

# ICI UPDATE

An Electronic-Bulletin from  
the Indian Concrete Institute

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## From the President's Desk



Dear members of ICI,

The central government is bringing in more measures to encourage construction, especially in the housing sector. Recently the Union Minister of Urban Development, Housing and Urban Poverty Alleviation announced that Centre will bring out a single window clearance facility to accord speedy approval for buildings with a maximum time limit of 60 days. There is a news that RBI is also working on a one time package to help the cash-strapped real estate sector. All this will definitely boost the construction in the coming years.

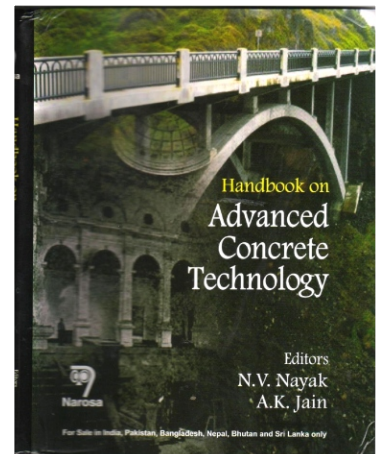
It is thus a time to ponder over the other essential enablement, which is making available the huge workforce consisting of unskilled, semi-skilled and skilled workers as well as engineers to build fast, build economically and build with quality. There is also a need to utilize the most optimum technology with appropriate materials. All this would require elaborate mechanisms to disseminate knowledge; train people using the conventional class-room methods as well as IT enabled platforms.

ICI has embarked on doing its bit by starting a Technology Center which will come up in Chennai. The Technology Center will have state-of-the-art class room for training with an IT enabled library. Going forward, it is intended to have facility for demonstration and research at the same premises or in an extended one. It is hoped that ICI can enter into tie-ups with builders and corporates for tailor-made/focused training as well as bridge courses. This ambitious endeavor will need financial support from the large hearted corporates, builders as well as individual members. ICI has embarked on a massive fund collection drive for this project and appeals to each one of you to contribute and encourage others to contribute. You can provide ICI, the vital links to those philanthropists who are likely to chip in.

Similar facilities for training would also be encouraged at our vibrant centers in the coming future. ICI has also started preparing a list of industry veterans as well as project personnel who could act as faculty and the response has been very encouraging. ICI thanks all those who have already responded to be course faculty as well as to act as mentors. A detailed and center based program would also be launched with the help of these faculty, for field personnel as well as members of the student chapters.

I had the good fortune to participate in the Asian Concrete Federation Conference (ACF 2016) as well as the ACF GC and GA meetings held recently at Hanoi. There is a growing enthusiasm amongst the Concrete Associations of Asian region to collaborate on various activities. I am proud to inform you that I have been elected as one of the Vice Presidents of ACF to succeed our Immediate Past President Dr. Saraswati for the years 2017 and 2018. This is a recognition to ICI and the Concrete fraternity of India.

Dr. M. R. Kalgal  
President



Hand Book on 'Advanced Concrete Technology' authored by more than 25 Eminent Experts is available at 20% discounted price of Rs.850/- for ICI members only. Postage extra. Please contact Ph : 044-24912602 ; email : [ici4@airtelmail.in](mailto:ici4@airtelmail.in).

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Dear Members,

Pl update your contact details, if there is any change.

**R. Radhakrishnan**  
Secretary General

### ICI Premium Quality Designer

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\* Postal Charges Extra



## ICI - CHANDIGARH CENTRE

## Technical Meet:

Indian Concrete Institute - Chandigarh Centre in association with UltraTech Cement Ltd., organized a technical meet on 10<sup>th</sup> June, 2016 at Hotel Sarovar Portico, Jalandhar.

Er. Shashi Gaggar, Vice-President (Technical Services), UltraTech Cement Ltd., welcomed the Guests on behalf of ICI. He said that such technical seminars are the platform, where members gather and have a technical presentation on any contemporary topic. He emphasized the advantages of seminars, as the Indian construction industry forms an integral part of our economy and a conduit for a substantial part of its development, poised for growth on account of the special thrust by the Government and people's rising expectations for improved quality of living.



Dr. Subrato Chowdhury

Er. Hitesh Mogra

Keynote Speaker of the function Dr. Subrato Chowdhury, Head R & D, UltraTech Cement Ltd., Mumbai gave a very interesting, informative & in-depth presentation on "Untold Story of Non-Performing Concrete". He started his presentation with examples of building in India & out-side India, where concrete was used 1930s and still the performance of building is in excellent condition. He explained the criteria & approach by which we can produce durable concrete. He said high water-cement ratio, improper proportion, inadequate curing, improper compaction and wrong construction practices are responsible for deterioration of concrete.

About 100 Engineers, Architects, Builders & Govt. Officials attended the Function. Er. Hitesh Mogra, Secretary, ICI Chandigarh Centre proposed vote of thanks. Meeting ended with Dinner.

## ICI - CHENNAI CENTRE

## 1. Technical Lecture



Welcome address by Dr. K.P. Jaya

ICI-Chennai Centre organized an evening lecture on "RMD KWIKFORM, SCAFFOLDING & SHORING SYSTEM" in association with Indian Institute of Technology Madras, Chennai on 25th July, 2016 at ICSR Auditorium, IITM. This evening lecture was sponsored by RMD Kwikform. The speakers were Mr. Arul Raja Managing Director, RMD Kwikform INDIA, Mr. Mike Jones, Specialist Consultant - Major Projects, RMD Kwikform, UK and Mr. M.V. Shanmugam, Engineering Manager, RMD Kwikform INDIA.



