



# The Indian Engineer

...this is the silence of the world: birds shifting weight on branches, the branches squeaking against other twigs, the deer whooshing through the woods....It's a silence where you can hear your blood in your chest, if you choose to listen." – RITA DOVE

"Science is about understanding Nature." Look deep into nature, and then you will understand everything better. – ALBERT EINSTEIN

NEWSLETTER OF THE ENGINEERING COUNCIL OF INDIA

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The Institute of Marine Engineers (India)

**Shri P. N. Shali**

Director

## From the Chairman's Desk


At the outset, I wish a very Happy and prosperous New Year to all office bearers and members of our member associations and the members of Board of Governors of ECI.

The 10th National Conference which was organized by ECI on November 29, 2012 at New Delhi on the Theme: **Technological Innovations in India –Retrospect & Prospect**, was a great success. More than 200 delegates from all over the country participated. We were fortunate to have two eminent persons in the opening session - Dr. K. Kasturirangan, Member, Planning Commission (S & T) as the Chief Guest and Dr. Anil Kakodkar, Homi Bhabha Chair Professor BARC, and former Chairman, Atomic Energy Commission, as the Guest of Honour. The proceedings of the conference will be compiled and circulated in due course. I must thank all member associations for supporting this flagship event of ECI.



ECI has been following up continuously the draft Engineers Bill with the Ministry of HRD. It seemed that the ministry was reluctant to process the Bill for submission to the Parliament as a number of Bills of the ministry were pending in the Parliament. Recently, however, in reply to a Parliament Question in September 2012, the Minister of State for Human Resource Development (Dr. D. Purandeswari) had stated that: 'A Draft Engineering Bill 2009 was circulated by this ministry to different ministries/department of the Government of India including Ministry of Finance and Planning Commission for their comments/views. On the basis of these, it has been decided to close the issue.' I met the Secretary Ministry of HRD, and was told that this view was taken at the level of the then Minister of HRD. A letter was sent to the Secretary, pointing out that the statement made in the reply did not reflect the consensus in the meeting taken by then Special Secretary, Ministry of HRD, in February 2011, where most ministries had supported the bill. In the meanwhile the Minister of HRD has changed. We have sought an appointment with the new Minister of HRD and it is proposed to take a delegation to the Minister and discuss the matter with him.

In the meeting of the Board of Governors of ECI on November 29, 2012, the members strongly felt that the matter needs to be taken up urgently and all member associations need to support these efforts.

  
(Uddesh Kohli)

## News Corner

Shri Mahendr Raj had been invited by the "Société Française des Architectes" to deliver a lecture in Paris on December 7, 2012 on the projects completed by him during the past sixty years of his professional career. He delivered the prestigious lecture. He is the vice chairman of Engineering Council of India.

### Companies Need Innovators, not just engineers

Escorts Agri Machinery is looking for outstanding professionals for its knowledge management Centre (R&D) to transform Indian farm mechanization. So, the company has issued an advertisement as: "We are not hiring engineers. We are hiring innovators". The advertisement is an indicator that companies are not looking just at engineers, who are available in plenty, but at people who can innovate. Indian companies have started to focus on creating more intellectual properties (IP) for which innovators are required. Multi national IT companies are already using India as an innovation hub. Wake up engineers and become innovators (via email).

### India Emerging as a Major Automobile Market

The automotive industry, world over, is witnessing a rapid transformation. India is today emerging as a major automobile market. Apart from the local manufacturers, every major automobile manufacturer across the world is eyeing to grab their share of the market in India. The free market promises to usher in an era of growth for this sector (ASI).

## Forthcoming Programmes of Engineering Council of India & Its Member Associations

### Engineering Council of India

**EDP-4 on Project Management for Engineers**, February 18-22, 2013, Tagore Hall, Scope Convention Centre, Core 8, SCOPE, 7 Institutional Area, Lodhi Road, New Delhi.

**Foundation Day & Eminent Engineers Award Function** on April 4, 2012 at New Delhi. For details on these programmes send a mail to: [eci@ecindia.org](mailto:eci@ecindia.org), [director@ecindia.org](mailto:director@ecindia.org), or, visit: [www.ecindia.org](http://www.ecindia.org)

### Concrete Institute of India

**ICI-IWC 2013**, December 12-15, 2013, Hyderabad.

**ICI, International Conference on Trends and Challenges in Concrete Structures**, December 19-21, 2013, Ghaziabad, UP, NCR. For details send a mail to: [ici3@vsnl.in](mailto:ici3@vsnl.in).

**Construction & Demolition (C&D) Waste Recycling** during 28th Feb – 1st March, 2013 at Vigyan Bhawan, New Delhi. For Details send a mail to : [ici3@vsnl.in](mailto:ici3@vsnl.in)

**Innovations in Concrete Construction**, March 5-8, 2013, New Delhi.

### Indian Society of Non Destructive Testing

**14th APCNDT, November, 2013 at Mumbai**

ISNT has been entrusted with the responsibility of organizing the 4th Asia Pacific Conference on NDT in November, 2013 at Mumbai. It will provide an excellent platform to the NDT fraternity for sharing technology, knowledge, skills and experience. For details send a mail : [isnttheadoffice@gmail.com](mailto:isnttheadoffice@gmail.com) or, visit : [www.isnt.org.in](http://www.isnt.org.in).

### Indian Society For Trenchless Technology

No Dig India Show 2013 is proposed to be held in March, 2013. For details send a mail to: [indstt@indstt.org](mailto:indstt@indstt.org), [info@indstt.org](mailto:info@indstt.org), [indstt@indstt.com](mailto:indstt@indstt.com), or visit website : [www.indianodig.com](http://www.indianodig.com).

