increase in Virtual Lab development

**Growth Graph of Virtual Labs Developed in eBOOTATHON Series**

CSE 10 Virtual Labs, EE 10 Virtual Labs, ECE 10 Virtual Labs, ME 10 Virtual Labs, CIVIL 10 Virtual Labs, Physics 10 Virtual Labs, Chemistry 10 Virtual Labs, Pharmaceuticals 10 Virtual Labs, Biotechnology 10 Virtual Labs, Automobile 10 Virtual Labs, Food Technology 10 Virtual Labs

Suman is presenting

Suman

MRS.PRIYADARS...

You

Vinay

**Roles & Responsibilities of the Nodal Coordinator /VLNCC**

1. The Nodal Coordinator (NC) will be the main interface between the Outreach Team of Virtual Labs IIT Kanpur and the Nodal Centre.
2. He/She will conduct training sessions and orientation programme for students and faculty members in his/her Institute. Must be organized with collaboration with IIT Kanpur.
3. NC may take help from other faculty members and support staff to coordinate training programmes in their respective institutes.
4. He/she is required to work towards making Virtual Labs popular among the students.
5. He/She is required to help in testing, debugging and feedback of Virtual Labs while using them.
6. All Workshop Reports & a monthly progress report regarding Virtual Labs usage by the students must be submitted by the Nodal Coordinator to the IIT Kanpur, duly signed by the Director/Principal of the Institute.
7. The number of lab usages is expected to be greater than 8000 per year.

Suman is presenting

Suman

MRS.PRI...

Y...

Vinay



## **Conclusion & Vote of Thanks**

The session concluded with a vote of thanks by Prof. Priyadarshinee Das, who acknowledged the efforts of the resource persons, organizing team, and all participants. She emphasized the importance of such workshops in empowering the academic community to embrace digital tools for quality education.

The collaboration with IIT Kanpur marked a significant step towards academic innovation and digital transformation at RITE.

## **Key Takeaways:**

- Virtual Labs by IITs offer free, remote access to 100+ lab experiments.
- Live demonstration covered navigation, simulation, and result analysis.
- Platform is easy to use and accessible for both faculty and students.
- Ideal for institutions with limited physical lab resources.
- Supports integration into B.Tech and MCA curricula.
- Enhances conceptual understanding through experiential learning.
- Enables safe, self-paced, and repeatable practice of experiments.
- Interactive session clarified doubts and use-case scenarios.
- Positive feedback from 20 faculty and 65 student participants.
- Encouraged wider adoption of virtual labs in teaching and learning.

The workshop motivated institutions and educators to leverage virtual technologies for better academic outcomes.

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