Mr. Arul Raja      Mr. Mike Jones      Mr. M V Shanmugam

Er. R Radhakrishnan, Secretary General, ICI, Dr.K.P. Jaya, Chairperson, ICI-Chennai Centre, Er.K. Venkataraman, Secretary, ICI-Chennai Centre and all committee members were present on the occasion. More than 125 participants were gathered for the technical

lecture. Dr. K.P. Jaya welcomed the gathering. The lecture gave in-depth knowledge on Formwork, Scaffolding and Shoring system. The speakers enlightened the session with working videos, which momentarily grabbed the audience. The event was formally concluded with vote of thanks by Er. K. Venkataraman. The event was followed by dinner.



Vote of thanks by  
Er. K. Venkataraman

## 2. One-Day International Symposium:

### **K P Pradeep Memorial Symposium on Pioneering Science and Development for Construction**

Generalized construction of concrete structures without any formwork would be a major breakthrough that could lead to faster construction. Towards this goal, there are many research and development initiatives around the world in 3-dimensional (3D) printing of concrete. Indian Concrete Institute, Chennai Centre apprehending the fact that 3 D Printing would be The Next Industrial Revolution conducted a one day international Symposium on 3D Printing with the leading experts across the world on 8th August 2016, at ICSR Auditorium, IIT Madras in association with India Institute of Technology Madras, Chennai and The Masterbuilder. The Symposium was sponsored by UltraTech Cement Limited, Larsen & Toubro (L&T), CREDAI, FOSROC and BASF.

Dr. M.R. Kalgal, President, ICI, Er. K Jayasankar, Vice-President (South) ICI, Er. R.Radhakrishnan, Secretary General, ICI, Er. Venkataraman, Secretary, ICI (Chennai Centre) and all the committee members were present during the occasion. Dr.K.P.Jaya, Chairperson, ICI Chennai Centre (in absence)

extended her wishes for the symposium. The auditorium was packed with more than 250 people. The program commenced with a small introduction to K P Pradeep Lecture series by Er. K. Jayasankar. Leading experts from across the world presented their points of view and discussed the recent advances in this topic. The experience of different pioneering groups were discussed to cover the architectural motivation, material performance, structural requirements, automation in construction, and practical implementation. The discussion threw light on various topics listed below,

- About the Programme and Overview of Technological Issue ( Dr. Ravindra Gettu IIT Madras, Chennai).
- Alternative and Sustainable 3D Printing Materials for Architecture and Construction (Dr. Alexander McLeod Schofield, University of California at Berkeley, USA).
- 3D Printing of Concrete at Lafarge Holcim: What are we Searching for? (Dr. Vivien Esnault Lafarge Holcim R&D, France).
- CONPrint3D - Formwork-free Concrete On-site 3D Printing Technology (Prof.

Viktor Mechtcherine, Technical University Dresden, Germany).

- Large Scale 3D Printing of Complex Geometric Shapes in Construction (Dr. Jochen Teizer, RAPIDS Construction Safety and Technology Laboratory, Stuttgart, Germany).
- Hydration Control in Digital Fabrication with Concrete (Dr. Timothy Wangler, Swiss Federal Institute of Technology in Zurich (ETHZ), Zurich, Switzerland).
- 3D Printing with Magnesium Phosphate Cement and Advanced Building Materials Developed at HKUST (Prof.

Zongjin LI, Hong Kong University of Science & Technology, Hong Kong).

- Digital Modelling & Fabrication in Construction (Prof. Koshy Varghese, IIT Madras, Chennai).
- Expectations for the Future (Prof. S P Shah, Northwestern University, USA).

The Symposium was formally concluded with Vote of thanks by Er. K. Jayasankar. The enthusiastic participation from the audience and speakers, support from various organizations and industrial firms made the Symposium a unique and memorable one in the history of ICI-Chennai Centre.



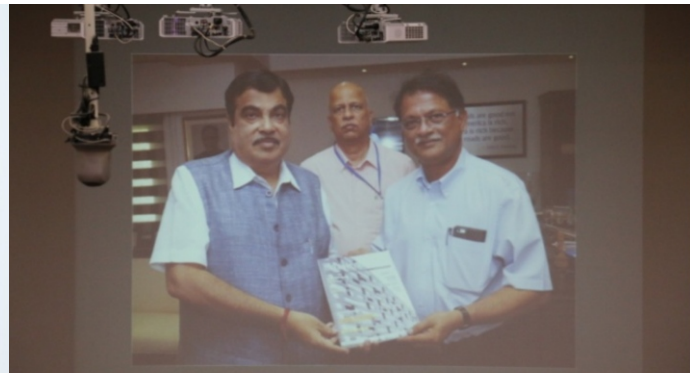
Introduction by Dr. Ravindra Gettu



Dr. Surendra P. Shah



Introduction to K P Pradeep Lecture Series by Er. K Jayasankar



Dr. Alexander McLeod Schofield



Dr. Vivien Esnault



Prof. Viktor Mechtcherine



Dr. Jochen Teizer



Dr. Timothy Wangler



Prof. Zongjin Li



Dr. Koshy Varghese



Dr. Saravana Kumar



Audience



Q & A Session



Organizing Committee Members with Speakers

## ICI - NEW DELHI CENTRE

### 1. Curtain Raiser of "Concrete 2016":



*Dignitaries on the Dais*

Indian Concrete Institute-New Delhi Centre flagged off CONCRETE 2016, an annual flagship event encompassing all facets of concrete, with a curtain raiser at India Habitat Centre, New Delhi on April 1, 2016.

The event will be held on September 9-10, 2016 at the Jacaranda Hall, India Habitat Centre and will focus on Repair, Rehabilitation & Retrofitting of Concrete Structures.

