



# The Indian Engineer

The lack of quality education as one of the 10 factors is holding India back from rapid economic growth- Goldman Sachs.  
We always learn, all the time and in every walk of life" — PM Telang, Tata Motors

NEWSLETTER OF THE ENGINEERING COUNCIL OF INDIA

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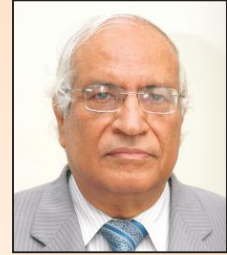
The Institute of Marine Engineers (India)

**Shri P. N. Shali**

Director

## From the Chairman's Desk

The Round Table Conference (RTC) on the Theme: 'Reform of Engineering Education for Better Employability of Engineers - Contours of Reform', organized by the ECI on September 13, 2012 at New Delhi, was very well attended by the member associations, industry and academia. It was sponsored by the Planning Commission. The gist of the recommendations of several national conventions and conferences on this subject was discussed at the RTC. Mr. Pawan Agrawal, Adviser (Education), Planning Commission addressed the RTC. Prof. Syed Samsul Alam, Vice-Chancellor, Aliah University, Kolkata, the Chief Guest, also addressed the RTC. I must thank all our member associations for supporting the RTC.



The 10th National Conference on the Theme 'Technological Innovations in India- Retrospect & Prospect' is being held on November 29, 2012 at New Delhi. The work has been initiated. The Conference Committee met on August 21, 2012 in the office of IETE at the Lodhi Road, New Delhi where the theme and contents of the announcement brochure were finalized. The brochure has since been sent to all members associations, corporate organisations in public and private sectors and academic institutions. As in the past, I look forward to support of all member associations in promoting the conference. This is the flagship event of ECI and its success is very important for all of us for enhancing the image of the engineering profession.

ECI is continuously following up with the Ministry of HRD regarding the Engineers Bill. The progress has been slow and the matter has been taken up again. I met the Secretary, Higher Education and wrote to him reemphasizing the need and urgency for the Bill. It is proposed to meet the Hon'ble Minister of HRD soon. The support by member associations will be very helpful in this regard.

  
(Uddesh Kohli)

## Think it over

The enigma of Indian engineering is that a narrow education is making engineers oblivious to the importance of human interaction and raising the cost of even the simple tasks. Many people think that engineering is applied science; while as it is much more than applied science. It is a coordinated social performance of many people with the technical expertise distributed among them like an orchestra. Social interactions constrain the results just as the strength of steel limits the height of our tallest buildings.

- James Trevelyan,  
Winthrop Professor, School of Mechanical and  
Chemical Engineering, University of Western Australia

## FORTHCOMING PROGRAMMES

### Engineering Council of India

**10th National Conference** slated for November 29, 2012 at New Delhi. For details send a mail to: [eci@ecindia.org](mailto:eci@ecindia.org) or [director@ecindia.org](mailto:director@ecindia.org)

**4th EDP on Project Management** will be held in February, 2013 at New Delhi

**2nd EDP on Technology Management** will be held in March, 2013 at New Delhi

### The Aeronautical Society of India -The HAL ESSAY Competition – 2012

The programme is sponsored by the Hindustan Aeronautics Limited. For details send a mail on: [aerosoc@bol.net.in](mailto:aerosoc@bol.net.in) or visit Website: [www.aerocietyindia.in](http://www.aerocietyindia.in)

### Computer Society of India

**CTNGC-2012:** Communication Technologies & its impact on Next Generation Computing. For details send a mail to: [ashishseth@its.edu.in](mailto:ashishseth@its.edu.in), [alkaagrawal@its.edu.in](mailto:alkaagrawal@its.edu.in)

**EAIT 2012:** Third International Conference on Emerging Applications of Information, Technology. For details send a mail to: [csieait@gmail.com](mailto:csieait@gmail.com)

**CSI 2012:** The 47th Annual National Convention of CSI. For details send a mail to: [csical@gmail.com](mailto:csical@gmail.com)

### Indian Geotechnical Society

International Conference on Ground Improvement and Ground Control during October 30-31 & November 1-2, 2012 Wollongong, Australia. For details send a mail to: [icgi\\_2012@uow.edu.au](mailto:icgi_2012@uow.edu.au) or visit: [www.icgiwollongong.com](http://www.icgiwollongong.com)

**GA2012:** 5th ARC on Geosynthetics for Sustainable Adoption of Climate Change is slated for December 10-14, 2012 at Bangkok, Thailand. For details send a mail to: [igs-thailand@ait.ac.th](mailto:igs-thailand@ait.ac.th)

### Indian Society for Trenchless Technology

IndSTT in association with the Construction Industry Development Council (CIDC) and Mewar University, Chittorgarh (Rajasthan) is initiating B. Tech, M. Tech and Ph. D programmes in Trenchless Engineering under an MoU entered on 1st October 2012. Details regarding programmes shall be notified soon.

