



**An Initiative of**

**Ministry of Human Resource & Development (MHRD)**

**under the aegis of**

**The National Mission on Education through ICT (NMEICT)**

**National Coordinator: Ranjan Bose, IIT Delhi**

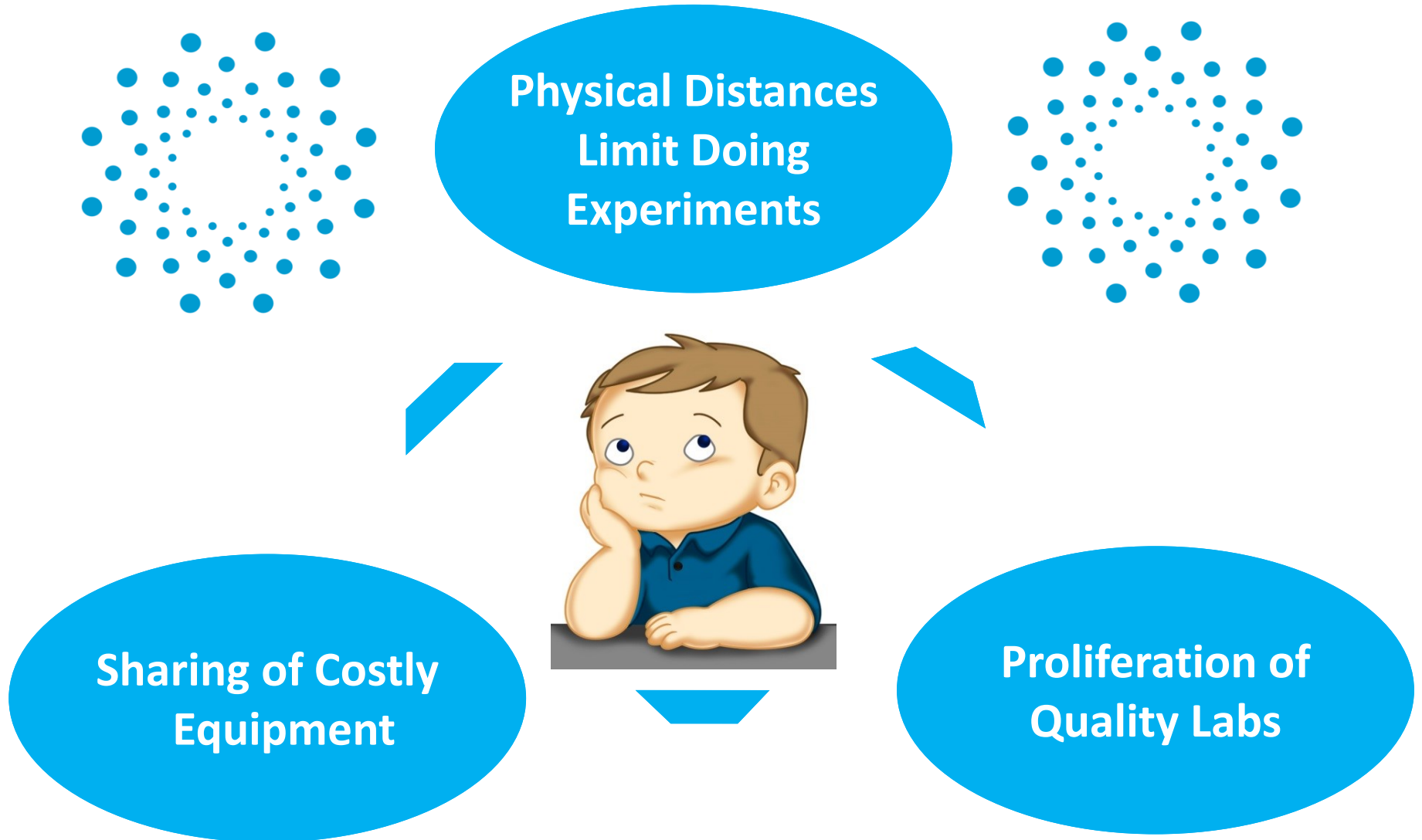


# Salient Features

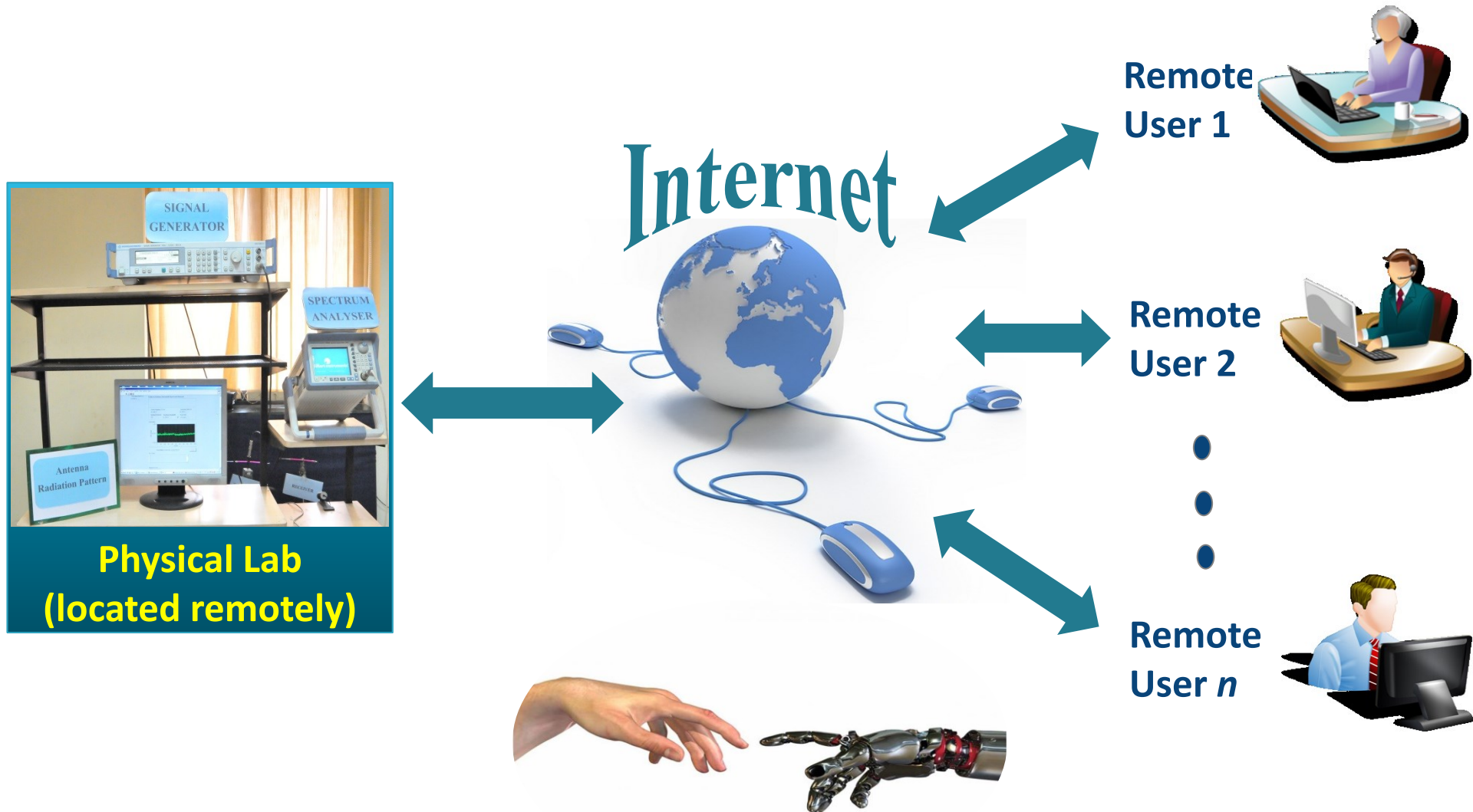
- ✦ Anytime anywhere lab.
- ✦ Virtual Labs are free to use.
- ✦ Accessible through Internet on any PC/Laptop.
- ✦ Surprisingly even on your smartphone/Tablet.
- ✦ Developed in self-learning mode.
- ✦ Innovative experimentations.
- ✦ Over 100 Virtual Labs have already been developed.



# Motivation



# The Basic Idea



# Objectives of the Virtual Lab Project

- To provide **remote-access to labs** in various disciplines of Science and Engineering.



- To cater to **students** at the UG level, PG level as well as to research scholars.



- To enable the students to learn at their **own pace**, and to arouse their **curiosity**.