### Broadcast Engineering Society -BES

**EXPO 2013 & 19th International Conference and Exhibition** on Terrestrial and Satellite Broadcasting, 29-31 January 2013, in Hall No. 12 and 12A, Pragati Maidan, New Delhi. For details send a mail to : [bes@besindia.com](mailto:bes@besindia.com) or visit: [www.besindia.com](http://www.besindia.com).

### Flash

Mining Engineers Association of India has joined Engineering Council of India as its Permanent Member.

### Think It Over

"The pessimist sees difficulty in every opportunity. The optimist sees the opportunity in every difficulty." - **Winston Churchill**

ECI wishes readers and their families a happy and prosperous New Year

## From Editor's Desk

### Need for Legislation for Registration of Engineers



I have written on this subject in September, 2012 issue of the Indian Engineer. This was from the historical perspective. We all know that technology is visualized to play a key role in sustainable socio-economic development. Efficient use of resources—physical, financial and human – will be a determining factor in raising the rate of growth. Engineers and technologists are expected to take decisions with due professional integrity. It has to be ensured that activities of engineering and technology are performed by competent persons. Recognition of competence of engineers and technologists on the basis of a degree obtained at one point in time is not enough.

A mechanism has to be developed and installed for imparting relevant continuing professional development and integrating the same with the process of certification of professional decisions with due honesty and integrity. It is also important that engineers and technologists take professional decisions with due honesty and integrity. For this purpose, it is necessary to properly regulate the practice of engineering by an Act of Parliament in order to protect public interest and ensure safety and welfare of the people.

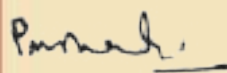
The registration of practicing engineers also becomes necessary in order to enable Indian engineers to take part effectively in trade in engineering services in the WTO environment. Many countries have set up registration and licensing processes and Indian engineers cannot practice in those countries unless they are registered there. On the other hand, engineers from those countries are free to practice in India as we do not have any statutory registration system. As a result, Indian engineers are at great disadvantage.

In most of these countries, however, the registration of only the practicing engineers is mandatory. Only these engineers are authorized to certify drawing/process/system etc, so as take responsibility and are subject to accountability. India may follow the same system. Registration should be mandatory for practising engineers only; while for all other engineers, it should be voluntary.

The need for having statutory body for engineers has been felt by several states. Gujarat has already promulgated its Engineers Act, called Gujarat Professional Civil Engineers Act, 2006 which provides for the registration of professional civil engineers. In Maharashtra a draft Engineers Bill called Professional Engineers Act, is under the active consideration of the State Government. More states are likely to follow. It will be a piecemeal approach, not covering all professional disciplines of engineers, setting varying requirements and leading to conflicting situation. What is needed is a central legislation which may cover the entire country.

While professions such as Medical, Legal, Architect, Chartered Accountants, Dentist, Company Secretary, etc. have legal status and statutory bodies, which register/ license the practice by the members of the profession, no such body exists for the engineering profession. Why?

For the regulation of engineering profession, therefore, a Statutory Authority needs to be set up under an Act of Parliament which will undertake the registration of practicing engineers, lay down specifications for competency in professional practice and shall have the mandate for recognition of this competency through a process of registration and renewal keeping in view the need for Continuous Professional Development (CPD).

  
(P.N. Shali)

## Eminent Indian Engineer : Shri A.C. Wadhawan

Shri A.C. Wadhawan contributed significantly to the development of mining & metallurgical industry in India. The climbing to the topmost slot in the metallurgical arena both nationally and internationally has seen Shri Wadhawan assuming various professional roles. After a short stint with the Bum and Company Limited (Martin Bum Group), he joined Heavy Engineering Corporation Limited, Ranchi, and served there for a period of about two years. Subsequently, he joined Mahindra Ugine Steel Company Limited after his stint in France, and continued there till 1973 before joining Hindustan Zinc Limited (HZL). The shop floor experience in Mahindra Ugine apparently not only contributed to his rich practical experience in the metallurgical field, but also rendered him as a well tempered human entity. Shri Wadhawan joined HZL as Dy GM (Smelter) in December 1973 followed by Director (smelting operations) in May 1977. He took over as the CMD of HZL in November 1985, a position in which he continued until his retirement on January 31, 1996. It will be seen that in the Indian context, Shri Wadhawan was perhaps amongst one of the very few technocrats to have assumed the onerous higher responsibility as Director and then as CMD of country's premier non-ferrous mining and metallurgical industry at a young age. During his long association with HZL, Shri Wadhawan through the sheer spirit of entrepreneurship innovative skills, and ceaseless efforts at building a confidence through proven performance, provided a remarkable quality of leadership, under which HZL had the distinction of completing its most ambitious mining cum metallurgical projects namely Rampura Agucha mining and Chanderiya smelter projects without any major cost and time over runs, which changed the lead-zinc scenario in the country; and it also put India on the world map. The success storey of Rampura Agucha mines and Chanderiya zinc smelter projects were used as a case study by the government of India on successful implementation of complex projects. This proved beyond doubt the project management and leadership qualities of Shri Wadhawan. Under his leadership, India got a new imperial smelting technology for lead - zinc smelting. The advantage of this technology has been that it is based on composite lead - zinc ore and is energy efficient for the production of lead & zinc metals. He has distinguished himself as an active metallurgist for over five decades and continues to be involved with the profession.

The worst financial crisis ever faced by the company in the wake of introduction of policy of liberalization was very effectively tackled under his leadership through adoption of some drastic as well as tactical measures ensuring a continuous good track record of the company. He was also closely associated with the non ferrous metals like copper, aluminum, tungsten etc. Under his guidance a process was developed to recover Nickel from Chromite over burden.

