Structural Health Monitoirng Laboratory

Structural health Monitoring lab @ Mahindra university aims to monitor Structural Performance of civil infrastructures using innovative sensing and computing technologies using newly emerging ideas in piezoelectric sensing and big data analytics. Such technologies will enable creation of a new generation of smart civil infrastructures, which employ possibly self-powered ubiquitous sensing to assess full-scale structural performance, and thereby support their own management from its strength development stage till estimating the remaining service life of structures

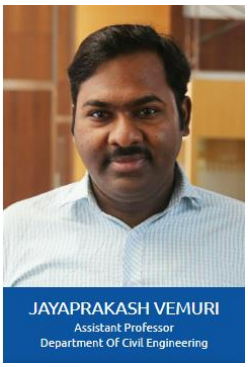
Faculty Involved:

Lab mentor & Founder:

Personal Web page

personal web Page

Personal web page



Personal Web Page

The services offered by the laboratory are:

- Academic: Train undergraduate & Maters students In structural health monitoring technologies as a part of their curriculum, Undergraduate and Doctoral project works
- Research: Monitoirng of bamboo structures, concrete strength gain and durability, Applications of AI & ML
- Consultancy: In situ-Monioting concrete curing and strength gain process using piezo sensors via EMI technique, Moniotirng of infrastructure using piezo sensors

On-going research projects:

- Applications of AI & ML in SHM

- Health moniotirng of damage prognosis in Bamboo structures
- Moniotirng the Deterioration of Structural parameters in severe environmental and mechanical loading condition
- Monitoirng the strength of 3 D printed concrete

Ph. D scholars

Name of the scholar	Research topics
	Fatigue Damage Assessment and Monitoring of RC Structures using Piezoelectric Sensor Real Time Structural Health Monitoring of Concrete Structure using Piezo Sensor
	Monitoring of Rheological based ultra-high performance concrete strength and durability aspects Uisng Piezo sensors

Software: Vee- Pro, Bech View, Ansys, Abacus

Equipment available in the laboratory:

The laboratory is well equipped with all the state of art infrastructure

LCR meter : Keysight E4980A, Precision LCR Meter, 20 Hz to 2 MHz
Digital Multimeter: Keysight 34460A
Function Generator:
Dta Acquisition System
Piezo Sensors
Strain Guages
Accelerometers

Digital Multimeter
Keysight 34465A

Digital Storage Oscilloscope
Keysight DSOX1204A

LCR meter
Keysight E4980A, Precision LCR Meter, 20 Hz to 2 MHz

Glimpses of the course project of M.tech Students Batch 2021

https://www.youtube.com/watch?v=8ILhNcDMi_Y

Identification of damage in Steel frame (Damage - loosening of bolts)- Mtech Course (IHM) Project - YouTube

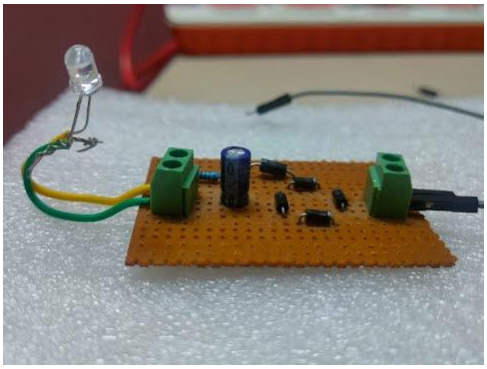
#structural health monitoring #courseproject #mahindrauniversityCourse: Infrastructural Health MonitoringCourse instructor: Dr. Visalakshi Talakokula

https://youtu.be/RoSp-SewAcI

Bridge Monitoring Using SHM

youtu.be

https://youtu.be/6gp8c_f3XJ4



Footstep Energy Harvesting Using Piezo Sensors

Project on "Footstep Energy Harvesting Using Piezo Sensors " as a part of our Course Project Infrastructural Health Monitoring.#mtechprojects #MU #IHM #SHM ...

https://youtu.be/JmNAr_NO8yo

Strength Gain For Different Concrete Systems using Piezo Sensors

The Rate of gain of strength for concrete is calculated by destructive compressive testing of cubes. Using PZT(Piezo Sensors) by surface-bonded configuratio...

https://youtu.be/PzE84ufVVnY

A Novel Approach for Development of Impact Hammer using Piezoelectric Sensors: A State of Art

Piezoelectric Impact Hammer (PIH), Structural Health Monitoring (SHM), Structural Engineering, Civil Engineering, Mechanical Systems & Electrical Systems.youtu.be

https://youtu.be/_MwrQw8zZDQ

Determination of Natural Frequency of a Simply supported Steel Beam# IHM# Mahindra University

The video is about determination of natural frequency of a simply supported steel beam.

Comparing the results between the Experimental work carried and the n...youtu.be

https://www.youtube.com/watch?v=AiVa5d_gO-U

Finding Natural Frequency of a steel frame using PZT sensors and comparing with Numerical Model.

https://www.youtube.com/watch?v=bZCxlWtY6Eo

Measurement of Piezoelectric Coefficient: Experimental and Numerical approach - YouTube

In this video, I conducted an experiment called the Normal load method for finding the coefficient of the piezoelectric sensor(d33) and validated the result ...

https://www.youtube.com/watch?v=9OxCw6UZ2oQ

Determine the exact natural frequency of any structure. - YouTube

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