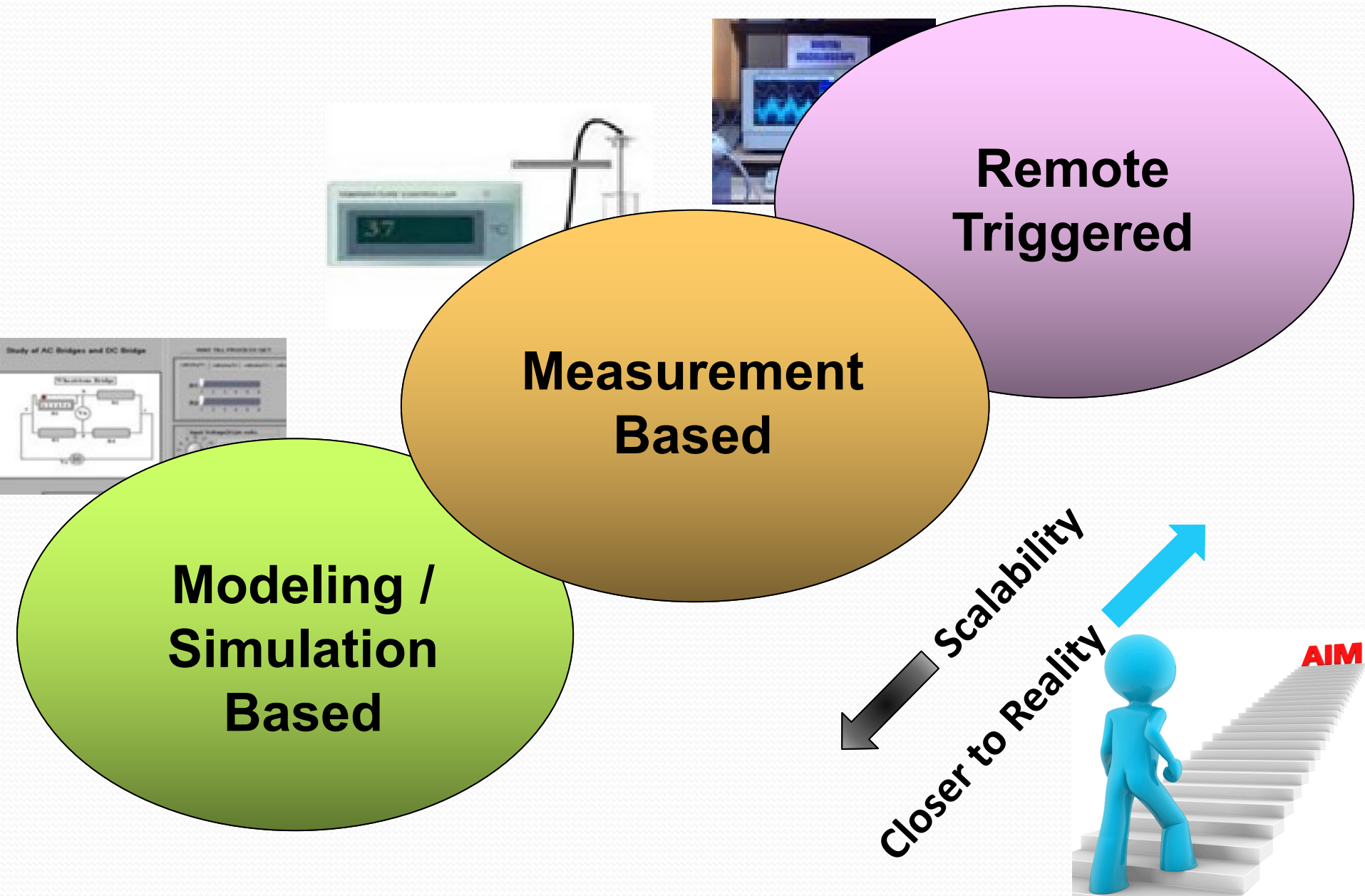
- To provide a complete **Learning Management System** that includes web-resources, video-lectures, animated demonstrations and self evaluation.