### Positions Held

#### Science & Technology Related

Shri Wadhawan is actively involved in the metallurgical profession through various institutions & research centres. He is the Chairman of Research Advisory Council of Jawaharlal Nehru Aluminum Research Development and Design Centre, Nagpur, Ministry of Mines, Government of India and also on its Governing Council. He has been associated with other bodies like Vidya Bhawan Society, Tata Research Design and Development Centre, Poly Metallic Nodules Programme of the Department of Ocean Development. He is at present Co-Chairman Recruitment and Assessment Board of CSIR, Member of Executive Board of Indian School of Mines University. He was also associated with the National Metallurgical Laboratory, Regional Research Institute, Bhopal and CECRI, all CSIR laboratories, for many years. He was a Member of the Governing Council of the Non-Ferrous Materials Technological Development Centre, Ministry of Mines, Hyderabad.

#### Corporate Positions

Mr Wadhawan is at present on the Boards of Tata Metallicks, Reliance



Cellulose Products Ltd and Rajasthan Mines & Minerals Ltd. He is the Chairman of Treinsweigh ( India ) Ltd. In view of his considerable experience in managing a large public sector enterprise for over two decades and his long association with the public sector, as the Vice Chairman and the Chairman of SCOPE, and a member on the various PSEs boards, the government of India appointed Mr. Wadhawan, Member, Public Enterprises Selection Bard (PESB) in July 1996. This Board recommends the selection of chairmen, managing directors and directors of all central government public enterprises to the government of India. He eventually took over as Chairman of this high level board and completed his tenure in July 1999. He was also on the Boards of Public Sector Enterprises like Bharat Heavy Electrical Ltd. (BHEL), Hindustan Copper Limited, Indian Rare Earths Ltd., and MECON. He was Chairman of the Audit Committee and Shareholders' Grievance Committee of the Jindal Poly Films Ltd., Chairman of the Audit Committee Hindustan Zinc. Ltd., Udaipur. He is also associated with the Reliance Cellulose Products Ltd.

#### Professional Positions

He is a member of National Council, the Indian Institute of Metals. He is a Fellow of the Indian National Academy of Engineering. He has served as the President of the Indian Institute of Metals during, 1992 – 93. He is also an Honorary Member of IIM. He is the founder of Udaipur & Chittorgarh Chapters of the Institute of Metals .

#### International Positions

Shri Wadhawan was a member of the Indian team for the Indo-USSR Non-ferrous Working Group Meeting held at Moscow in 1978, a member of the Indian delegation to the Metal Trades Committee of the International Labour Organization (ILO) in 1983. He was the vice chairman of International Zinc Association, Asia Pacific Region, in 1995-96, a member of the Advisory Panel of International Lead Zinc Study Group, London for over a decade (1985-86) besides representing India on this world body since 1985. In 1985 Shri Wadhawan led the Indian delegation to the International Lead & Zinc Study Group (ILZSG), London . He was elected as one of the twelve senior international experts on the Industry Advisory Panel of ILZSG, London in 1986, 1990 and 1992. He has been a member of International Association for Energy Economics USA.

#### Awards

The professional knowledge, managerial skill, administrative ability and the capability to maintain harmonious industrial relation earned Shri Wadhawan many distinctions and awards. The most notable amongst many of them includes Bralco Gold Medal by IIM in 1988 for his significant contribution to the development of non-ferrous metal industries, Vikas Shree Award in 1991 by the All India Socio Economic Forum, Bharat Udyog Award in 1992 by the Industrial Exhibition Committee, Silver Award by the Institute of Marketing, in 1992, Rajiv Gandhi Excellence award in 1992 for his contribution to the Public Sector given by the then Finance Minister, Dr. Manmohan Singh, Honorary Membership was conferred on him in 1993 by IIM in recognition of his service to the metallurgical profession, Tata Gold Medal in 1994 for his contribution to metallurgical industry, and Platinum Medal in 1998 - the highest award of IIM - for his outstanding contribution to the metallurgical profession. Shri Wadhawan has been honored by the IIT Kharagpur as a Distinguished Alumnus in 2005. He was honored with Life Time Achievement Award in 2010 by the Ministry of Steel, Government of India along with a cash prize of Rs 2,00,000/- and a Scroll of Honour.

Shri A. C. Wadhawan was on guest faculty of top management schools like Indian Institute of Management, Lucknow, Management Development Institute, Gurgaon, and National Institute of Financial Management, Faridabad, etc. He received B.Tech in Metallurgical Engineering from the Indian Institute of Technology, Kharagpur in 1962 followed by Diploma in Steel Making and Processing of Alloy Steels from Association Pour L. Organisation Des Stages En France (ASTEF). Shri Wadhawan was born on January 27, 1938 at New Delhi. He completed his BSc from the Delhi University .

## View Point

### Common Entrance Test for Engineering Students is an innovative move towards reform of engineering education - P.N. Shali

The decision of the union human resource development ministry for replacing the IIT Joint Entrance Examination (JEE) and the All India Engineering Entrance Examination (AIEEE) with a common aptitude-cum-advance knowledge test by 2013 is an innovative move. The two examinations are the most important for engineering aspirants in the country. While JEE determines admission to the 15 premier IITs, the AIEEE secures admission to 30 National Institutes of Technology and some others institutes. There are, however, number of other examinations that one must take to seek admission to those colleges not covered by the JEE and AIEEE. As a result, an engineering aspirant invariably ends up taking three to five entrance tests during admission season. All engineering colleges in the country should come under the purview of this common entrance test for engineering education. The states should also accept this. All private colleges should also accept

this one common test for entrance to the engineering colleges in the country. Then only the relief will come to the students who are invariably over burdened because the present multiple entrance examinations is creating enormous stress for the students. The seven national conventions that the Engineering Council of India has held on the theme: reform of engineering education for better employability of engineers since 2006 in the different parts of the country have unanimously recommended one common entrance test for engineers which also assesses the aptitude for engineering in a student. This common entrance test for admission for engineering students fulfills this recommendation partially. Partially because it still maintains some difference between IITs and NITs and it is not yet applicable to the private engineering colleges and the colleges in the state sector. It would meet fully the requirement if this difference is not there and all the engineering colleges in the country accept this test for admission. Nevertheless, it is an innovative first step towards reform of engineering education and many more such steps have to be taken.