### Indian Building Congress (IBC)

IBC has invited entries for the IBC Awards for Excellence in Built Environment 2011. These awards will be conferred during 18th Annual Convention of IBC to be held in November, 2012 in New Delhi. For details send a mail to [info@ibc.org.in](mailto:info@ibc.org.in) or visit website: [www.ibc.org.in](http://www.ibc.org.in)

### The Indian Institute of Metals

The 50th National Metallurgist Day & 66th Annual Technical Meeting is slated to be held during November 14-16, 2012 at Jamshedpur, Jharkhand. For details send a mail on: [jcmarwah@yahoo.com](mailto:jcmarwah@yahoo.com), [akroyiiom@yahoo.com](mailto:akroyiiom@yahoo.com)

### The Institute of Marine Engineers (India)

An international Conference on LNG Ships and Floating Systems is slated for Nov. 21 – 22, 2012 in London UK. For details visit [www.rina.org.uk](http://www.rina.org.uk)

## From Editor's Desk



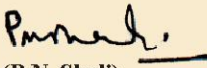
### Why do we need "Regulation of Engineering Profession" in India?

Engineers are expected to take decisions with due professional integrity. Their decisions impact public interest, safety and welfare. Without statutory regulation of engineering practice, it is not possible to safeguard the society from hazards of unsafe and improperly engineered facilities. While doctors, lawyers, architects, chartered accountants, etc, are regulated in India, engineers are not regulated and, hence, engineering has no legal status as a profession in India. Engineers are, therefore, not accountable for their professional practice. There is also no compulsion for them to continue developing their professional competency and ensure ethical professional practice. In developed and many developing countries, registration/licensing of engineers is necessary under their respective acts if they have to practice and work on engineering assignments in these countries. In the present WTO regime, India also should have this legal requirement for practicing engineering. More so, it will be required for the mobility of engineers abroad for trading their services when the trade in services is opened up, which is round the corner. Since there is no regulation of engineering profession in India, today foreign engineers can practice in India, our engineers cannot practice abroad without obtaining a practicing license as required in most of the countries. For trade in engineering services, we may also have an option of bilateral agreements with countries; and these agreements can only be between governments through their respective statutory councils. These bilateral agreements cannot be done by non statutory bodies. Besides, to derive full benefits of EMF membership, it is necessary that the registration is undertaken by a statutory body.

It was way back in 1970 that the Barve Committee set up by the Planning Commission had recognized the need for regulation of engineering profession in India for its proper growth and development. Since then, nothing much happened on this important issue. Association of Consulting Engineers (India) initiated action in April 1991 and prepared a draft of an "Engineers Bill" and submitted it to the Ministry of HRD. AICTE, as directed by the Ministry, started processing the Bill. A series of meetings were held during 1991-1996, but nothing concrete materialized from these deliberations. The Association filed a Public Interest Litigation against the Ministry for HRD in the Delhi High Court for enactment of the Engineers Bill on 10th December 1996. After a number of hearings, the HRD Ministry acknowledged the urgent need for such legislation, but stated that before initiating action, the Ministry would like to have a consensus of all the professional engineering associations on this issue which was not there. In early 2000, the Delhi High court ruled accordingly.

Engineering Council of India (ECI) has been working on this issue on a regular basis since 2002 and a consensus draft Engineers Bill was submitted to the Ministry of HRD in 2007. The Ministry circulated the draft to the concerned ministries / departments of the government of India including the Planning Commission twice- first in September, 2009 and then in June, 2010. Some ministries / departments made a few observations at each stage of its circulation, which were duly dealt with by the Ministry of HRD and the Bill was revised. There were also some comments from the internal divisions of the Ministry of HRD which were also dealt with by the Ministry. A general consensus for the proposed legislation also emerged at a meeting taken by the then Special Secretary, Ministry of HRD in February 2011. Earlier in a meeting of ECI with the Hon'ble Minister of HRD in September 2009, he had also appreciated the need to bring in this legislation as early as possible. In this background, 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.

India needs to regulate engineering profession for giving a legal recognition to the profession; for making engineers responsible for their professional practice upholding professional ethics and integrity -as these have a direct impact on the functioning of industry & infrastructure, environment, health, safety which is crucial for the society and country, apart from regulating the entry of foreign engineers for jobs in India, enabling engineers to trade their services abroad, and ensuring that they continue to develop their profession. These are our compulsions for regulating the engineering profession by an Act of Parliament. We can no longer afford to delay this further.

  
(P. N. Shali)