# Physical Labs Vs Virtual Labs

Factors	Physical Labs	Virtual Labs
Cost	Typically in few Lakh Rupees	Almost Nil ( only your existing PC with internet connection is needed)
Availability	Limited in time and space	Designed for 24x7 usage
Experimentations	Limited options for innovation	Provides wider & safer options for innovative experimentations e.g. High Voltage lab, Mechanical Design lab, Biomedical , Civil Engg Structures labs.
User Experience	Best	Second Best

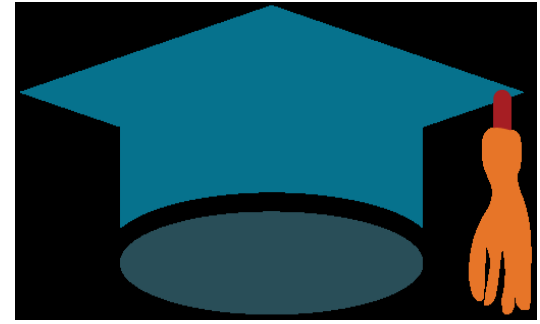


# Types of Virtual Labs





# Intended Users



- ✓ **College Students** who do not have access to good lab-facilities.
- ✓ **High-school students** whose inquisitiveness will be triggered, possibly motivating them to take up higher-studies.
- ✓ **Different engineering colleges** who can benefit from the content and related teaching resources.
- ✓ **Researchers in different institutes** who can share collaborate equipment and resources.



# Participating Institutes



IIT Delhi



IIT Bombay



IIT Kanpur



IIT Kharagpur



IIT Madras



IIT Roorkee



IIT Guwahati



IIIT Hyderabad



Amrita University



Dayalbagh University



NITK Surathkal

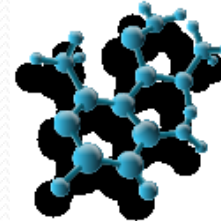
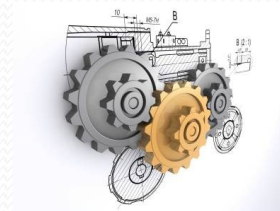
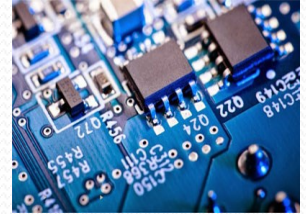


COE Pune



# Broad Areas for Virtual Labs

- **Electronics and Communication Engineering**
- **Computer Science and Engineering**
- **Electrical Engineering**
- **Mechanical Engineering**
- **Civil Engineering**
- **Chemical Engineering**
- **Biomedical and Biotechnology Engineering**
- **Chemical Sciences**
- **Physical Sciences**



**All areas of Science and Engineering are covered**

# Website: [www.vlab.co.in](http://www.vlab.co.in)



**VIRTUAL LABS**

[Home](#)

An MHRD Govt of India Initiative

An Initiative of Ministry of Human Resource Development (MHRD)  
Under the National Mission on Education through ICT

Name of Lab

Broad Area

Any

Search



## PARTICIPATING INSTITUTES



**IIT DELHI**



**IIT BOMBAY**



**IIT KANPUR**



**IIT KHARAGPUR**



**IIT MADRAS**

## Objectives of the Virtual Labs:

- To provide remote-access to Labs in various disciplines of Science and Engineering. These Virtual Labs would cater to students at the undergraduate level, post graduate level as well as to research scholars.
- To enthuse students to conduct experiments by arousing their curiosity. This would help them in learning basic and advanced concepts through remote experimentation.
- To provide a complete Learning Management System around the Virtual Labs where the students can avail the various tools for learning, including additional web-resources, video-lectures, animated demonstrations and self evaluation.
- To share costly equipment and resources, which are otherwise available to limited number of users due to constraints on time and geographical distances

## Announcements

1. [Click here for the Lab Feedback Form.](#)
2. [Virtual Labs on YouTube.](#)
3. [Click here for NCs Registration.](#)
4. [Click here for NCs Login.](#)
5. [Click here for VLab](#)

