

WORKSHOPS ON

QUALITY CONTROL OF CONCRETE AND CONSTRUCTION MATERIALS THROUGH TESTING



AND

EXPERIMENTAL STRUCTURAL DYNAMICS, HEALTH MONITORING AND NON-DESTRUCTIVE EVALUATION USING SMART MATERIALS

At
Indian Institute of Technology(IIT D) Delhi



**Last Date for
Registration: 05th June, 2013**

New Date: 14th June, 2013

~~Date: 13 June, 2013.~~

Time: 10:00am to 5:00pm

Venue:

V LT 2, IIT DELHI

**Indian Institute of Technology (IIT D) Delhi
Hauz Khas, New Delhi – 110016**

Host Organizations:

**SMART STRUCTURES AND DYNAMICS LABORATORY
DEPARTMENT OF CIVIL ENGINEERING, IIT DELHI**

www.ssdl.iitd.ac.in

**QUAZAR TECHNOLOGIES PVT. LTD.
NEW DELHI**

www.quazartech.com

WORKSHOP ON QUALITY CONTROL OF CONCRETE AND CONSTRUCTION MATERIALS THROUGH TESTING

ABOUT THE WORKSHOP

Workshop Ist

Quality Control Concepts & Definition with reference to concrete production. Stages of quality control namely forward control, immediate control and retrospective control is discussed next. Role of accelerated testing in quality control is presented. The relevant statistical concepts are highlighted and basis of acceptance criteria stipulated in IS 456: 2000 is also discussed. Testing of other construction materials namely steel is briefly discussed as still is a factory produced material.

Basic purpose of in-situ testing in concrete is highlighted followed by a discussion on role of visual survey and NDT in condition evaluation of structure. The test selection procedure for a specific purpose of diagnosis of distress is presented. Estimation of number of test required for a given accuracy and location of testing in in-situ testing is elaborated. The actual test methods for strength and durability performance evaluation will follow the above discussion. The Indian Standard recommendations in this context will also be highlighted. Thus the rationale behind the standards which have been set up for In-Situ Testing & their relevance in condition evaluation of structure will be illustrated. Inspection of structure and inspection policy and advantages will also be covered. A discussion on Repair habitation & retro fitting of structure will be taken up at the end.

The emphasis throughout the discussion will be on practical issues.



COVERAGE

- Quality Control Concepts & Definition.
- How we go about controlling quality with special emphasis on concrete.
- Steps in quality control on concrete and other materials.
- Process of In-Situ Testing, durability and strength.
- The rationale behind the standards which have been set up for in-situ testing by various Statutory Authorities and will discuss the relevance of these standards for condition-evaluation, repair, rehabilitation and retro-fitting of structures.

WORKSHOP ON EXPERIMENTAL STRUCTURAL DYNAMICS, HEALTH MONITORING AND NON-DESTRUCTIVE EVALUATION USING SMART MATERIALS

ABOUT THE WORKSHOP

Workshop IInd

This Workshop course will focus on the theoretical and the practical aspects of structural dynamics, health monitoring and non-destructive evaluation of structures. It will touch upon modern tools and sensing technologies necessary for health monitoring/NDE of structures. The idea of structural health monitoring (SHM) has been receiving considerable attention worldwide due to the fact that civil infrastructures form the back bone of any modern economy. These days, more and more structures are being instrumented so that they can be continuously monitored and any possible malfunctioning be detected in advance, before it gets transformed into a catastrophe.

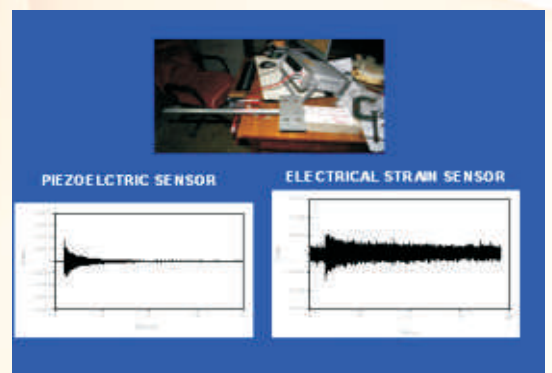
The speakers will cover a detailed introduction about structural dynamics, available sensor technologies (accelerometers, strain gauges, piezo-transducers and fibre-Bragg grating sensors), non-destructive evaluation of concrete and the algorithms with case studies chosen across the world. **The course will cover practical sessions for hands on experience of the participants with existing as well as the new sensing technologies developed at IIT Delhi, including the virtual smart structures and dynamics laboratory.**

The Workshop will be of immense interest to practicing civil, mechanical, aerospace and instrumentation engineers.



COVERAGE

- Smart materials for Structural Dynamics
- Overview of Sensing Technologies for Structural Health Monitoring
- Non-destructive Evaluation of Concrete
- Damage Detection using Low-Frequency Vibration techniques
- Electro-Mechanical Impedance (EMI) Technique for Health Monitoring and NDE
- Practical Sessions on sensors and virtual lab



WORKSHOP ON QUALITY CONTROL OF CONCRETE AND CONSTRUCTION MATERIALS THROUGH TESTING & EXPERIMENTAL STRUCTURAL DYNAMICS, HEALTH MONITORING AND NON-DESTRUCTIVE EVALUATION USING SMART MATERIALS

FACULTY

Prof. Suresh Bhalla (IITD)
Prof. B. Bhattacharjee (IITD)
Prof. Deshdeep Sahdev (IITK)

WHO MAY PARTICIPATE?