## Eminent Indian Engineer : Dr. Anil Kakodkar

Dr Kakodkar - a beloved son of India, an eminent Indian nuclear scientist & mechanical engineer, and champion of India's self-reliance on Thorium as a fuel for nuclear energy- has worked for the development of the atomic energy programme in India throughout his professional life. Undeterred by the restrictions imposed by the international community, he succeeded in developing various systems for the Pressurized Heavy Water Reactor, in building the Dhruva reactor starting from the conceptual stage, in rehabilitation of Madras Atomic Power Station Units 1&2 - both of which at one stage appeared to be on the verge of being written off following failure of the moderator inlet manifolds, in conceptualization and development of Advanced Heavy Water Reactor that realizes the next generation objectives through innovative configuration of present day technologies besides use of thorium. Dr. Kakodkar has also been a key contributor to India's strategic programme. He was among the chosen few involved in the first successful peaceful nuclear explosion experiment that India conducted on May 18, 1974 at Pokhran. Later, he played a key role in the series of successful nuclear tests conducted during May 1998, again at Pokhran. India also demonstrated nuclear submarine power - pack technology under Kakodkar's leadership. His sterling leadership led to a significant boost to India's nuclear power programme notwithstanding the uranium supply constraints. As a result and with the completion of projects already underway, India's nuclear generation capacity is set to reach 10,000 MWe as well as poised for a rapid scale - up thereafter. The comprehensive and robust programme under Kakodkar's leadership has earned India a distinctive status as a country with advanced nuclear technology. Notable also are his innovative contributions to human resource development activities. Establishment of NISER (National Institute of Science Education and Research), DAE-Mumbai University CBS (Centre for Basic Sciences) and HBNI (Homi Bhabha National Institute) are expected to result in a fresh wave of human resource development, generating greater experimental capabilities and bringing in linkage between basic research and technology development for the acceleration of India's multifaceted atomic energy programme. A committee under his chairmanship has worked out a detailed report for greater autonomy of IITs and taking them to world class level. He chairs an empowered committee to take the process forward. He also led a committee set up by the Government of Maharashtra to look at higher education in the State. The committee has made important recommendations that could lead to a paradigm change for improvement of higher education in the State. Another high level committee under his chairmanship has made comprehensive recommendations for improvement of safety on Indian Railway. Dr Kakodkar joined the Bhabha Atomic Research Centre (BARC) in 1964, following the one year postgraduate training with top rank in nuclear science and technology in the then atomic energy establishment. He took over as the Director of BARC in the year 1996, and rose to be the Chairman, Atomic Energy Commission and Secretary to the Government of India, Department of Atomic Energy during the years 2000 -2009. Currently he is DAE Homi Bhabha Chair Professor at BARC.



Chairman, Board of Governors of the Indian Institute of Technology, Bombay – 2006-15, Chairman, Board of Governors, National Institute of Science Education and Research, Bhubaneswar, Chairman, Board of Governors, Dr. B.R. Ambedkar, National Institute of Technology, Jalandhar (Punjab). Chairman, empowered committee on IIT reforms, and the Chairman, NIT Committee. He is also the Independent Director, Maharashtra Knowledge Corporation Limited, Member, Mentor Group, Manipal University, Member, Board of Governors, VJTI, Mumbai, Member, Advisory Committee on Promotion of Research in Science & Technology in Universities & other Academic, Scientific & Engineering Institutions, Ministry of Human Resource Development, and a Member, Board of Trustees of the Chennai Mathematical Institute.

### Academy Fellowships & Honours

Dr Kakodkar holds fellowships of many prestigious institutions of the country. These include Indian National Academy of Engineering (was its President during 1999-2000) Indian Academy of Sciences, the National Academy of Sciences, Maharashtra Academy of Sciences. IITs and many leading universities have conferred on Dr Kakodkar Doctor of Science (Honoris causa). These include IIT Bombay, IIT Kharagpur, IIT Delhi, University of Mangalore, Gurunanak Dev University, University of Mysore, IGNOU, Jamia Hamdard (Hamdard University), Pravara Institute of Medical Sciences, Visvesvaraya Technological University, Rani Durgavati Vishwavidyalaya, University of Lucknow, Dr. D.Y. Patil University, Shivaji University, Goa University, Tilak Maharashtra University, Pt. Ravishankar Shukla University, and the Thapar University, Hon. Fellow, Indian Institute of Technology, Mumbai, Fellow, Institution of Engineers, India, Trustee, Indian Nuclear Society, Hon. Fellow, Institution of Electronics & Telecommunication Engineers, India.

### Key Positions Held in the Institutions of Societal Development

Dr Kakodkar is the Chairman, Rajiv Gandhi Science and Technology Commission, Chairman, Technology Information, Forecasting & Assessment Council (TIFAC, Department of Science & Technology), President, Vigyan Prasar (Department of Science & Technology), Member, Governing Body, Shriram Institute for Industrial Research Chairman, Advisory Board, Global Indian Scientists & Technocrats Forum, Member, Board of Trustees, Asiatic Society, Member, Executive Committee, Nehru Centre, Member, Advisory Council, Jamanalal Bajaj Foundation, Member, Board of Reserve Bank of India, Member, Science and Engineering Research Board, Member, National Security Advisory Board, Chairman, Committee for Identification of the Literature on the History of Science & Technology in India, Ministry of Culture, and the Chairman, Nalanda Dance Research Centre Trust.