## Letters to the Editor

Dear Sir,

Read the news letter for Sept. 2012. As Hon'ble Director has said, "if some institution of engineers forcefully conveys to the ministry of HRD that there is no need for the Bill since what the Bill intends to do is already being done by that institution, it is far from the truth". Yes it is right. Actually I feel that this opposition from some institution of engineers may come out of fear that the said some institution of engineers may lose their importance after the Engineers Act, but I feel that there is no point in that fear as they (some institution of engineers) will not lose the importance. Every institution has its own importance, and it will remain as it is, whatever may be the case. In fact I feel that after enactment of the Engineers Act, said some institution of engineers will get added importance, benefit and advantage. The some institution of engineers must be sure of this and they must throw away the fear. Due to the absence of Engineers Act in our country, every engineer (especially practising civil Engineer in all civil engineering related fields) is professionally harassed each & every day, and it is increasing day-by-day. Engineers Act is must without single day's delay.

Thanking you,

Yours faithfully,

**Priyadarshan A.Dixit**

Dear Sir,

This is with reference to your e-mail on reform of engineering education. This is a very important initiative by Engineering Council of India considering the increase in the number of engineers graduating year - after - year and decrease in their quality. The companies are forced to spend a lot of time and resources in improving their skills to suit their requirement. As most of the theoretical knowledge imparted in the college is not useful in the job, it can be restricted to basics, which are essential for the particular discipline. Advanced theoretical knowledge is required only for those involved in research work. Interaction of the students with the specific industry in the final year is required for him/her to understand the application part of the subject. The project work should be done in association with the industry. The development of managerial skills should be given more importance in the final year. Most of the fresh graduates are found to be taking more time in acquiring these skills after joining the industry. More emphasis should be given to application rather than theory in the examinations also. Nevertheless, industry can not expect to completely get rid of the training of fresh graduates joining them. These are some of my thoughts, which I like to share with you. Thank you very much for the opportunity given to me.

With regards

Your sincerely

**J Ravindranath**

DGM (Mkt-Exports), Salem Steel Plant

## Appointments

### Mr. Subhash C. Mehrotra

During the 9th Annual General Meeting of Indian Association of Structural Engineers, Mr. Subhash C. Mehrotra was elected as the President of the association for the term 2012-14. Mr. Subhash C. Mehrotra did his Post-Graduation in structural engineering from I.I.T., Delhi. He is having 40 years experience, which includes structural designs for commercial & residential multistory buildings, malls, industrial structures, hospitals and public infrastructures including 600 tall buildings and 30 air terminal buildings.



### Dr. M. Balasubramanian

He assumes office as Vice-Chancellor, Karpagam University,

Coimbatore. Dr. M. Balasubramanian (LM . 7587) graduated from Indian Institute of Technology, Kharagpur and Ph.D. from Indian Institute of Agricultural Research, New Delhi, served the TNAU in various capacities.

### Dr. S D Kulkarni

Fellow ISAE and Project Director, Agro Produce Processing Division of Central Institute of Agricultural Engineering has been nominated as a Member of International Editorial Board for Scientific Journal "Agricultural Engineering" being brought out from Faculty of Agriculture Institute of Agricultural Engineering, Nemanjina 6, 11080 Belgrade - Zemun, SERBIA. He has also been nominated as one of the advisor to Madhya Pradesh Vidyay Sabha, Bhopal.

*Our Congratulations*

## News from the Member Associations

### Association of Consulting Civil Engineers (India), ACCE (I)

ACCE(I) Mangalore Centre is organizing a two-day convention and consultants colloquium on innovative infrastructure for incredible India during January 11-12, 2013 at Mangalore. This is a programme wherein the awards will be given for achieving excellence in various avenues of construction at the national level. A national conference on steel structure is being organized by the Mysore Centre of the ACCE(I) during April 26-27, 2013 at Mysore, Karnataka. For details send a mail to: admin@accehq.net, or, visit : WWW.accehq.net.

### Broadcast Engineering Society (India) (BES)

BES EXPO 2013 and the 19th International Conference and Exhibition on Terrestrial and Satellite Broadcasting, will be held during January 29-31, 2013 at New Delhi. For details visit: www.besindia.com or send a mail to: bes@besindia.com

### Computer Society of India (CSI)

CSI organized a conference on Communication Technologies & its Impact on Next Generation Computing (CTNGC-2012) on October 20, 2012 at I.T.S.–Management & IT Institute Mohan Nagar, Ghaziabad. It was very well attended. CSI Kolkata Chapter organized third International Conference on Emerging Applications of Information Technology (EAIT 2012) on November 29 - December 1, at Kolkata. It was also very well attended by both Indian and foreign delegates. The 47th Annual National Convention of CSI (CSI 2012) was organized at Kolkata during December 1-2, 2012. The 2nd International Conference on PDG Computing [PDGC 2012], Technically CSI Special Interest Group on Cyber Forensics, was organised December 6-8, 2012 at Jaypee University of Information Technology, Waknaghat- Solan (HP). An International Conference on Management of Data (COMAD-2012) was organized jointly by the Pune Chapter and CSI Division II on December 14-16, 2012 at Pune. All these programmes were very well attended.

### Consultancy Development Centre (CDC)

Continuing with its skill development programmes, CDC organized a certificate programme in technical consulting during October 6-December 30, 2012 at New Delhi. CDC has emerged as a leading institute on developing consultancy services in the country.