The sub-themes of "CONCRETE 2016" are: Testing and Evaluation, Materials and Applications, Repair of Concrete Structures, External Strengthening, Seismic Retrofitting and Specifications and Codal Provisions. "CONCRETE 2016" is expected to provide the industry information on new technologies and forecasts in the future of concrete from a technological and economical point of view.

The welcome address was by Er. Shishir Bansal, Chairman, ICI-New Delhi Centre. Er. Vinay Gupta, Chairman, Technical Committee & Er. K. P. Abraham, Chairman, Organising Committee, spoke about the curtain raiser and the September event. Chief Guest, Mr. Sarvagya Kumar Srivastava, Principal Secretary & Engineer-In-Chief, PWD,

Government of Delhi, also addressed the audience.

An engaging technical lecture delivered on "Ultra-High Performance Concrete" along with slide presentations by Prof. B. Bhattacharya, Civil Engg. Department, Indian Institute of Technology, New Delhi, kept the audience captivated. The lecture ended with a call to bridge the gap between theory and practice. A lively question & answer session that raised serious questions on issues that dogged concrete production in India with a spirited and informative response by Prof. B. Bhattacharya and other leading lights of the engineering world.

Presenting of mementos to Er. Sarvagya Shrivastava and to Prof. B. Bhattacharya was followed by vote of thanks by Er. Vipin Chaudhary, Honorary Secretary, ICI-DELC.

A large number of Delegates from the World of Concrete and renowned civil engineers from various Government and Private sectors marked their presence at the launch of the event, which will be held in September coinciding with the Concrete Day Celebrations.

A heightened sense of excitement prevailed as attendees discussed the September conference and exhibition and exchanged information and knowledge about the latest innovations and developments in concrete technology.

The programme was sponsored by UltraTech Cement Ltd., and Silver Arrow. The event continued with dinner on the beautifully manicured lawns of the India Habitat Centre.

### 2. Conference & Exhibition:



Indian Concrete Institute-New Delhi Centre together with Indian Association of Structural Engineers organised a conference on "Concrete & Structures" during the 3<sup>rd</sup> edition of World of Concrete India 2016. The three-day event was held between 18<sup>th</sup> & 20<sup>th</sup> May 2016 at Pragati Maidan, New Delhi.

The event included two-day conference (18<sup>th</sup> & 19<sup>th</sup> May) & Expo on 20<sup>th</sup> May. The Theme covered at the event included: Concrete as a Construction Material, Construction Chemical, Learning from Structural Failures, Structures subjected to Extreme Loads, Tall Buildings & Health Monitoring & Life Assessment.



The Conference was inaugurated by Mr. Sarvagya Kumar Srivastava, Principal Secretary & Engineer-In-Chief, PWD, Govt. of Delhi. In his inaugural speech, Mr. Srivastava

spoke about the upcoming challenges that the construction industry would face from the steel industry and the need to bridge the gap between theory & field implementation. He expressed satisfaction about how India is at par with the large infrastructure construction but expressed concern when it comes to small buildings & designs.

The inaugural ceremony was attended by many experts, professionals from construction industry with a common aim to promote future technologies & solutions.

Prof. Mahesh Tandon, President, IAStructE & Dr. M.R. Kalgal, President, ICI spoke about the unique coming together of two leading associations to organise the Conference of that magnitude.

There were about twenty eminent speakers from the Industry, Research & Development, and Academic Institutions. Speakers included Dr. A. K. Mullick, Mr. Nilotpal Kar, Dr. Laxmi Prameswaran, Prof. Mahesh Tandon, Er. Mahendra Raj & many others.

The conference concluded with a panel discussion on the topic "Future of Concrete in Construction".

## ICI - TRICHY CENTRE

### Inauguration:



Indian Concrete Institute - Trichy Centre was inaugurated on 14<sup>th</sup> June 2016 at SRM Hotel,

Trichy. UltraTech Cement Ltd., hosted the event.

Er. A.P. Murugan, Regional Head (Technical Services), UltraTech Cement Ltd., welcomed the gathering. Er. R. Radhakrishnan, Secretary General, ICI, presented the past, present and future activities of ICI with slide presentation. Opening of ICI-Trichy Centre and installation of the Office Bearers was by Dr. Manamohan R. Kalgal, President, ICI. Dr. C. Natarajan, Chairman, ICI-Trichy



Centre delivered the acceptance speech. He invited suggestions from the audience for organising various activities and also insisted all the members to involve in the Centre's activities. Dr. M. Sudhakar, Secretary, ICI-Trichy Centre, detailed the roadmap of activities of Trichy Centre like Seminar, Deminar, Training Programmes, National and International Conferences, Workshop, etc., in the forthcoming days.



Er. S. Gandhimathinathan, Er. K. Kumaran, Dr. J. Karthikeyan, Er. R. Rajasekar, Er. D. Ravi, Er. A.P. Murugan and Er. C. Venkatesh were inducted as Executive Committee Members of ICI-Trichy Centre. Dr. Manamohan R. Kalgal delivered the Keynote Address and also a lecture on

“Applications of Prestressed and Precast Concrete Technology in Building Sector”. He focussed on the Principles of Prestressing, Applications of Prestressing, Prestressing Systems, Concepts of Prestressing, Design issues, and Precast Technology.



The function was felicitated by Er. Ravi, Managing Director, Techny Chemy, Trichy and Mr. V. Raja, AGM, UTCL. Er. K. Jayasankar, Vice-President (Technical Services), UltraTech Cement Ltd., detailed about the objectives, activities and achievements of UltraTech Cement. Dr. G. Dhanalakshmi, Treasurer, ICI-Trichy Centre wished the Office Bearers and thanked the experts and participants.