### Awards & Recognitions

The President of India conferred on him Padma Shri in 1998, Padma Bhushan in 1999 and Padma Vibhushan in 2009. The State Governments of Goa & Maharashtra conferred on him the highest civilian awards - Gomant Vibhushan in 2010 & Maharashtra Bhushan in 2012 respectively. Dr Kakodkar is also a recipient of many international awards & recognitions. These include Rockwell Medal for Excellence in Technology – 1997, Member, International Nuclear Energy Academy, Hon. Member, World Innovation Foundation, Member, Council of Advisors of World Nuclear University, Member, International Nuclear Safety Advisory Group (INSAG) – 1999-2002, USIBC Award for Expansion of U.S.-India Trade Relations 2009, Officer de l'Ordre de la Legion d'Honneur by the President, French Republic – 2011, and the Presidential Citation from the American Nuclear Society. Dr Kakodkar is also a recipient of many national awards & honours for his outstanding contribution to science & technology. The list is very large, indeed. Some of the major among these include Hari Om Ashram Prerit Vikram Sarabhai Award in 1988,

*Contd. on page 4...*

### Current Key Engagements

Dr Kakodkar is the Chairman of Solar Energy Corporation of India, and the Chairman of the Solar Energy Research Advisory Council, JNNSM. He is a Member, Mission Steering Group, JNNSM, Member, Atomic Energy Commission, Member, ONGC Energy Centre Trust, and non-ex. Director, Walchandnagar Industries Ltd.

### Key Positions Held in the Academic, Scientific & Engineering Institutions

Dr Kakodkar is associated with the Academic, Scientific & Engineering Institutions in the country in his capacity as the

## View Point

### Our focus today should be on "Sustainable Development": Prof. D.V. Singh

Our focus today should be on "Sustainable Development. It should implicitly imply and include sustainable consumption. All human activities consume materials and energy. Sustainable energy security is the core requirement of all development. Energy consumption is a reliable and an important indicator of development. We should move from the conventional technologies to new technologies, which use renewable resources for generation of energy for realizing the goal of sustainable energy security. New Technologies should include Hydrogen as a promising source of sustainable energy. Presently, Hydrogen provides only 0.02 % in the total energy generated on the planet. The outlook, based on the research work receiving priority in many of the leading laboratories of the world, is that Hydrogen will be the primary source of energy in the long term. The first country, which will have the Hydrogen Economy, is likely to be Greenland. As the European and the Arctic tectonic plates are moving away from each other, Greenland, due to its geographical location, has access to exploitable geothermal energy. It has both the geothermal and hydro power as source of surplus energy, which can be used to split water to produce Hydrogen. The projections are that by 2017, Hydrogen as a source of energy will become viable. Hydrogen presents many challenges. Dr Parikh has indicated that there are a number of catalysts the efficacy of which is still a subject to laboratory research. Further, there is a big challenge in storing, transporting, delivery, etc. of Hydrogen. We need specialized technologies

and logistic arrangements for this. Most of the time, we have not been in step with the rest of the world in contemporary research. We must put in a lot of efforts on Hydrogen research to be at par with the best in the world. You may know, however, that the National Hydrogen Energy Road Map (NHERM) program in India - for bridging the technological gaps in different areas of Hydrogen energy, including its production, storage, transportation and delivery, applications, safety, codes and standards and capacity building for the period up to 2020 was initiated by the National Hydrogen Energy Board ((NHEB) in 2003 and it was approved in 2006. The programme is under the direction of the Ministry of New and Renewable Energy (MNRE). The adverse impact of human activities on environment is generally realized much later only when its effects are felt and become visible. When the corrective actions are taken late, the situation usually becomes worse before it gets better due to the time lag between the actions and their results. We need to act collectively on this important issue when we are dealing with new technologies. Energy conservation and energy saving are intrinsic parts of sustainable energy security. If we save 1 kWh of energy, it will be like generating two to three kWh of energy cumulatively in the economy and it will mean reducing GHG emissions. It is important that collectively we should ensure generation, transmission, distribution and the use of energy as rationally as possible for realizing our energy saving and conservation objectives.

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### Eminent Indian Engineer : Dr. Anil Kakodkar

HK. Firodia Award for Excellence in Science and Technology in 1997, Rockwell Medal for Excellence in Technology in 1997, FICCI Award for outstanding contribution to Nuclear Science and Technology in 1997-98, ANACON- 1998 Life Time Achievement Award for Nuclear Sciences, NAFEN's Excellence Award (Best R & D Man) – 1998, the Indian Science Congress Association's H. J. Bhabha Memorial Award (1999-2000), Shriram Scientific & Industrial Research, Foundation Golden Jubilee Award– 2000, Godavari Gaurav Award 2000, National Citizen's Award – 2001, Chemtech Foundation Achiever of the year Award for energy – 2002, Dr. Y. Nayudamma Memorial Award (2002), Gujar Mal Modi Award 2004, Acharya Varahmihir Award 2004, Rotary's Vocational Excellence Award – 2006, INAE Lifetime contribution Award in Engineering – 2006, General President's Award, Indian Science Congress -2007, Maharashtra Bhushan Award of the Maharashtra Times – 2008, India Energy Forum Honour 2012, and many more.

### Publications

He has published over 250 technical & scientific papers

Dr Kakodkar was born in 1943 (November 11, 1943), in Barwani -a princely state in Madhya Pradesh to Mrs. Kamala Kakodkar & Shri Purushottam Kakodkar, both Gandhian Freedom Fighters. He had his early education at Barwani and at Khargone, until moving to Mumbai for post-matriculation studies. Dr Kakodkar graduated from Ruparel College, then from VJTI, University of Mumbai with a degree in Mechanical Engineering in 1963. He joined the Bhabha Atomic Research Centre (BARC) in 1964. He obtained a masters degree in experimental stress analysis from the University of Nottingham in 1969.

