High-End Workshop (Karyashala) on

Experimental and Analytical Techniques for Evaluating the Seismic Strengthening Measures for Masonry Structures

October 22 – 28, 2021

Sponsored by

SERB UNDER ACCELERATE VIGYAN SCHEME

Coordinator
Dr. Vaibhav Singhal, IIT Patna

Important Dates
Workshop dates: October 22 – 28, 2021
Last date of Registration: 18th Oct., 2021
Notification to selected participants: 20th Oct., 2021

OVERVIEW

The aim of this workshop is to teach post graduate students about the various national and international practices used to evaluate the efficiency of strengthening measure for masonry structure. The participant will learn about various high-end scientific equipment used for material testing and for application of displacement control static and slow-cyclic lateral load tests such as servo-control loading devices and computer-based data acquisition systems. Participants will study about various aspects of experimental investigation, such as test planning and design, model fabrication, loading system, sensors, data acquisition, processing and interpretation. Further, the demonstrations and hands on training will be given on analytical/numerical tools used for detailed understanding of strengthening schemes used for masonry.

OBJECTIVES

- To abreast the participant with the available seismic evaluation methods as well as strengthening schemes for the unreinforced masonry structures.
- Introduce experimental methods generally utilized in investigating static and cyclic behaviour of unreinforced and strengthened masonry systems and components.
- Familiarization with the high-end scientific equipment used for the material characterization of masonry and displacement control loading.
- Introduction to the non-linear finite element analysis for masonry structures using advanced tools and packages.

TARGET PARTICIPANTS

Workshop is open to research scholars/postgraduate students from all Institutes, Universities and Engineering colleges. **There is no registration fees. The total number of seats are limited (25 nos. as per SERB guideline).** During registration participants has to submit a scan copy of their student ID along with a brief Statement of Purpose for attending this workshop.

COURSE CONTENT

- Basic concept of seismic evaluation and strengthening of masonry structures.
- Various aspects of experimental investigation such as design of test, specimen fabrication, loading system and protocol, and instrumentation.
- Working principle and demonstration of various sensors and data acquisition system.
- Test methods for characterization of masonry material in existing structures.
- Test method for determining the mechanical and bond properties of strengthening schemes; Online demo of experiments for investigating these properties.
- Design and testing of small-scale masonry wall specimens without and with strengthening.
- Basic concept of non-linear finite element modeling for design and evaluating the strengthening schemes for masonry structures; Hands on FE package, Abaqus.

TENTATIVE LIST OF SPEAKERS

- Prof. Thanasis Triantafillou, Univ. of Patras, Greece
- Prof. Durgesh C Rai, IIT Kanpur, India
- Prof. Hemant B Kaushik, IIT Guwahati, India
- Prof. Nanjunda Rao K S, IISc Banglore, India
- Prof. K.V. L. Subramaniam, IIT Hyderabad, India
- Prof. Marco Corradi, Northumbria University, UK
- Prof. Hugo Rodrigues, Univ. of Aveiro, Portugal
- Prof. Arun Menon, IIT Madras, India
- Dr. Vaibhav Singhal, IIT Patna, India

REGISTRATION

- The interested students are required to fill the following Google Form for registration before 18th Oct. 2021. https://forms.gle/qZT63dn6hh9KQ6HB7
- IIT Patna reserves the rights to devise short listing criteria for selecting the participants.

For any query please write to:
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