## ICI - SALEM CENTRE

### Technical Lecture:

A technical guest lecture was organized by ICI Salem Centre and Department of Civil Engineering, Sona College of Technology on 4<sup>th</sup> August 2016. Dr.R.Malathy, Chairman-Salem Centre welcomed the Chief Guest and the participants. Mr. CS Dharanidharan, B.Tech (NIT-Bhopal), Head/Director-Business Development and Foreign Relations, CS & Associates (P) Ltd., gave a brief lecture on “High Strength Concrete”. He elaborated on the application and need of the high strength concrete in 'Quickway' and also enumerated how Quickway will be a better solution for solving traffic congestion problems. After the lecture, the audience raised their queries with

the resource person. More than 40 members of Salem Centre and Students Chapter attended the Lecture. Er.N.Sanjay Kumar, Technical Services Manager, UltraTech Cement Ltd., co-ordinated the programme.



*Dignitaries on the Dais*



**ICI - THIRUVANANTHAPURAM CENTRE**

**Technical Seminar:**

A meeting of all the members of the Thiruvananthapuram Centre of the ICI was convened on 24<sup>th</sup> June, 2016 to condole the passing away of Mr. K.P.Pradeep, GC Member of ICI. The meeting started at 5.30pm with Er.Jose Kurian, Past President of ICI in the Chair. Er.Jose Kurian shared in moving words about his association with K.P.Pradeep. Er.Velapgy Madhu Mohan, the Chairman of the Centre moved a resolution to condole the

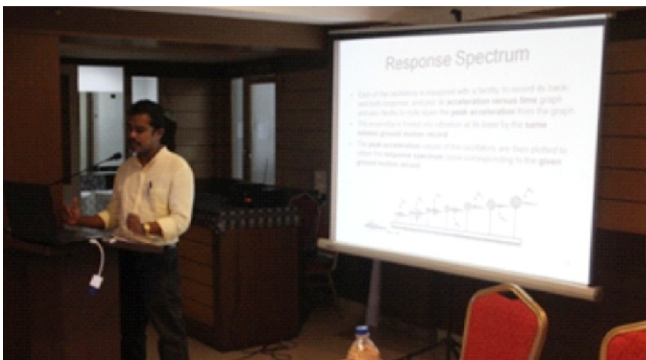
death of Mr. K.P.Pradeep. Thereafter, the members stood up in silence paying respects to the departed friend of ICI. This was followed by a technical seminar on 'Response Spectrum CURVE' by Er.Rahul Leslie, Assistant Director, Buildings Design, Kerala PWD, in honour of late Mr. K.P.Pradeep. The meeting ended with vote of thanks by Er.S.Anwar Hussain, Secretary, ICI-Thiruvananthapuram Centre.



Er.Jose Kurian sharing his association with Mr. K.P.Pradeep



Er.Velapgy Madhu Mohan passing condolence resolution



Er.Rahul Leslie



Er.S.Anwar Hussain proposing vote of thanks



**CONGRATULATIONS !!!**



Dr. Prakash Chand Jain, Life Member, Indian Concrete Institute and a Scientist with Defence Research & Development Laboratory (DRDL), Hyderabad has been inducted as Fellow of Telangana State Academy of Sciences in the field of Engineering Sciences for his marvellous contributions in the area of Rocket Structures. Dr. Jain an alumnus of IIT Roorkee, IIT Bombay and BOYSCAST (DST) fellow from Pennsylvania State University USA is an expert in the areas of Structural Optimization, Structural Dynamics and Nonlinear Structures Technologies. He has significantly contributed towards the success of various National Projects. In a recently held function, Dr. Ch.

Mohan Rao, President, Academy of Sciences conferred the Fellowship to Dr. Jain.



## DAYANANDA SAGAR COLLEGE OF ENGINEERING - BENGALURU



*Lighting of Lamp*

The Department of Civil Engineering of Dayananda Sagar College of Engineering inaugurated ICI-Students Chapter on 12<sup>th</sup> April 2016. Dr. M.U. Aswath, Chairman, ICI-Bengaluru Centre inaugurated the Chapter and briefed the students about ICI.

Mr. Shreedhar Revanker, Assistant Manager, BASF India Ltd., delivered a technical talk. About 200 students enrolled as members of ICI. The inauguration was followed by technical events like Technical Quiz, Towermaking using junk and many more.



*Dignitaries with Students Chapter Office Bearers*

## JSS ACADEMY OF TECHNICAL EDUCATION, BENGALURU

### Guest Lecture:



ICI-Students Chapter of Department of Civil Engineering organized a special guest lecture on “Placement Opportunities for Civil Engineers” during the inaugural function of ICI-Students Chapter on 6<sup>th</sup> April 2016.

The Guest Lecture was attended by students of civil engineering and the faculty. Dr. Nagabhushana, HoD, Civil welcomed the speaker and gathering. Er. D.L.Venkatesh Babu, Professor, Dept. of civil engineering introduced the speaker to the gathering.

The speaker Dr. Aswath M U, Chairman, ICI-Bengaluru Centre, enlightened the students and faculty members on the placement and employment opportunities for civil engineering graduates in different sectors. He motivated the students for continued updation in their subject, soft skills and for effective communication.

The Guest Lecture was arranged to bridge the Industry-Institution relationship. Students and faculty of civil engineering were benefited by this lecture. Vote of thanks was proposed by Mr. Shashi Kumara S.R, Asst. Professor.