**One common website to access all Virtual Labs**





# Value Add in a Nutshell



**On-demand Labs**  
*[learn at own pace]*

**Integrated Learning**  
*[contents at one place]*

**Self - Evaluation**  
*[pre /post lab quiz]*



**Animation/Video Tut**  
*[better insight]*

**Freedom to make mistakes**  
*[can experiment with experiments]*

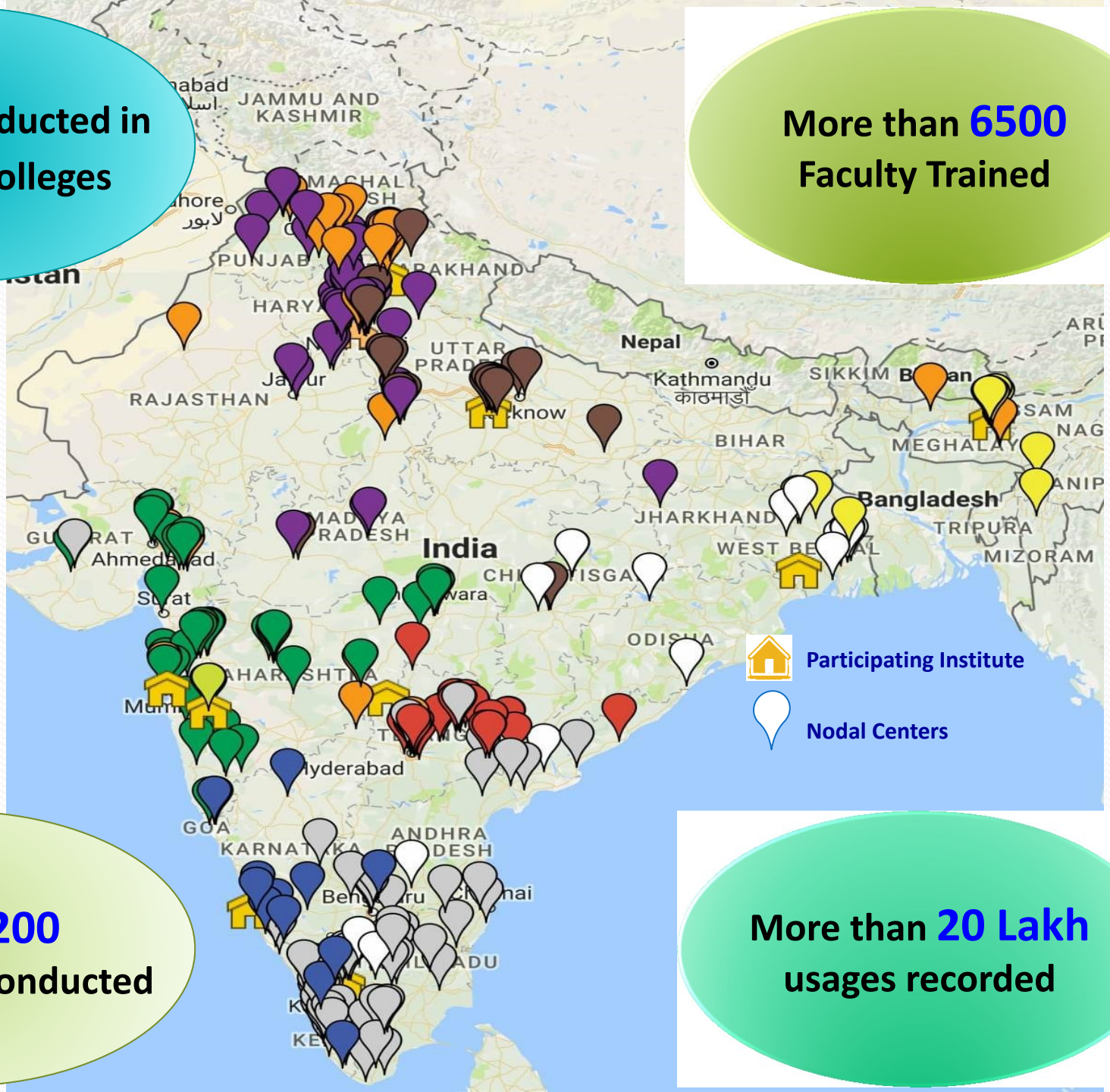
**Virtual Labs - A Complete Learning Management System**