### Consulting Engineers Association of India (CEAI)

CEAI organized an International Seminar on “Transport Infrastructure 2025 – Opportunities and Challenges” covering roads, railways and metros, airports, ports, and Inland water transport during December 12- 13, 2012 at New Delhi. Key issues - structured in five themes focused on opportunities as well as challenges considering year 2025 as the horizon – were presented and discussed. Mr Brijeshwar Singh, former Chairman, NHAI, was the Chief Guest and delivered the inaugural address. During the Inaugural Session, CEAI National Awards were also presented. At the end of the seminar, Valedictory Session was held under the Chairmanship of Mr K K Kapila, CMD, ICT Pvt Ltd. Other members of the session were Dr S Chatterjee, Mr Mahendra Raj, Mr Somenath Ghosh and Maj SJM Jafri. About 200 participants from India and abroad attended the seminar.

### Construction Industry Development Council (CIDC)

The Ministry of Land, Infrastructure, Transport, Planning Commission, Government of India, and CIDC organized the 2nd Indo-Japan forum on October 30, 2012 in New Delhi. An international conference & exhibition, supported by the Planning Commission, is being organized during January 30-31 and February 1, 2013 at New Delhi. The event will focus on implementation challenges and way forward for construction and infrastructure during the 12th Five Year Plan. For details of these programmes, visit www.cidc.in or send a mail to cidc@cidc.in.

### Indian Association of Structural Engineers (IAStructE)

IAStructE was conceptualized and constituted in the year 2002 by a group of senior professional structural engineers from all regions of

the country as a national body of structural engineers with the objective to cater to the overall professional needs of structural engineers in India. IAStructE strives to make available to the government, public sector and private sector a credible source of well qualified and experienced structural engineers. A nationwide database of S.E. has been compiled and is being constantly updated. IAStructE is expanding fast to include in its fold structural engineers from all over India.

### Indian Building Congress (IBC)

IBC is organizing programmes on safety aspects in construction, scaffolding and shuttering in building construction, and mechanization in building construction. Specific date and duration of above programmes will be intimated in shortly.

### Indian Society of Trenchless Technology

A national workshop on Trenchless Technology was conducted jointly with Periyar Maniammai University, Thanjavur, Tamil Nadu on 23rd and 24th November, 2012. About 500 delegates from all over India participated in the workshop from both the industry and academia. The workshop delved on various important issues concerning the application of Trenchless Technology for Urban applications.

### Indian Geotechnical Society (IGS)

The 34th IGS Annual Lecture 2012 was delivered by Professor B.R. Srinivasa Murthy, Professor Emeritus, IISc, Bangalore at IGC-2012 held during December 13-15, 2012 at New Delhi. The IGC-2012 and Terzaghi Oration, both prestigious events in the IGS calendar, are being organized by the IGS Delhi Chapter. Further, under the recent MOU between IGS and Korean Geotechnical Society (KGS), IGS is planning to have a one day workshop on "Urban Geotechnical Engineering" during IGC-12 at Delhi. A team of experts led by the President of KGS will be contributing in this workshop.

### Indian Institute of Industrial Engineering (IIIE)

The 54th IIIE National Convention and International Conference on the theme: “Paradigms for Global Challenges & Opportunities-Vision 2025”, was organized by the IIIE, Bangalore Chapter, during October 29-31, 2012 at Nimhans Convention Centre, Bangalore. The event was very well attended both by the industry and the academia. The 1st International Conference on the Best Practices in Supply Chain Management (BPSCM-2012) was held during November 22-23, 2012 at Bhubaneswar, Odisha. This conference was also very well attended.

### Indian Institution of Plant Engineers (IIPE)

The Institution organized a Seminar Titled “Bulk Material Handling – Challenges & Opportunities, on November 29-30, 2012 at New Delhi. In this two days seminar, prominent faculty members like Prof Shri V K Agrawal, Member of the faculty at IIT, Delhi; Shri Y P Chawla, Advisor, JERC; Lt Gen V K Dhir, PVSM, AVSM (Retd), Ex-DG, EME; Dr S B Saraswat, Associate Proj. Dir, Danieli-Corus, Netherlands; Shri K K Singh, Shri B Goswami, AGM, NTPC, Shri George Verghese, Director, Desein Indure Gp; Mr Mohd. Abulqasim, Sr. Manager, Desein Indure Group; Shri Mohan Hirani, Ex-GM, NTPC, Mohd among many others participated. The Souvenir on “Bulk Material Handling – Challenges & Opportunities”, was also released on the occasion. Shri B Goswami, AGM, NTPC, shared a success story with participants. IIPE awarded him for this success story. A cultural program was organized, on 29th November, 2012 under the able supervision of Shri Satish Bahadur, wherein Shri P N Shali, Director, ECI was also present.



### Indian Concrete Institute (ICI)

ICI and Central Public Works Department are jointly organising a workshop on "Construction & Demolition (C&D) Waste Recycling" during 28th Feb – 1st March, 2013 at Vigyan Bhawan, New Delhi. Construction and Demolition (C&D) Waste is a major waste stream, the quantum of which is increasing as a result of increasing construction, maintenance, retrofitting and demolition activities in India. It is estimated that the construction industry in India generates about 10-12 million tons of waste annually. The waste generation in Delhi is estimated to be around 5000 tons per day. This creates huge challenges in terms of space for disposal, unauthorised dumping, mixing with biodegradable waste, etc. Even though there is high potential for large-scale recycling of this waste material stream, production of recycled aggregates with properties comparable to natural aggregate, recovered from C&D waste is currently at very low level in India. This is an excellent opportunity to gain insight into the national and international expertise and experience in the field of C&D waste recycling. For details about the workshop please write to: Shri Gaurav Gupta, Occasions, LGF, E-19, Sushant Arcade, Sushant Lok – 1, Gurgaon – 122009 Email : Gaurav@theoccasions.in, Tel.: +91-9811826651, 0124-4000880

### Indian Society of Agricultural Engineers (ISAE)

The visibility of the society under its President, Dr. Mayande has grown beyond the national boundaries; and many overseas engineers are likely to join ISAE, which will help ISAE inter alia for improving the rating of ISAE's publication with quality papers, agricultural engineering education and over all improvement in the R&D.