## M S RAMAIAH INSTITUTE OF TECHNOLOGY - BENGALURU

### ICI - Students Chapter Inauguration:



*Dignitaries Lighting the Lamp*



*From (L to R): Dr. R. Prabhakaran, Mr. Asha Kiran, Mr. Kaushik Hajra, Dr. M.U. Aswath, Dr. N.V.R. Naidu, Mr. Neela Kalkeshwar*

In order to enhance Institution-Industry interaction and to encourage the student's activities in the Department of Civil Engineering, MSRIT, the Students Chapter of ICI was inaugurated on 11<sup>th</sup> May 2016 in the College Campus. Dr M.U. Aswath, Chairman, ICI-Bengaluru Centre was the Chief Guest. Er. Kaushik Hajra, Secretary, ICI-Bengaluru Centre was the Guest of Honor. The programme was graced by the presence of Mr. Asha Kiran (Operational Head) & Mr. Neela Kalkeshwar (Principal adviser) from

Manya Associates. Principal, MSRIT, Dr. N.V.R. Naidu presided over the function. Dr. R. Prabhakara, HoD, Civil extended a warm welcome to the Dignitaries.

The programme started with an invocation by the students. The Students Chapter at MSRIT is started with 49 active student members. There was a technical session by the Chief Guest on "Creating a Better Tomorrow". The students were advised to be goal-oriented in choosing the job to suit their skills. The Chief Guest also gave a glimpse of major companies in Civil Engineering and suggested the students to be suited in their choice of the organization which will make them specific with the nature of job.

The programme continued with the distribution of the certificates to the student members. The presidential address was given by the Principal, who added to the words of advice given by the Chief Guest and also encouraged for conducting many more programmes in association with ICI-Students Chapter. Principal also advised to conduct minimum of one such program every month for the benefit of the students. The programme ended with vote of thanks by ICI-Students Chapter faculty coordinator, Mrs. B.Suguna Rao.

## NANDHA ENGINEERING COLLEGE (Autonomous) - ERODE

### 1. ISRO Sponsored National Seminar:

ICI-Students' Chapter of Nandha Engineering College (ICI-NEC) conducted an ISRO Sponsored National Seminar on GIS Solutions for Highway Traffic Management on 30<sup>th</sup> April 2016. Shri. A. Arunachalam, Sr. Scientist, EOS, ISRO-HQ, Bengaluru inaugurated the seminar and delivered a valuable speech on "Remote Sensing and GIS Solution for Urban Planning and Infrastructure Development". In

this event, he shared many points on Geographical Information System (GIS) technologies in Highway Management and also he explained about how the satellites are working to improve Global Positioning System (GPS). The second session was carried out by Dr. K. Elangovan, Associate Professor, PSG College of Technology, Coimbatore on "Geographical Information System in

Transportation”. He explained about various GIS software available at present and how to use this software in practical applications. The third session was carried out by Dr. K. Gunasekeran, Associate Professor, Anna University, Chennai on the topic of “Study on Role of Road Environment in Accident Occurrence using GIS”. He explained the various case studies about road accidents and how to avoid accidents by using this technology. The final session was handled by Dr.E.K.Mohanraj, Dean-Civil Engineering on “Fundamentals of Remote Sensing and GIS”. He gave a brief introduction to GIS technologies in Traffic Management.



**2. Site Visit:**

Second and Third Year Civil Engineering students of Nandha Engineering College under the banner of ICI-Students Chapter undertook a site visit to CONFAIR - 2016, Mega Building Material Expo at Coimbatore on 22<sup>nd</sup> April 2016. In this Expo, new construction materials like different types of wooden and steel doors, various types of excavation equipments, fly ash bricks, various types of tiles, paints, windows, reinforcement bars, staircase models, bricks, clay jolly & wire cut bricks, lights, roofing sheets, ventilators,

solar water heater, solar indoor & outdoor lighting systems, modern & readymade kitchen, sanitary fittings etc., were displayed. The visit to expo gave in-depth knowledge on various construction materials. The radical water proofing techniques for buildings and roofs, readymade stirrups were also displayed by the companies. The students were much delighted and thanked FACEAT, FACECON and Coimbatore Civil Engineering Association for giving the opportunity to visit the Expo.



Third Year Students



Second Year Students

### 3. Faculty Development Programme:

ICI Students Chapter of Department of Civil Engineering organized a Faculty Development Programme on Modern Surveying using Total Station for Civil Engineering Faculty Members on 17<sup>th</sup> April 2016. The training was carried out by Mr. Sana Jegadeesan, Sr. Technical Specialist from Elcome Technologies Pvt. Ltd, Chennai. Total Station is a combination of an electronic theodolite and an EDM instrument. The total station is working under the concept of both Infra-Red Rays (IR) & Visual Red Laser (VRL). The advent of total station has revolutionized in the field of surveying and has found applications in a wide variety of civil

engineering jobs. After that, the faculty members learnt to measure the horizontal distance, the vertical distance and also the total area of the ground in the total station, which are necessary in the excavation work.



### RAO BAHADHUR Y.MAHABALESHWARAPPA ENGINEERING COLLEGE - BENGALURU

Rao Bahadur Y.Mahabaleshwarappa Engineering College, Department of Civil Engineering organized the one-day Seminar and Deminar on Construction materials combining with the inauguration of ICI-Students Chapter on 16<sup>th</sup> April 2016. Shri R.S Prasad, AGM Technical, Zuari Cements, Bengaluru, Shri. Shreedhar R.Revankar, Asst. Manager (Technical Services), BASF, Bengaluru, Shri Shiva Prakash Gangappa, Product Segment Manager, FOSROC, Bengaluru were the Guest of Honours. The Principal of RYMEC, Dr. Hiregoudar Yerranagoudraru, Dr.H.M Mallikarjuna, HoD, Dept. of Civil Engineering, RYMEC shared the dais with the Guests.

