

*High-End Workshop*  
on  
**Sustainable Structural  
Engineering with Natural and  
Recyclable materials**

29<sup>th</sup> January 2024 – 4<sup>th</sup> February 2024



*Organized by*

Department of Applied Mechanics  
Visvesvaraya National Institute of  
Technology Nagpur - 440010

**Funded by:**

Science & Engineering Research Board (SERB)  
under

'KARYASHALA' ABHYAAS Program  
Accelerate Vigyan Scheme

**Chief Patron:**

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**About the Institute**

Visvesvaraya National Institute of Technology, Nagpur is one of the thirty National Institutes of Technology in the country. It is an Institute of National Importance, named after Bharat Ratna Sir M. Visvesvaraya. Earlier, the institute was known as Visvesvaraya Regional College of Engineering (VRCE). It was established in the year 1960 under the scheme sponsored by Govt. of India and Govt. of Maharashtra. The vision of institute is to contribute effectively to the national endeavor of producing quality human resources of the world-class standard by developing a sustainable technical education system to meet the changing technological needs of the country, incorporating relevant social concerns and to build an environment to create and propagate innovative technologies for the economic development of the



nation.

**About the Department**

Established in 1962, the Department of Applied Mechanics offers two post graduate programs i.e. M.Tech. in Structural Engineering and M.Tech. in Structural Dynamics and Earthquake Engineering. The department offers structural engineering courses to B.Tech. (Civil) and B. Arch programs along with the course of Engineering Mechanics to the first year B.Tech. students. Department is pursuing activities related to earthquake, wind, concrete corrosion, advanced engineered materials, blast, impact and fire engineering.

**About the Course**

This course will be conducted under Accelerate Vigyan scheme KARYASHALA intended towards "Abhyaas" mission. The contents of this course fall under the theme of Technologies for habitat. This course aims to introduce the recent researches, development and practices in the field of structural construction using green and recyclable materials. These materials consist of bamboo, fly ash, blast furnace slag, pozzolana etc, which help in reducing the carbon footprint. However, use of these materials in construction faces many challenges such as strength, workability, serviceability, durability, availability and cost. Those topics will be addressed by the experts in this course. Also, various researches happening in the field of green building will be introduced.

**Target Participants**

**Motivated PG/PhD students from institutes as defined under the Scheme 'Accelerate Vigyan' by SERB.**

**Objective of the Course:**

- ✓ To create awareness about the use of green and recyclable materials that are being used in construction field.
- ✓ Various technical aspects related to these materials are to be discussed. Finally, the methodology and techniques of structural design and construction will be explained along with practical case studies. As desired by DST-SERB 'KARYASHALA', the course is intended towards "Abhyaas" mission.

**Prerequisites:**

- ✓ Prerequisites for the course are the basic knowledge about structural analysis and design

## TENTATIVE SCHEDULE

Topic	Speaker	Topic	Speaker
Experimental and Numerical Investigation of Bamboo Reinforced Structural Elements	Dr. Damodar Maity Professor, IIT Kharagpur	Precast concrete pavement	Dr. R.S Sonparote Professor, VNIT Nagpur
Seismic Analysis of Assam type houses	Dr. Hemant Kaushik Professor, IIT Guwahati	Urban sustainability	Dr. Rajshree Kotharkar Professor, VNIT Nagpur
Bamboo concrete composite Structures	Dr. Charuchandra Korde Assistant Professor, IIT Bombay	Design guidelines for bamboo structures using software	Dr. S.V. Bakre Professor, VNIT Nagpur
Alkali Activated Concrete, recycled concrete, self-compacting concrete	Dr. Somnath Ghosh Professor, Jadavpur University	GGBS concrete	Dr. Sangeeta Gadve Professor, VNIT Nagpur
Sustainable structures	Dr. L.M. Gupta Professor, VNIT Nagpur	Codal provision on structural design using bamboo	Dr. Debarati Datta Associate Professor, VNIT Nagpur
Concept and design of Bandhara- a step towards sustainable structure	Dr. R.K Ingle Professor, VNIT Nagpur	Predicting strength of geopolymer concrete using Machine Learning	Dr. Rahul Biswas Assistant Professor, VNIT Nagpur

### Registration & Guidelines:

- ✓ The course will be completely free of cost for shortlisted participants.
- ✓ 3AC train fare, accommodation and food will be provided by the host institute.
- ✓ The participants will be limited to 25 candidates (as per SERB norms).
- ✓ The applicants shall produce an endorsement letter from their Head of department indicating their enrolment with the institute and “No Objection Certificate (NOC)” for permitting to undergo training in workshop if selected.
- ✓ VNIT reserves the right to devise a well-defined shortlisting criterion for selection of candidates based on the basic eligibility criteria laid out by SERB and as per formulated guidelines for this workshop.
- ✓ Please fill Google form for Registration:

<https://forms.gle/zniHvVFqV9HQ4m6eA>

Last date for registration:

**18 January 2024**

Notification to selected participants:

**20 January 2024**



Scan to register

### Course Assessment & Feedback

- ✓ The participants will be provided with a course completion certificate based on the basic level evaluation and interaction during the course.
- ✓ As per SERB guidelines, mandatory anonymous course feedback shall be taken in the stipulated format.

### Correspondence and query

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