### Indian Society of Non Destructive Testing (ISNT)

A MOU with the International Non-Destructive Societies (ASNT) on topics of Science & Technology, exchange of information related to conduct of ASNT examinations level-II in India, pre-conference activities for organizing the 14th APCNDT in 2013, is contemplated to be signed in due course. ISNT's training methodologies, faculty and effectiveness in conducting certification programme, have been widely appreciated by the ASNT. The inclusion of ISNT publications in the ASNT catalogue and accreditation of ISNT for ASNT Level-I & II courses are also being favorably considered by the ASNT.

### Indian Institute of Bridge Engineers (IIBEs)

An international seminar, co-sponsored by the Ministry of Road Transport and others, was organized by the IIBEs DSC on Pre Engineering and Quick launch Projects during November 2-4, 2012 at Vigyan Bhawan, New Delhi. The seminar was very well attended by both the industry and the academia.

### Indian National Group of the International Association for Bridge & Structural Engineering (INGIABSE)

The annual meetings preceded the Congress. The ASCE 6th Congress on Forensic Engineering, co-sponsored by the International Association for Bridge & Structural Engineering (IABSE) was held during October 31 - Nov. 3, 2012 at San Francisco, USA. The IC-SDCI International Conference, Co-Sponsored by the IABSE, on Sustainable Development of Critical Infrastructure, was held on November 15, 2012 at Shanghai, China. Both these events were very well attended including by the delegates from India.

### The Automobile Society of India

The Automobile Society of India was associated in organizing the Auto Expo from December 19-23, 2012 at Pune, which was inaugurated by Lt. General N.B. Singh, Director General of EME, Indian Army. The Indian Automobile Trade Fair was a grand showcase for Indian, foreign vehicles along with components, equipment, accessories and services. It was a lucrative business opportunity for auto makers, component manufacturers & various service providers to the automotive industry. It also focused on the in-house developments, improved technology, and financial or technical



collaborations. AUTO'12 EXPO brought the manufacturers, marketers, dealers and all those who are connected with AUTO industry under one roof. The visitors were thrilled to watch the display of combat vehicles from the Indian



Army. Also a crowd puller was display of various racing cars developed by students from many engineering colleges of Pune out of which some of them had won International awards. It was noteworthy that large no of students from engineering colleges of Pune took active part in the Expo which was initiated by the IAESI (Automobile society) & was a pioneering effort to involve students to motivate them to innovate. On 23rd December 2012, a conference of western India Garage Owners Association was organized by the Automobile Society in association with Scooter Repairs & Research Association of Pune. The main objective of the conference was to understand the training needs of the local garages that form a very large number in the un-organized sector. All the participants were very enthusiastic to undergo specialized training to keep themselves abreast with the latest technologies and to repair the vehicles in a better way. As technology has taken big strides & repairing the new brand of vehicles needs additional skills, Automobile Society has taken the initiative to impart specialized training to the technicians in the un-organized sector which was whole heartedly welcomed by the participants and have assured all support in the endeavor. A drive to identify the garages & their training needs has already begun which will be a continuous activity from the Automobile Society. Initially it is planned at Pune & later in other parts of the country.

### Institute of Urban Transport of India

The 5th Annual Conference and Exhibition on 'Urban Mobility' 2012, sponsored by the Ministry of Urban Development, Government of India, was held during Dec. 5-8, 2012 at Maneskshaw Centre, Parade Road, Delhi. At this conference, like in the previous years, awards were also given to 'Best Practice' projects in urban transport. The conference was very well attended both by the industry and the academia.

### The Aeronautical Society of India (ASI)

Defence R&D Organization is organizing Aero India 2013-International Seminar on Aero Products – Challenges in Design in association with ASI at Bengaluru. For details send a mail to: seminar@aeroindiseminar.com or visit: www.aeroindiseminar.in

### The Institution of Electronics & Telecommunication Engineers (IETE)

The 6th Convocation Ceremony for all ALCCS & AMIETE Graduates has been held successfully on 30 Nov 2012 at New Delhi. 18th Sir J C Bose Memorial Lecture on 'Photonic Crystals : Artificial Materials to Control Light' was delivered by Prof R K Shevgaonkar, Director IIT Delhi on 30 Nov 2012 at New Delhi. IETE Foundation Day was celebrated on 02 Nov 2012 at IETE, Lodhi Road, New Delhi. The theme was "Indian Wireless Communications Paradigm: Opportunities and Challenges". **An International Conference on "Telecommunications and Networks" (TEL-NET 2013) is being organized by the Amity University in association with IETE** on February 27-28, 2013 at Amity University campus, Noida, U.P. For details send an email to: akumar2@amity.edu, rkkapur@amity.edu, telnet2013@amity.edu, or visit website: www.amity.edu/aittm/ telnet2013. You can also send a mail to: ietend@iasdl01.vsnl.net.in, or, visit www.iete.org

### The Indian Institute of Metals (IIM)

The 50th National Metallurgists' Day (NMD) and the 66th Annual Technical Meeting (ATM) was held during November 14-16, 2012 at Jamshedpur. The IIM Chapters Conclave was also held at Jamshedpur on the eve of the NMD and ATM. About more than 700 delegates from all over India including some of them from abroad attend the event from both the industry and the academia. Students also participated in the event. The IIM awards were given on the occasion, apart from national metallurgist awards of the government of India.

## The Institute of Marine Engineers (India) (IMEI)

IMEI organized BIMCO39 and Meet BIMCO Events on October 8, 2012 at Mumbai. MARTEC – 8th International Conference on Marine Technology was organized during October 20–22, 2012 at

Kuala Terengganu, Terengganu, Malaysia. An International Conference on LNG Ships and Floating Systems was organized during November 21 – 22, 2012 at London, UK. Both these events were very well attended.