The event started with the invocation song and the lighting of the lamp by Dignitaries. Dr.H.M Mallikarjuna addressed the gathering followed by Dr. Hiregoudar Yerranagoudraru who offered valuable speech to the students.

Speakers covered topics on Transparent Cement and usage of Admixtures in Concrete. The students also got very good acquaintance to modern construction techniques.

The event was divided into three sessions:-

In the first session, Shri R.S Prasad enlightened the students with the tremendous information on blended cements and transparent concrete. He also presented the transparent concrete with many photographs.

Shri. Shiva Prakash Gangappa started the second session on usage of admixtures on high early strength concrete and high performance concrete.



Shri. Shreedhar R.Revankar talked on basic approach in making concrete

## RASTA - CENTER FOR ROAD TECHNOLOGY - BENGALURU

ICI-Students Chapter was inaugurated on 10<sup>th</sup> June 2016 at RASTA - Center for Road Technology, Bengaluru.

RASTA (Resource Centre for Asphalt and Soil Training Academy) is Extension & Research Center for Visvesvaraya Technological University (VTU), Belagavi. RASTA is state-of-the-art, unique initiative representing Industry-Institution partnership, bridging knowledge gap between academic learning, consultancy, training and growing industry needs with more focus on application and hands-on experience.

The inaugural function was marked by the presence of Mr. Dimitrov Krishnan, Vice President, HUB India, Volvo Construction Equipment, Dr. Ashwath M U, Chairman, I C I - B e n g a l u r u C e n t r e a n d Dr. B. R. Srinivasamurthy, Technical Advisor, RASTA Center for Road Technology, Professor Emeritus, Indian Institute of Science, Bengaluru.

The programme was hosted by Mr. Ashwin M. Joshi, Assistant professor and Staff Coordinator ICI-Students Chapter, RASTA. Function started with invocation by Ms. Vibha. N. Rao, followed by lighting of lamp by the Guests and Dignitaries.



*Dignitaries lighting the Lamp*



*Prof. B R Srinivasamurthy, Mr. Dimitrov Krishnan,  
Dr. Ashwath M U (L to R)*



*Welcome address by  
Mr. K S Aithal*

*Hosting Event by  
Mr. Ashwin M Joshi*

Mr. K. S. Aithal, Administrator - RASTA extended a warm welcome to the Guests and all the gathering on behalf of the RASTA-Centre for Road Technology. All the Dignitaries were presented with bouquet.

The inauguration was in the presence of delegates from various member institutions, students and other industry invitees. Trustees of RASTA were also present along with the management executives of Volvo Construction Equipments, Bengaluru.

Dr. M.U. Ashwath delivered a talk on "Industry-Institute Interaction and Future Civil Engineers" and functions of ICI Bengaluru Centre. He also explained about the benefits of being a member of ICI Students chapter. He insisted the student members to undergo online courses offered by ICI.

The Chief Guest Mr. Dimitrov Krishnan, and Guest of Honor Dr. B. R. Srinivasamurthy addressed the students congratulating them for getting membership in ICI-Students Chapter and encouraged them to participate in many such activities in the future. Later, membership certificates were distributed to the student members.

The occasion also witnessed felicitation of VTU - Rank holders through Mementos and certificates by the Dignitaries. RASTA had bagged Three university (VTU) level ranks in recently held 15<sup>th</sup> Convocation at VTU, Belagavi.



Honoring of Rank holders by the Dignitaries

The event ended with vote of thanks by Dr. H K Seshadri, Professor, RASTA thanking



Vote of thanks by Dr. H K Seshadri



Distribution of ICI Membership Certificates to students

everyone witnessing the gracious occasion on a special day.



Dignitaries

**S.J.C. INSTITUTE OF TECHNOLOGY - CHICKBALLAPUR**

**1. INNERVE'16:**

The Innerve'16-Inter college technical fest was organized by the Department of Civil Engineering in association with ICI student chapter on April 21<sup>st</sup> 2016. The event was conducted with 211 participants from 18 Engineering colleges across Karnataka. The department launched its own official website [www.innervesjcit.in](http://www.innervesjcit.in) in this technical event. The students were allowed to register for different technical events through official website and also on spot registration. The fest was executed with 5 technical events and 1 non-technical event. The event was sponsored by Nandi Constructions, Chickballapur, BESTO Mining India Pvt. Ltd., Bengaluru & Bentley India.

The event started at 9.00 AM with registration of the students for different technical events. The technical fest had different technical events like Terramind, Archipedia, Bridge

crair, Fastest survey and Model exhibition/Poster presentation and Non technical events like photography.

- Terramind-The terramind is a technical quiz competition conducted in three rounds.
- Archipedia-Civil Engineering drawings using AutoCad software conducted in two rounds.
- Bridge Criar-Bridge models by using the given materials.
- Fastest survey-Civil Engineering Survey conducted in two rounds.
- Model exhibition/poster presentation.

The event was conducted by Civil Engineering faculty along with student coordinators and student volunteers. The valedictory function was held at 3.00 PM in the department

seminar hall. The Chief guest for valedictory function was Dr. Ashwath M U, and other Guests were Dr. T MuniKenche Gowda, Sri. N Shiva Rama Reddy, Prof.B.Subramanya and Dr. K.N.V.Rao.

The Innerve official website was launched by the Chief Guest Dr.Ashwath M U. The event winners were appreciated with cash prizes.