## Appointments

Shri H.M. Nerurkar, M.D. Tata Steel takes over as the President of the Indian Institute of Metals (IIM).



**Message :** *I am proud to have been associated with the Indian Institute of Metals and for being entrusted with the responsibility as its President for the year 2012-13. The Institute has embarked upon preparing some important industry specific Generic Reports, two of which are expected to be released at the 2012 NMD-ATM event in November '12. This is a thrust area of the Institute's activities. The technical book series initiated by the Institute already has to its credit three books, and many more are in the pipeline. I am sure the Institute will maintain its pace to attain newer heights with the active and zealous participation of the members of IIM in its activities.*



Maj Gen Gurmukh Singh, VSM, Commander, and Brig Sanjay Prasad, of Hq Technical Group joined IPE as the Chairman and Secretary, Advanced Maintenance Management Programme.

*Our congratulations*

## Awards

The Institution of Civil Engineers (India) conferred the Academic Excellence Awards on the meritorious candidates of 2012 Associate Membership Examination of the Institute as well as on the members of its student Chapters.

*Our Congratulations*



## News from the Member Associations

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

ACCE(I) has constituted a technology development committee (TDC) comprising members drawn from the working engineers and academicians for Identifying new disciplines in the field of civil engineering consultancy and promote their utilisation, organise work shops, courses and seminars on different topics for the benefit of the staff of the consultancy organisations.

### 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](http://www.besindia.com) or send a mail to: [bes@besindia.com](mailto:bes@besindia.com)

### Computer Society of India (CSI)

CSI, Mumbai Chapter organized a number of "Hands on workshops" at Mumbai during July, 2012. These included Advanced Excel 2007 on July 20, 2012, Developing & Writing Structured Use Cases on July 21, 2012, Web Application Security during July 20-21, 2012, Microsoft SQL Server reporting Services (SSRS) during 21-22 July, 2012, Group Dynamics and Team Building on July 27, 2012, e-Crime & Computer Forensics on 27-29 July, 2012, etc. An International Conference on Advances in Cloud Computing (ACC-2012) was organized during 26-28 July, 2012 by the CSI, Bangalore Chapter and CSI Division I at Bangalore. The 2nd AP State Student Convention was organized during 3-4 August, 2012 at Vizag, A.P. A Regional Student Convention – Region 5 was organised during 9-10 August, 2012 at Kurnool, A.P. The 6th Tamilnadu State Student Convention was organised during 24-25 August, 2012 at Dindigul, T.N. The 3rd International Conference on Transforming Healthcare with IT organized by the CSI Division II (Software) during 31 Aug-1 September, 2012 at Hyderabad. A few more such programmes were organised during September at various places in the country.

### Consultancy Development Centre (CDC)

Continuing with its skill development programmes, CDC organized the 16th batch of MS –Consultancy Management programme during July 5- August 6, 2012 at Bangalore, Chennai, New Delhi and Pune. These were very well attended. CDC also organized a certificate programme in Management Consulting during August 8 - September 9, 2012 at New Delhi. It was also very well attended. A certificate programme in technical consulting is slated for October 6 - December 30, 2012 at New Delhi. For details of various programmes of CDC visit website, [www.cdc.org.in](http://www.cdc.org.in).

### Consulting Engineers Association of India (CEAI)

CEAI is organizing an International Seminar on "Transport Infrastructure 2025 – Opportunities and Challenges" covering roads, railways and metros, airports, ports, and Inland water transport on 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 - will be presented and discussed. For details send a mail to: [ceai.ceai@gmail.com](mailto:ceai.ceai@gmail.com)

### Construction Industry Development Council (CIDC)

The Ministry of Land, Infrastructure, Transport, Planning Commission, Government of India, and CIDC are organizing 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](http://www.cidc.in).

### Indian Association of Structural Engineers (IAStructE)

IASEs organized a workshop on "Proof Checking of Structural Designs" on July 28, 2012 at New Delhi. The workshop deliberated on various aspects of proof checking and developing the standard guidelines for the practice of proof checking in structural designs. Various areas of proof checking such as: current practices, and suggested models for proof checking, etc, were covered. A technical lecture on corrosion of steel reinforcement in concrete structures was delivered by Dr V V L Kanta Rao, Principal Scientist, Bridges & Structures, Central Road Research Institute on August 30, 2012 at New Delhi. It was very well attended.

### Indian Building Congress (IBC)

IBC Institute of Training of Professionals & Contractors organized the training programmes on the external cladding systems, floorings, internal wall claddings and false ceilings, hard wares in building construction at IBC, HQs, New Delhi during July- September, 2012. The details of these programmes are awaited and will be covered in the next issue of the Indian Engineer. IBC is likely to conduct training programmes on the subjects such as: safety aspects in construction, scaffolding and shuttering in building construction, and the mechanization in building construction. Dates of these programmes will be announced shortly.