# Impact of the Project



Outreach conducted in over **500** Colleges

More than **6500** Faculty Trained












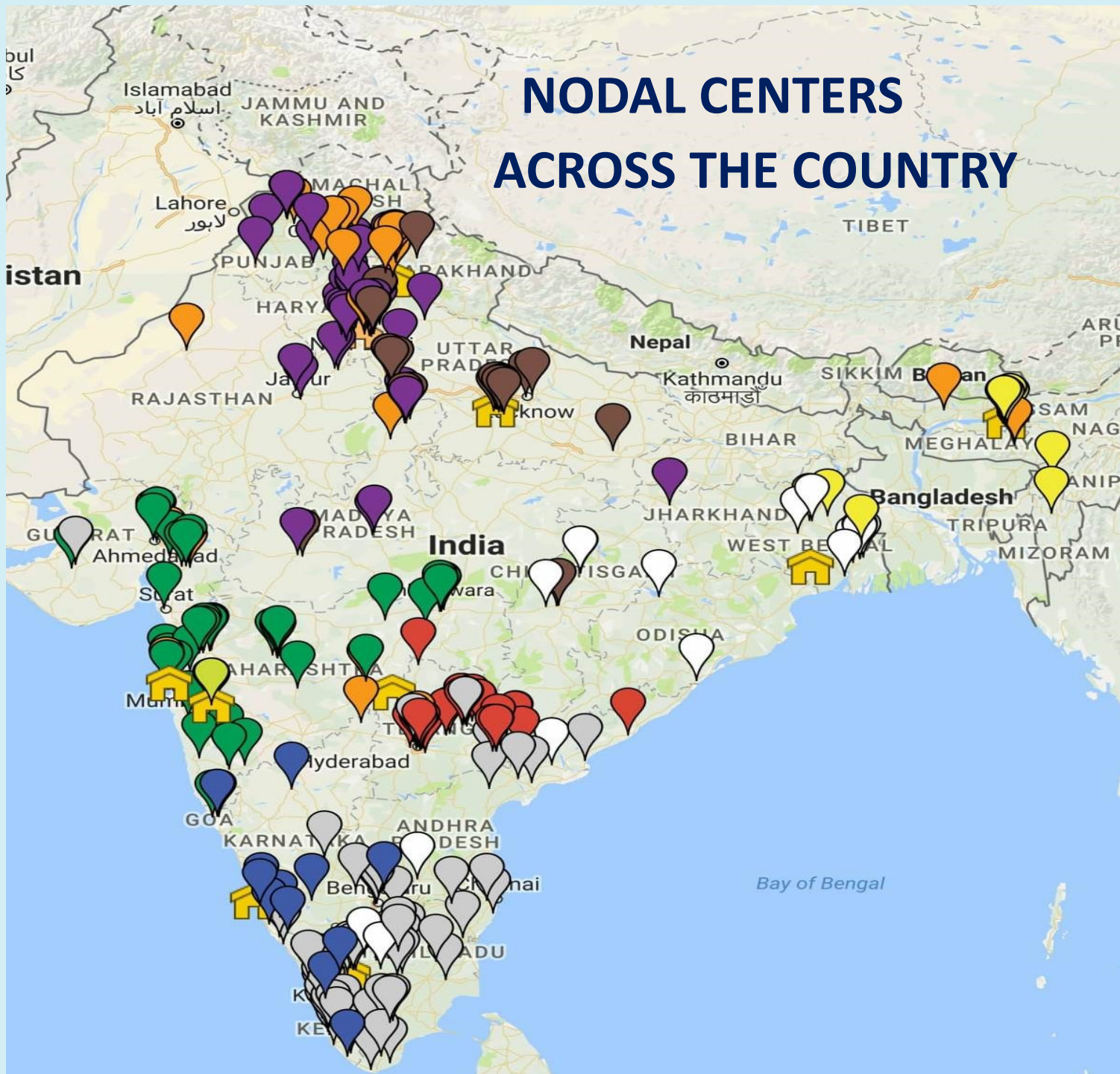
Over **1200** Workshops Conducted

More than **20 Lakh** usages recorded



# NODAL CENTERS ACROSS THE COUNTRY

-  IIT Bombay
-  COE Pune
-  IIIT Hyderabad
-  IIT Delhi
-  IIT Guwahati
-  Amrita University
-  IIT Kanpur & Dayalbagh
-  IIT Roorkee
-  NITK Surathkal
-  IIT Kharagpur



# State-Level Workshops as Virtual Lab's Outreach









# Workshop on virtual labs

TRIBUNE NEWS SERVICE

AMRITSAR, FEBRUARY 23

A state-level workshop on virtual labs was organised by IIT Delhi and Global Institutes jointly at the latter's campus here on Wednesday. Global Institutes was awarded with nodal centre for "Virtual labs project by IIT Delhi" in 2016.

The workshop on virtual labs, an initiative of Ministry of Human Resources Development (MHRD) under the National Mission on Education through ICT, was conducted by experts from IIT Delhi for the faculty and students of Global Institutes.