*Terramind (Technical Quiz competition)*



*Fastest Survey*



*Bridge Criar (Bridge Modeling) event*



*Archipedia (AutoCad)*



*Model exhibition/paper presentation*

## 2. MANTHANA-2016:

S.J.C. Institute of Technology in association with ICI-Bengaluru Centre organized a National Conference "MANTHANA-2016" on 21<sup>st</sup> and 22<sup>nd</sup> April 2016, which aims to bring out and share innovative ideas in the field of Civil Engineering. In the conference Researchers, Academicians, Students and Industrial Experts under the same roof shared their experiences. It was focused on current and emerging trends in the field of civil engineering and to bridge the gap between theory and practical implementations. This conference was open to all UG and PG Students, Academician and the Research Scholar working in the broad area of recent advances in civil engineering.

Papers were invited on topics related to, but not limited to the following areas:

- ❑ Structural Engineering.
- ❑ Transportation Engineering.
- ❑ Environmental Engineering.
- ❑ Water Resources & Irrigation Engineering.
- ❑ Geotechnical Engineering.
- ❑ Construction Technology.
- ❑ Infrastructural Engineering.
- ❑ Advanced Surveying.
- ❑ Advanced Pre stressed Concrete Structures.

For the workshop 37 papers from 17 colleges across the state were shortlisted and presented under the categories UG, PG and Faculty. Best two papers were selected in each category and awarded First and Second cash prize.



**Dear Members,**

ICI aims at compiling Queries on GGBS with reference to its use Portland Cement Concretes for your reference. Dr. N.P. Rajamane has prepared the set of questions, which is presented below.

Members are invited to send more queries, if any, which will be reviewed and added. Finalisation, Dr. Rajamane will be giving the answers for all the queries. You may forward your queries to [ici4@airtelmail.in](mailto:ici4@airtelmail.in)

**Queries on GGBS with reference to its use Portland Cement Concretes**

- [1] When was the reported first use of GGBS as a cementitious material?
- [2] When was the first commercial use of slag-lime cement?
- [3] Differentiate between Granulated Blast-furnace slag, Granulated Blast-furnace slag and Ground Granulated Blast-furnace slag.
- [4] GBFS is said to be glassy granular material. What is the meaning of 'glassy' here?
- [5] How and how much BFS is formed in blast furnace and what is the temperature involved?
- [6] Arrange the oxides of SiO<sub>2</sub>, Fe<sub>2</sub>O<sub>3</sub>, CaO, Al<sub>2</sub>O<sub>3</sub>, MgO in GGBS in order of their contents.
- [7] What are the particle sizes of GFBS (Granulated Blast Furnace Slag)?
- [8] Why does GGBS react slower than Portland cement?
- [9] Why does GGBS make Portland cement gel denser?
- [10] How does GGBS reaction get aided by hydration of Portland cement?
- [11] Can alkali hydroxides alone without any lime (i.e., in the absence of Portland cement), cause formation of strong gel from GGBS?
- [12] Identify main factors for higher reactivity of GGBS in Portland cement?
- [13] Is there any difference in handling, storage, batching, etc., of Portland cement and GGBS, in the field?
- [14] Can GGBS be activated without any presence of Portland cement?
- [15] What is basis of selection the proportion of GGBS in Portland cement concrete?
- [16] Why an increase in coarse aggregate content is possible/desired when GGBS is used in Portland cement concrete?
- [17] When is triple blended concrete with GGBS, Portland cement, and fly ash is especially useful?
- [18] What are the effects of chemical admixtures on Portland cement concrete containing GGBS?
- [19] How does the surface characteristics of GGBS contribute to rheology of Portland cement concrete?
- [20] What is effect of GGBS on setting time of Portland cement concrete?
- [21] When and why does GGBS increase bleeding of Portland cement concrete?
- [22] Why does GGBS contribute towards higher flexural strength of Portland cement concrete?
- [23] What is effect of GGBS on modulus of elasticity of Portland cement concrete?
- [24] How does GGBS affect creep and shrinkage of Portland cement concrete?
- [25] What is effect of GGBS on curing of Portland cement concrete?
- [26] Why does GGBS addition to Portland cement concrete causes sometimes appearance of

green-blue colour?

- [27] What is effect of GGBS on heat of hydration of Portland cement concrete?
- [28] What is effect of GGBS on permeability of Portland cement concrete?
- [29] What is effect of GGBS on sulphate resistance of Portland cement concrete?
- [30] What is effect of GGBS on alkali-silica reaction of Portland cement concrete?
- [31] What is effect of GGBS on corrosion of steel reinforcement in Portland cement concrete?
- [32] What are the advantages of addition of GGBS to Portland cement concrete produced in RMC plants?
- [33] How is GGBS useful in accelerated curing of Portland cement concrete?
- [34] How is GGBS useful in no-slump concrete mixes of Portland cement concrete?
- [35] How is GGBS useful in mortars and grouts made of Portland cement concrete?
- [36] What is effect of GGBS on alkali-silica reaction of Portland cement concrete?
- [37] What is effect of GGBS on Inter Facial Transition Zone (ITZ) of Portland cement concrete?
- [38] Compare specific gravities (Relative densities) of GGBS, fly ash and Portland cement?
- [39] What is the fineness of GGBS that is insufficient to undergo setting on its own in presence of water and how this can be activated to become a binder?
- [40] What is surface nature of GGBS particles?
- [41] What is minimum surface area of GGBS for use in Portland cement concrete?
- [42] What is minimum glass content of GGBS for use in Portland cement concrete?
- [43] How is the glassiness of GGBS is measured using XRD as per BS:6696?
- [44] How much of BF slag is produced in India?
- [45] Does GGBS cause bleeding in Portland cement concretes?
- [46] Does GGBS cause segregation in Portland cement concretes?
- [47] Does GGBS cause reduced strength in Portland cement concretes?
- [48] Does GGBS cause delayed setting in Portland cement concretes?
- [49] Is it necessary delay formwork removal when GGBS is added to Portland cement concretes?
- [50] Is there any limitation on strength of GGBS containing Portland cement concretes?
- [51] Is there any change in Codal provisions on concrete strength acceptance criterion of Portland cement concretes when GGBS is added?
- [52] Is there any change in bond strength of Portland cement concretes with steel when GGBS is added?
- [53] Is there any change in structural designs when Portland cement concrete contains GGBS?
- [54] Can Portland cement concretes containing GGBS be used in road construction?
- [55] Can Portland cement concretes containing GGBS be pumped?
- [56] What are the situations when GGBS containing Portland cement concretes can be avoided?
- [57] Is it possible to produce Portland cement concretes with GGBS content more than 70%?
- [58] Is it possible to produce concretes with binder being 100% GGBS being?
- [59] Is there any increased carbonation in GGBS containing Portland cement concretes?