## Obituary



### Shri K.C. Pant is no more with us

With profound grief and sorrow the Engineering Council of India mourns the sad demise of Shri K.C. Pant, Former Dy Chairman, Planning Commission on November 15, 2012 following a heart attack at the age of 81. Shri Pant played a key role in establishing the Engineering Council of India and was its first Patron.

He also chaired the High-Level Jury for the first Eminent Engineer Award given by the ECI in April 2012. He served the country with dedication in various capacities and contributed significantly in the economic development of the country. Shri Krishna Chandra Pant, son of Shri Govind Ballabh, a former Chief Minister of Uttar Pradesh & Union Home Minister, was born in Nainital, Uttarakhand and educated at St Joseph's College, Nainital. He did his MSc from the University of Lucknow. He was awarded Honorary Doctorate Degree by Udaipur University in 1975-76; Honorary Doctorate Degree by the Andhra Pradesh University, Waltair, 1985-86. He joined politics and was elected to the Lok Sabha in 1962, and then in 1967, 1971 and 1989. He was elected to the Rajya Sabha in 1978 and was leader of the house during 1979-1980. Shri K.C. Pant was Union Minister of, Finance, Steel and Heavy Engineering, Home Affairs, Irrigation & Power, Energy, Education, Steel & Mines and Defence. He assisted the Prime Minister with the Departments of Science

and Technology, Atomic Energy, Electronics and Space. He was also the Chairman, Tenth Finance Commission, India (1992-94). He was the Deputy Chairman, Planning Commission from 2000 to 2004. With his death, India has lost a great leader, and engineers have lost a well wisher of the profession. Engineering Council of India prays for the peace of the departed noble soul and conveys its condolence to the bereaved family.



**Prof. K.R. Swaminathan**, formerly Dean, Agricultural Engineering College and Research Institute, Agricultural University, Coimbatore, Tamil Nadu during 1988 -1994, expired on 18.11.2012 at Coimbatore. He served the agricultural engineering faculty in various capacities. He was instrumental to establish a separate department for bio energy and research activities in the area of renewable energy at TNAU. He has developed number of gadgets and implements. Also guided more than 20 MTechs and 10 Ph.D. scholars in the areas of farm machinery and bio-energy. He obtained and operated a number of schemes funded by government and other private agencies. Indian has lost a capable agricultural engineer & scientist. Engineering Council of India mourns his death and conveys its condolence to the bereaved family and prays to God for the peace of his departed noble soul.

## Recommendations of the Round Table Conference on the Reform of Engineering Education



India should become a leader of engineering knowledge economy through enhancing the standards of its engineering education system.

The Indian economy today demands multidisciplinary & multi-skilled engineers. Such engineers would have to be produced in the country. Therefore, engineering education system of old functional paradigm needs to be looked from the user driven rather than a discipline perspective. Engineering education needs, therefore, to be moved out of its present branch - specific engineering education to multi-disciplinary engineering education and made more practical. It should be done not in one-go, but with caution and in steps. This can be done by starting a few new branches such as BE (Construction Engineering), BE (Hydrocarbon Engineering), BE (General Engineering) and a combined five-year degree course in engineering & management. For the multidisciplinary curriculum of engineering education, the weights to be assigned to different subjects as humanities, social sciences, basic sciences, mathematics, engineering core subjects, elective subjects, etc, should be decided on a consensus basis of the academics and the industry. For the present, we should revert back to the earlier curriculum of having common subjects during the first two years of the course; and the branch should be given in the third year of the course after evaluating the performance of a student during the first two years of the course. This should be done universally in all engineering branches. The subjects gone obsolete should be removed from the curriculum of all branches. The subjects from the social sciences - economics, statistics, management, communication, law, etc. should be added to the curriculum. Their soft skills such as etiquette, table manners, inter personal behaviour, etc., should be developed in the students at the college level itself. It should be made mandatory to review engineering curricula after every four years; and it should be done in consultation with the academics and industry. Eminent practicing engineers and eminent engineer consultants may also be consulted, if convenient. Computer simulations should also be developed and used for delivering engineering education and for laboratory practices. It will make it very easy for the students to understand various concepts. Reform of the engineering education system should also include reform of the present common entrance test for admission of students to

engineering courses for ensuring the selection of only those candidates who have not only the knowledge of physics, chemistry, mathematics and general knowledge but also aptitude for engineering.

There should be one all India common test for admission to engineering institutions. Engineering establishments in the private sector and those of the various state governments should also accept this all India common entrance test for admission to their establishments. We can also think of an option of introducing general engineering course of four years as: three years in a college and then joining work with an industrial unit for one-to-two - years and then returning back to the college for the one year to complete the course. The combined degree of engineering & management can also be split in two streams as: first three years in a college and then two or three years of work with an industrial unit and then two more years in the college for completing the course. For making available right engineers to the Industry for their applied R&D, the postgraduate engineering degree can be of six years comprising a general engineering course of four years and specialization of two years after that. Alternately, it could be a general engineering course with a break of two to three years of work in an industrial unit and two years of specialization thereafter. We need to harness appropriately commonalities and synergies among all the major branches of engineering for developing designing skills in engineers. Recognising that the fresh engineering graduates lack a strong ethical foundation, introduction of ethics as a subject in engineering education in universities needs a serious consideration. The practical case studies need to be included in the technical books and other reference materials meant for engineering students. Disaster Management needs to be incorporated in the engineering curricula. Emphasis should be on practical engineering education which should also include sustainability aspects by introducing in the curricula a compulsory subject on sustainability which may include the philosophy, the basic and general concepts of sustainability and its practical application.