### Indian Geotechnical Society (IGS)

The 34th IGS Annual Lecture 2012 is proposed to be delivered by Professor B.R. Srinivasa Murthy, Professor Emeritus, IISc, Bangalore at IGC-2012 being 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", being organized by the IIIE, Bangalore Chapter, is scheduled to be held on October 29-31, 2012 at Nimhans Convention Centre, Bangalore. The 1st International Conference on the Best Practices in Supply Chain Management (BPSCM-2012) is slated for November 22-23, 2012 at Bhubaneswar, Odisha. For details, visit [www.bpscm.soanuniversity.ac.in](http://www.bpscm.soanuniversity.ac.in).

### Indian Institution of Plant Engineers (IIPE)

Lt Gen Dhir organized a two-day workshop for engineers of the Bhakra Beas Management Board (BBMB) on "Making a Difference by Being a Part of the Transformation." during July 22-23, 2012 at Nangal. The topics that were discussed at the



workshop included: strategic management, change management, leadership challenges and team development, managing innovation, creative problem solving, corporate social responsibility, sustainable development, and managing yourself. A number of technical lectures were delivered during the period July-September, 2012 in the chain of IIPEs monthly technical lectures during the ECM. These included



“ARR Petition” delivered by Shri Y.P. Chawla, Advisor Tariff, JERC. Government of India & National Joint Secretary, “Functioning of Free Masons”, their rituals, symbolism and morality, delivered by Shri Satish Bahadur, President Business Combine, "Design Aspect of Plant

Components to Reduce Maintenance" delivered by Shri Mohd. Abulqasim, (Mechanical Engineer) Manager (R&D) Desein - Indure Pvt Ltd. New Delhi. All these lectures were quite informative and were appreciated by all who attended these lectures.



Sri C K Varughese, Y P Chawla and O P Korwal, of IPEE participated in a very knowledgeable and informative Round Table Conference organized by the Engineering Council of India on September 19, 2012 at New Delhi. A two-day workshop on “Lean Six Sigma Basics” was organized by the IPEE, Karnataka Chapter on September 13, 2012 at the Atria Hotel, Bangalore. It was very well

attended by both the industry and academia. IPEE has planned a national seminar on “Bulk Material Handling Challenges and Opportunities” for November 29-30, 2012 at Habitat World, Lodi Road, New Delhi. Shri B P Singh, Director (Projects), NTPC Ltd., is the Chairman of Organizing Committee of the Seminar. For details send a mail to: [feedback@iipe.co.in](mailto:feedback@iipe.co.in), [iipedelhi@hotmail.com](mailto:iipedelhi@hotmail.com) or visit: [www.iipe.co.in](http://www.iipe.co.in)

### Indian Concrete Institute (ICI)

ICI has decided to organize periodically international seminars on “Green Technology for Sustainable Concrete Construction” to take stock of the work done towards sustainability. After a successful a two-day international seminar on “Green Technologies for



Sustainable Concrete Construction” organized jointly by the ICI and the Asian Concrete Federation (ACF) in association with the American Society of Civil Engineers (ASCE) and SINTEF of Norway during April 13-14, 2012 at New Delhi, it was felt that there is a need to carry forward this initiative to keep up its momentum. ICI is also contemplating, as was recommended by the workshop, to approach the Ministry of Urban Development for creating a policy directive towards classification, declaration and labeling regime in the use of concrete for buildings and infrastructure, apart from to come out with an approach paper on concrete actions on re-cycling of aggregates in India. Further, ICI will take R&D initiative jointly with the SINTEF for the use of pond ash. ICI will constitute an expert



committee to work for the promotion of greater use of high strength concrete in general, greater efficiency and innovation from the cement industry to reduce the green house effects - which is much needed today, and for evaluate sustainability with the LEED rating system of the US for buildings and also developing a similar rating system for bridges.

### 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. A farm machine has been developed indigenously at the CIAE by Sh Jitender Malik hailing from village Seenkh, district Panipat, Haryana. It is a self-propelled platform for harvesting of fruits and pruning of trees. This is the single most important machine required in mechanization of horticulture; and it is one of the very good examples of reverse engineering in agriculture. It will also be very useful for crop residue management through rapid composting in the field.

### 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. Practical NDT series books on Ultrasonics, Radiography, Acoustic Emission, NDT, Eddy Current Testing, and Digital Signal Processing have been authored by Dr. Baldev Raj, Dr. B Venkatraman, Sh P Kalyanasundaram, Sh. SV Subba Rao, Dr. T Jayakumar, Dr. BPC Rao, Sh CV Subramanian, Sh. M. Thavasimuthu and Dr. CK Mukhopadhyay, and are widely circulated among NDT community. The, NDE 2012 - a one of the most important engineering get-together in India comprising an international seminar & an exhibition of NDT equipments and systems- is being organized by the Delhi Chapter of ISNT during December 10-12, 2012 at the Hotel Clarks Inn Suits, Pacific Business Site-IV, Sahibabad, Ghaziabad. Around 800 delegates, comprising eminent NDE experts from various national and international industries / institutions, are expected to attend the event. For details send a mail to: [isntheadoffice@gmail.com](mailto:isntheadoffice@gmail.com), or, visit website: [www.isnt.org.in](http://www.isnt.org.in)