The concept of "virtual labs" has been floated as physical distances and availability of resources often limit doing experi-

ments, especially when they involve sophisticated instruments. Virtual labs have been designed to provide remote access to labs in various disciplines of science and engineering.

These labs cater to students at the undergraduate and postgraduate levels, besides research scholars. IIT experts Prof Ranjan Bose, Tanmay Tarun Das, Prateek Sharma, Ashish Mudgil and Ashish Ranjan conducted five sessions during the workshop. Participants were given demonstration of a number of experiments from different streams.

As a part of outreach activity, over 550 workshops have been conducted in over across the country by all participating institutes.

## जेपी यूनिवर्सिटी में वर्चुअल लैब पर मंथन

निजी संकटदा, संवाद

संवाद के तहत चले जाने वाले वर्चुअल लैब पर मंथन को एकदिवसीय वर्चुअल लैब कार्यक्रम का अनावेन किया गया। यह कार्यक्रम भारतीय तकनीकी संस्थान दिल्ली द्वारा आयोजित की गई। इस कार्यक्रम का आयोजन जेपी विश्वविद्यालय के कुलपति डॉ. विनोद कुमार द्वारा किया गया। इस कार्यक्रम के दौरान इंजीनियरिंग और विज्ञान के विभागों में आयोजित वर्चुअल लैब को दर्शाया के बारे में विचार से जानकारी दी।



कंसर्गर के प्रेषी विश्वविद्यालय में आयोजित कार्यक्रम में भाग लेते हुए के शिक्षित तकनीकी विश्वविद्यालय तकनीकी सारणी में आया कर सख्त

विश्वविद्यालय के 70 अधिपतियों ने कार्यक्रम में भाग लिया। जेपी विश्वविद्यालय के कुलपति डॉ. विनोद कुमार ने बताया कि जेपी विश्वविद्यालय द्वारा 2016 प्रथमक ईमार्ग में इस कार्यक्रम से विभागत प्रेरित का नोडल केन्द्र का मंचालन भारतीय तकनीकी

## एसआरके विश्वविद्यालय में वर्चुअल लैब्स का समापन



REF: DIVYA HIMAGHAL SOLAN/OT. MAR 01, 2017 09:41/183

## एसआरके में वर्चुअल लैब्स का समापन



भोपाल • सर्वपल्ली राधाकृष्णन विश्वविद्यालय में शनिवार को आईआईटी के तहत वर्चुअल लैब्स का समापन हुआ। इसमें मुख्य अतिथि डॉ. अखिलेश कुमार पांडे, अध्यक्ष एमपी निजी विश्वविद्यालय आयोग रहे। कार्यशाला में आईआईटी दिल्ली से तन्मय दास, संजीव सोनी, प्रतीक शर्मा, आशीष मुद्गल और मोहक कौशिक विशेषज्ञ के रूप में सम्मिलित हुए। इस कार्यशाला का उद्देश्य छात्रों को वर्चुअल लैब्स की अवधारणा को समझाना था।

भोपाल। सर्वपल्ली राधाकृष्णन विश्वविद्यालय में आईआईटी दिल्ली के अंतर्गत वर्चुअल लैब्स का समापन हुआ। इस कार्यशाला में मुख्य अतिथि के रूप में डॉ. अखिलेश कुमार पांडे अध्यक्ष एमपी निजी विश्वविद्यालय आयोग उपस्थित रहे। उन्होंने कार्यशाला में उपस्थित सभी अध्यापक व छात्रों को संबोधित किया। इस कार्यशाला में आईआईटी दिल्ली से तन्मय दास, संजीव सोनी, प्रतीक शर्मा, आशीष मुद्गल और मोहक कौशिक विशेषज्ञ के रूप में सम्मिलित हुए। उन्होंने कार्यशाला में उपस्थित विभिन्न संस्थाओं के अध्यापक व छात्रों को वर्चुअल लैब्स की बारीकियां समझाई। एसआरके विश्वविद्यालय अब वर्चुअल लैब्स का नोडल केन्द्र हो गया है। इस कार्यक्रम में विश्वविद्यालय के चेयरमैन डॉ. सुनील कपूर, कुलपति डॉ. एसएस कुशवाहा, डायरेक्टर योगेश पहाड़िया और कोओरडिनेटर प्रो. रवि लिमा उपस्थित रहे।

# Want Something to Share !







An MHRD Govt of India Initiative

# Thank You



## A Journey From Concept To Reality !