As per the Washington Accord, regulatory mechanism should make it possible to transfer credits between universities/Institutions in the engineering degree programmes. Though quality improvement programmes for





teachers have been reportedly set in motion, results are not yet spectacular. This issue needs to be tackled so that we get quality faculty for engineering education. Industrial training for the students & faculty should be

made mandatory. For this, the industry should spend a part of their income on this training, and it should be compensated via tax incentives for any expenditure that it may incur on this training. The cost for this training also can be met from the budget set for Corporate Social Responsibility. E-learning and web-based teaching methods need to be introduced. The faculty should give up its arrogant know-all attitude about engineering and be consistently open and learn state-of-the-art developments from practicing engineers. Practicing engineers and eminent engineer-consultants should also be involved in teaching for bring a very rich experience in teaching and setting syllabus. They will not be competitors of the main faculty. Industry - Academia interaction in technical education should be institutionalized for revision of the curricula & its delivery. The industrial training during the third & the fourth year of the course should be in the format of small projects on industrial problems assigned individually or collectively to a group of students, It should also be assessed and marks obtained thereof should be included in the marks obtained from the written examination; and it should be made mandatory. There should be a mandatory working for the faculty with the industry at least for two-to-three terms of one year each during the entire service period; and like-wise, practising engineers and eminent engineer consultants with demonstrated achievements in the consultancy should also be involved in teaching engineering for similar tenures. This will bring better synergy between the two, apart from providing an opportunity to them to have a hands-on experience of the "other side of the fence". After the theoretical course and during – the- course training is over, there should be a mandatory six months-to - one year of paid internship with an industrial unit which should be assessed and credits thus obtained by a student should be added to her/his total credit and the industry should be compensated for any expenditure that it may incur on this internship via the tax route. It should be made mandatory that a student, after clearing the written examination, will get the final engineering degree only after successfully completing during – the - course training and after- the – course paid internship of six months-to- one year with an industrial unit. A provisional engineering degree however, can be given after the written examination. The practice of delivery of engineering education should be reformed from its present form by placing more emphasis on self-learning and problem-solving. Creativity should be developed in engineering student as a part of engineering education. Evaluation of the faculty by the students should be made mandatory for all the engineering colleges in the country. A working mechanism needs to be created and operated as a matter of regulatory policy on collaboration with the world class universities for the faculty exchange, establishing research centres, apart from developing modern curricula. Engineering profession needs also to be regulated like the other professions such as Lawyers, Doctors, Architects, Accountants, etc are for giving a legal status to engineering profession and ensuring accountability of engineers to their decisions. The continuing professional development (CPD) should form an important element of the regulatory mechanism of engineering profession. The culture of accountability must be infused in the engineering institutions. The foreign direct investment (FDI) for engineering education system should be encouraged with a view to bringing in competition vis-a-vis indigenous institutions for enhancing the standards of engineering education. The vocational engineering education system at the workers level needs to be upgraded and made as an option of 10+2 education, particularly for the students of rural India and the ITI- based education for engineer technicians should be made a part of this process. The curricula and training format of the polytechniques and industrial training Institutes (ITIs) training diploma engineers and engineer technicians

respectively need to be re-engineered for imparting required knowledge and skills to diploma engineers and engineer technicians. The English language skill of undergraduate engineering students, diploma & engineer technicians also need to be made better by including the language in their curriculum. The synergy in the various efforts that are being made by the various agencies in training the technical workforce in the country needs to be strengthened.

India should become a "Full Member of the Washington Award" without further delay for the recognition of the engineering qualifications by other countries. The administrative set-up for the higher technical education in the country, represented by the UGC and AICTE, needs to be made flexible and purposeful by converting it into a single window set-up or as may be deemed appropriate for managing the higher technical education. The demand assessment of engineers from the different sectors of the economy should be made a regular feature of the work of the regulatory body before sanctioning the new engineering colleges, primarily for arresting the proliferation of engineering colleges of poor quality infrastructure and faculty in the country. There is a need for legal recognition of PE certification granted as per the systems and procedures of Engineer Mobility Forum (EMP). Close interaction of academic institutions with entrepreneurs should be mandated as a social corporate responsibility on the part of academia. Spending of public money on higher education and research in non-performing universities/ institutes should be reduced, and the performing institutions should be given more financial grants as encouragement for better quality teaching and research. Performing teachers should also be given financial rewards (e.g. cash incentives for international journal publications, patents filed, or for bringing any other laurels to the institutions, special remuneration package for course loads above average and so on). The faculty jobs need to be made more attractive for the right persons and the CPD of the engineering faculty also needs to be institutionalised. A National Proficiency Evaluation Test (NPET) should be designed & developed for testing fresh engineers who comes out of professional engineering institutions for employment. The recruitment of engineers without the required NPET score should be discouraged. The prestigious Indian Institutes of Technology (IITs) should mentor some lesser known or new engineering colleges for raising their standard. Inter-institute credit transfer should be permitted. It should be made mandatory for the industry to increase their spending on applied research for increasing overall productivity. The professional engineering societies in India should have a role in setting the standards and certify engineers by testing them as per their standards and in the accreditation mechanism of engineering education in India. The management quota for admission to engineering courses should be scrapped, as it affects the quality of intake of students admitted to engineering course under this quota.

## Awards

### Dr. Sanak Mishra

Vice President, CEO, Greenfield Projects India of Arcelor Mittal & Chairperson, International Organisation of Materials, Metals and Minerals Societies (IOMMMS), received the "JRD Tata Award for Excellence in Corporate Leadership in the Metallurgical industries" for the year 2012 on November 17, 2012 at Jamshedpur. The first recipient of this Award, instituted in 2008, was Ratan Tata, the successor to JRD Tata.



### Dr. S. N. Jha

The National Academy of Agricultural Sciences has honored Dr. S. N. Jha with Recognition Award for his pioneering and outstanding contributions in the field of Agricultural Engineering and Technology for the biennium 2011-12.

*Our Congratulations*

## ENGINEERING COUNCIL OF INDIA

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