### Indian Society for Trenchless Technology (IndSTT)

IndSTT in association with Construction Industry Development Council (CIDC) and Mewar University, Chittorgarh (Rajasthan) is initiating B. Tech, M. Tech and Ph.D programmes in Trenchless Engineering under a MoU entered on 1st October 2012. Details regarding programmes shall be notified soon. Interested candidate may send a mail to: [indstt@indstt.org](mailto:indstt@indstt.org), [indstt@indstt.com](mailto:indstt@indstt.com), [info@indstt.org](mailto:info@indstt.org), or, visit [www.indianodig.com](http://www.indianodig.com), [www.indstt.org](http://www.indstt.org).

### Indian Institute of Bridge Engineers (IIBEs)

An International Seminar is being organized by the IIBEs DSC during November 2-4, 2012 at Vigyan Bhawan, New Delhi on Pre Engineering and Quick launch Projects. The conference is co-sponsored by the Ministry of Road Transport and others. For details send a mail to; [iibe\\_dsc1@yahoo.co.in](mailto:iibe_dsc1@yahoo.co.in) or call Shri Vinod Kumar, CE, DDG(Brs&Tnls) +919810331161

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

The 18th IABSE Congress on Innovative and Sustainable Infrastructures - Toward Human Urbanism was organised on September 19-21, 2012 at Seoul, Korea. The annual meetings preceded the Congress. The ASCE 6th Congress on Forensic Engineering, co-sponsored by the International Association for Bridge & Structural Engineering (IABSE) will be 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, will be held on November 15, 2012 at Shanghai, China. For details send a mail to: [ingiabse@nde.vsnl.net.in](mailto:ingiabse@nde.vsnl.net.in), or, visit: <http://www.iabse.ethz.ch>.

### Institution of Automobile Engineers (India) (IAEsI)



Shri Biju Varghese, who had a severe spine injury due to an accident and is now moves on a wheel chair, invented "Retro Fitment" - a modification kit that can be easily fitted in any vehicle with a power brake and the brake, accelerator and clutch controls can be actuated with a single hand- for lower limb physically challenged designed. Based on this invention, he fabricated and assembled the "Retro Fitment Car, which has been approved by

the ARAI and the automobile industry. His determination and efforts to overcome his physical condition and engage in the betterment of other physically challenged people is highly commendable and with this, he has become a role model in the society. For his innovation, he has received the National Awards from the Ministry of Social Justice and Empowerment and the National Innovation Foundation, and the Positive India Award from CNN IBN. He has also received awards and recognitions from many more agencies.

### The Aeronautical Society of India (ASI)

The ASI is organizing essay competitions which include (a) HAL Essay Competition – 2012, sponsored by the Hindustan Aeronautics Limited on the subject: A revolution named HAL for the next decade, and (b) PHL Essay Competition – 2012, sponsored by the Pawan Hans Helicopter Limited on the subjects: i) Safety Management System in India-Preparedness of Operators & Regulators and ii) Air Medical Transportation challenges in India. For details send a mail to [aerosoc@bol.net.in](mailto:aerosoc@bol.net.in) or visit [www.aerosocietyindia.in](http://www.aerosocietyindia.in).

### The Institution of Civil Engineers (India) (ICE (I))

ICE(I) celebrated Engineers' Day on September 15, 2012 at New Delhi. On the occasion, a national seminar on "Road Safety – Challenges and Opportunities" was organized, which was inaugurated by Dr. Yoganand Shastri,



Hon'ble Speaker Delhi Vidhan Sabha. Shri Vishnu Shankar Prasad, Secretary General, Indian Road Congress presided over the seminar. Dr. Geetam Tiwari, Prof. Dept of Civil Engineering IIT Delhi spoke



on "Impact of Design Interventions on Road Traffic Crashes-Case Studies from Delhi. Shri Satyendra Garg, Jt. Commissioner of Police (Traffic) Delhi also added practical details of the subject during his presentation. Shri A.K

Sharma, Chief Engineer, Roads Standards & Research, highlighted "Road Safety Initiatives of the Ministry of Road Transport & Highways". Shri Sewa Ram, Head, Department of Transport Planning, School of Planning & Architecture spoke on "Road Safety Considerations in Urban & Intercity Roads". A convocation of the ICE(I) was also held on this occasion and the convocation address was delivered by Prof. Dilip K Bandyopadhyay, Vice Chancellor, Guru Gobind Singh, Indraprastha University. The programme was very well attended.

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

IETE organized a seminar on "Healthy Life Style" on Sep 15, 2012 at IETE HQ, Lodhi Road, New Delhi. Dr Mahesh Sharma, MLA Noida and Chairman Kailash Group of Hospitals was the Chief Guest. The eminent speakers included Dr Sharda Verma, Senior Chief Medical Officer CGHS Noida, Dr (Prof) Vijay Gupta, Head, Deptt of CTVS, Dr Ram Manohar Lohia Hospital, New Delhi, Dr Uma Shankar, Chief Medical Officer, Kailash Institute of Naturopathy, Ayurveda and Yoga, Greater Noida.

