

NITK's lab enables remote experimentation worldwide

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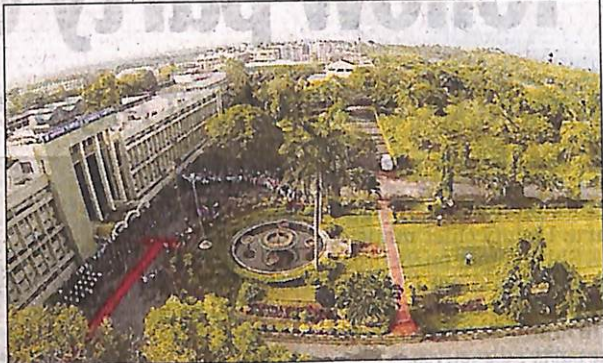
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Mangaluru: Students from any institution, including NITK Surathkal, have the flexibility to perform their laboratory experiments beyond traditional physical laboratories. They can access and conduct experiments from their hostel or any remote location worldwide.

Thanks to the remote trigger lab available at NITK Surathkal, under its Student Online Laboratory Through Virtual Experimentation (SOLVE) facility, students and faculty can access lab equipment remotely through computers, anytime of the day. This state-of-the-art experimentation facility is available in selected areas of engineering and science education and can be used both through remote access and on-site experimental work. SOLVE was set up in 2010, and over the years, it added many features, including simulation, measurement, and RT labs.

The Remote Trigger (RT) Lab is a part of the virtual lab. The team has trained 1.5 lakh plus users (students and faculty members) with the usage of virtual labs to date through 1,200 plus workshops and webinars, said KV Gangadharan, participating institute coordinator - Virtual Labs, professor - mechanical engineering, dean (planning & developments), head - Centre for System Design, NITK Surathkal. Pruthviraj U is the institute VLab development coordinator - Virtual Labs.

Shrestha, in-charge of



INTERNATIONAL OUTREACH: An aerial view of NITK Surathkal

the RT labs, told TOI that there are two RT labs: the Vibration Lab for mechanical engineering students and the Strength of Materials Lab for civil engineering students.

The Vibration Lab, which is non-destructive and available round the clock, provides users access to experimental simulations focused on studying both free and forced vibrations across different system configurations. Through these experiments, participants can analyse system responses to specific inputs and determine essential system parameters, enabling them to make informed decisions regarding machinery operations and performance.

However, the Strength of Materials Lab is a destructive lab and is available on pre-booking only. Shrestha shared that these facilities allow students to conduct actual experiments by controlling equipment from a distance using computers and internet connectivity. Through this setup, learners can trig-

ger experiments remotely and observe outcomes. This virtual access enables users to analyse system behaviour under different input conditions and understand how varying parameters influence experimental results.

The Vibration Lab has about seven experiments, whereas the Strength of Materials Lab has several experiments, but only a few that are prominently used are made available to users. "This lab works through a dedicated website and not a software programme," said Shrestha, adding it is open to any interested user. She added that through these RT labs, one can not only study but also complete their college assignments and submit them.

Virtual laboratory facilities are accessible to all students across the globe via the vlab.co.in portal. Educational institutions interested in connecting with the virtual lab can contact the SOLVE lab at the Centre for System Design by emailing solve@nitk.edu.in.