- Civil Builders/Contractors.
- Key Personnel from Test Centers.
- Practicing Engineers- government and private-in civil/ mechanical/ aerospace.
- Faculty members of Engineering Colleges.
- Scientists from government R&D organizations.
- Government Officers (Ministries).
- Research Scholars and M. Tech students.

DATE AND VENUE:

New Date: 14th JUNE, 2013

~~Date: 13 JUNE, 2013~~

Time: 10:00am to 5:00pm

Venue: V LT 2, IIT DELHI

Fee Per Delegate (INR)

	1 Delegate	4 or more Delegates	8 or more Delegates
Corporate Registration	4000	3500(Each)	3250(Each)
Academic Registration	3500	3250(Each)	3000(Each)
Student Registration	2500	2250(Each)	2000(Each)

The registration will be on first-cum first serve basis.

The fee will be payable by DD/cheque in favour of “**Quazar Technologies Pvt. Ltd.**” Payable at **New Delhi**.

Last Date for Registration: **05th June, 2013.**

ACCOMMODATION

This is a non-residential programme. The participants are expected to make their own arrangements for stay. Subject to availability, the organizers will try to book accommodation on payment basis within the guest houses of IIT Delhi, if requested sufficiently in advance (two weeks) through the Registration Form.

[Previous Workshop](#)

WORKSHOP ON EXPERIMENTAL STRUCTURAL DYNAMICS, STRUCTURAL HEALTH MONITORING AND NON-DESTRUCTIVE EVALUATION

Date: 09 March, 2013

FACULTY

Prof. T. K. Datta (IITD)
Prof. Suresh Bhalla (IITD)
Prof. B. Bhattacharjee (IITD)
Prof. Deshdeep Sahdev (IITK)



Quazar Technologies Pvt. Ltd.
New Delhi, INDIA



Indian Institute of Technology
(IIT D), DELHI



WORKSHOP ON QUALITY CONTROL OF CONCRETE AND CONSTRUCTION MATERIALS THROUGH TESTING

Prof. B. Bhattacharjee



*B.Tech (Hons.) [IIT Kgp]
M.Tech & Ph. D. [IIT Delhi]
Professor, Department of Civil Engineering*

Research Areas of Interest:

Durability of Concrete, Rebar Corrosion, Cement Based Composites, Construction Technology, Building Science.

<http://web.iitd.ac.in/~bishwa/Home.html>

Special Invitation to:

Prof. Deshdeep Sahdev



*Ph.D.(Case Western Reserve University)
Department of Physics, IIT Kanpur
Alumnus of Cornell University and University of Pennsylvania*

Research Areas of Interest:

Civil Engineering & instrumentation, Hi-tech instrumentation.

http://www.iitk.ac.in/phy/New01/profile_DS.htmlv

Workshop Ist



WORKSHOP ON EXPERIMENTAL STRUCTURAL DYNAMICS, HEALTH MONITORING AND NON-DESTRUCTIVE EVALUATION USING SMART MATERIALS

Prof. Suresh Bhalla



*Ph.D. (NTU, Singapore)
Associate Professor
Department of Civil Engineering, IIT Delhi*

Research Areas of Interest

Structural health monitoring; Smart materials and structures; Non-destructive evaluation; System identification; Adaptation and transfer of aerospace technologies to mechanical and civil engineering systems; Bio-mechanics; Tensegrity structures; Development of scientific design approach for bamboo based structures.

<http://web.iitd.ac.in/~sbhalla/>

Workshop IInd



REGISTRATION FORM

For further information please contact:

WORKSHOP

ON

**QUALITY CONTROL OF CONCRETE AND
CONSTRUCTION MATERIALS THROUGH TESTING
&
EXPERIMENTAL STRUCTURAL DYNAMICS,
HEALTH MONITORING AND NON-DESTRUCTIVE
EVALUATION USING SMART MATERIALS**

**New Date: 14th June 2013
~~13 June, 2013~~**

Name : _____

Designation : _____

Organization: _____

Address : _____

Email : _____

Phone .: _____

Mobile : _____

Fax : _____

Fees Payable to "Quazar Technologies Pvt. Ltd." Payable
at New Delhi.

Draft / Cheque No.: _____

Dated: _____

Drawn on: (Bank) _____

Rs _____

Signature of applicant

WorkShop Coordinator

Dr. S. Bhalla

**Department of Civil Engineering
Indian Institute of Technology (IIT D) Delhi
Hauz Khas, New Delhi – 110016
Ph: 2659 1040**

Organized By:

**Quazar Technologies Pvt. Ltd.
New Delhi**

Collaboration with:

**Smart Structure & Dynamic Lab.
Indian Institute of Technology Delhi(IIT D)
New Delhi**

For Registration:

**Please fill the above registration form &
send it to:**

Mr. Vikash Kumar Singh

**Quazar Technologies Pvt. Ltd.
5, Sarvapriya Vihar Market, Sarvapriya Vihar
Hauz Khas, New Delhi – 110016**

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