- [60] Why should the published test data on accelerated carbonation tests on FACs be viewed with great caution?
- [61] What is Cementing Efficiency Factor 'k' of GGBS in Portland cement concretes?
- [62] How Cementing Efficiency Factor 'k' of GGBS in Portland cement concretes can be used in concrete mix designs?
- [63] Can we add GGBS to any existing Portland cement concrete mixes without any changes in the proportions?
- [64] At equal strength at a given age, will water-binder ratios of Portland cement concretes with and without GGBS remain same?
- [65] If GGBS addition to a Portland cement concrete reduces the strength, what measures can be taken to restore the strength level?
- [66] What are preferable properties of Portland cement when GGBS is used as part of the binder in concretes?
- [67] How to get the highest strength when GGBS is used as part of the binder in concretes?
- [68] If GGBS addition to a Portland cement concrete, is there any change in relationship between strength related properties such as compressive strength ( $f_c$ ), tensile strength ( $f_t$ ), flexural strength ( $f_{ft}$ ), and modulus of elasticity ( $E$ )?
- [69] If GGBS addition to a Portland cement concrete, is there any change in alkalinity level of concrete from corrosion of steel point of view?
- [70] If GGBS addition to a Portland cement concrete, is there any change in pH level of concrete?
- [71] If GGBS addition to a Portland cement concrete, why is there is reduction in pH level of concrete?
- [72] If GGBS addition to a Portland cement concrete, it is found that there is reduction in pH level of pore solution of concrete. Is this alarming?
- [73] What are mineralogical composition of GGBS?
- [74] As GGBS comes from blast furnace where steel (pig iron) is produced, will there be any residual minor content of iron itself in GGBS?
- [75] If GGBS contains residual iron particles, how it would influence the properties of Portland cement concrete?
- [76] What are long term effects of GGBS addition to a Portland cement concrete?
- [77] What are the expected changes in properties of GGBS when it is stored over a long period?
- [78] Suggest a concrete mix design procedure when GGBS is used in Portland cement concrete.
- [79] Is there change self-weight (density) of concrete when GGBS is used in Portland cement concrete?
- [80] Is there change in appearance of concrete when GGBS is used in Portland cement concrete?
- [81] What are main quality test parameters for GGBS in field and in lab?
- [82] Are there any crystalline phases of minerals in GGBS?
- [83] Is Blaine's air permeability method applicable to GGBS?
- [84] Is sedimentation method of particle size measurement applicable to GGBS?
- [85] How fine is GGBS, compared to FA, Portland cement and silica fume?
- [86] How FA and GGBS complement each other in concrete?

- [87] What are the main chemical attributes of GGBS that are useful for cement concretes?
- [88] What are the main physical attributes of GGBS that are useful for cement concretes?
- [89] Is there any optimum GGBS content for concrete?
- [90] Are mix proportions of concretes with and without GGBS different?
- [91] Is it possible to just arbitrarily add GGBS in any cement concrete without tests?
- [92] Is GGBS concrete prone to more plastic shrinkage cracks?
- [93] When should the curing of GGBS concrete start after casting?
- [94] At same water-binder ratio, how strengths of Portland cement concretes with and without GGBS differ at different ages?
- [95] At what age, strength of GGBS concrete can be equal to that of Portland cement concrete when compared at same water-binder ratios?
- [96] What are the conditions under which GGBS does not contribute to improve performance of Portland cement concretes?
- [97] Will there be unreacted GGBS in concrete?
- [98] Does IS: 456-2000 recognise and recommend GGBS in concretes?
- [99] What is the maximum percent of GGBS allowed in manufacture of Portland Slag Cement (PSC) as per BIS?
- [100] Are there any difficulties and special precautions required in handling of GGBS?
- [101] Is GGBS a health hazard?
- [102] Is porosity of GGBC concrete different from conventional Portland cement concrete?
- [103] Does strength of GGBC concrete reduce over a long period?
- [104] Reduced water-cement ratio in Portland cement concrete can also improve microstructure and thereby durability properties. Then what is necessity of adding GGBS to Portland cement concrete?
- [105] What are ecological advantages of usage of GGBS in concrete?
- [106] Is there any need for change in construction practice when GGBS is used in concrete?
- [107] What is the “Embodied Energy” content of GGBS as compared to that of Portland cement?
- [108] What is the “Embodied Carbon Dioxide Emission” content of GGBS as compared to that of Portland cement?
- [109] How NDT parameters such as ultrasonic pulse velocity, rebound hammer values, electrical resistivity, of GGBS concrete are different from Portland cement concrete?
- [110] Is acid resistances of GGBS concrete are different from Portland cement concrete?

*Compiled by*

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