### The Indian Institute of Metals (IIM)

An International conference on Resurgent India- Vision 2020 in Metals & Minerals Sector was organized as a part of the 9th International Exhibition- MMMM 2012 by the Delhi Chapter, IIM during September 27-30, 2012 at the Pragati Maidan, New Delhi. The IIM Kalpakkam Chapter along with the Ferrous and Metals Sciences Divisions of IIM organized 11th International Conference on "High Nitrogen Steels and Interstitial Alloys (HNS 2012)" during Sept. 27-29, 2012 at Chennai. These programmes were very well attended both by the industry and academia, and the students. The 50th National Metallurgists' Day (NMD) and the 66th Annual Technical Meeting (ATM) is scheduled to be held during November 14-16, 2012 at Jamshedpur. The IIM Chapters Conclave is also being held at Jamshedpur on the eve of the NMD and ATM. For details send a mail to: [iiomcal@dataone.in](mailto:iiomcal@dataone.in), [jcmarwah@yahoo.com](mailto:jcmarwah@yahoo.com), or visit : [www.iim-india.org](http://www.iim-india.org).

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

The 26th National Convention of Marine Engineers was organized during September 22-23, 2012 by the IMEI Mumbai Branch and Navi Mumbai Chapter & IEI Belapur Local Centre at Navi Mumbai. The Indian marine engineers attended the STAB 2012 & 11th International Conference on the Stability of Ships and OCEAN Vehicles held during September 23 – 28, 2012 in Athens, Greece. They also attended an international conference on Marine and Offshore Renewable Energy held during September 26 – 27, 2012 in London.

## News Corner

The Indian Society of Trenchless Technology (IndSTT) has come out with a manual of trenchless project supervision to provide necessary inputs for project supervision work. Many engineering colleges, reportedly, are closing down their business primarily due to factors such as low quality of education provided, unemployment of the students that they produce and falling demand for engineering education in the country. More so, a change in the mindset of parents for engineering education is reported because of the emergence of alternate better paying jobs in the new professional domains due to liberalization of the economy.

## Round Table Conference on the Reform of Engineering Education

A Round Table Conference (RTC), sponsored by the Planning Commission and supported by the member associations of Engineering Council of India, was organized on September 13, 2012 at New Delhi. It was very well attended both by the industry and academia. The gist of recommendations of seven national conventions, two national conferences & a national workshop organized on this & related subjects at different venues in the country since August 2006 was discussed. Shri Mahendra Raj, MD, Mahendra Raj Consultants Pvt Ltd & Vice Chairman, Engineering Council of India addressed the RTC, Shri Pawan Agrawal, Adviser (Education), Planning Commission moderated the opening round of discussions. Prof. Syed Samsul Alam, Vice-Chancellor, Aliah University, Kolkata, the Chief Guest, addressed the RTC. Shri J.S. Saluja, Managing Director, SCPL, New Delhi, National Vice President, IPE & Member, BOG, Engineering Council of India moderated the second round of the RTC. Shri T.S. Suresh, Director (Projects & Business Planning), Steel Authority of India, moderated the concluding round of the RTC. Among the distinguished panelists included, Prof. B.B. Dhar, Senior Vice-President, RBEF (The Umbrella Organization of Amity Educational Institutions), Dr. P.R. Swarup, Director General Construction Industry Development Council, Dr. M.G. Korgaonker, Director General, National Institute of Construction Management and Research, Walchand Centre, Tardeo, Mumbai, Prof DD Maheshwari BITS Pilani, IIM-Ahmedabad, Dr. (Mrs.) S. K. Mishra, Senior Principal Scientist, Scientist F, CSIR-National Metallurgical Laboratory, Associate Dean, Eng. sc (AcSIR), Jamshedpur, Shri Yogesh Pandya, Head - HR & Administrative Services, L&T MHI Turbine Generators Pvt. Ltd, Hazira, Gujarat, Shri Jatinder Singh, Secreter, CSR, Education & Skill Development, PHD Chamber of Commerce and Industry, Dr. G.P. Karmakar, Professor in Petroleum Engineering, School of Petroleum Technology, Pandit Deendayal Petroleum University, Aisan, Gandhinagar, Gujarat, and Dr. R N Vakil, CMD, VMS Engineering & Design Services P Ltd. The RTC was attended by 110 delegates who came from all over India and represented the industry, members of the member associations of ECI and academia. There was unanimity for the reform of engineering education and the gist of recommendations of the previous programmes, cited above, were recommended subject to a few changes in some of these recommendations. The proceedings of the RTC are under drafting and will be submitted to the concerned quarters in the government of India for consideration in due course. **The RTC also strongly recommended that India should regulate the engineering profession by enacting the Engineers Act and setting up of the statutory council of engineers without further delay.**



## Innovations & Inventions

A hydraulically operated three wheel self-propelled elevator harvesting system was designed and fabricated at CIAE Bhopal for harvesting of mango, oranges, oil palm etc. The unit can be rotated 360° and has hand-controls on platform, self-steering mechanism with a 11 hp petrol engine as prime mover. The platform could be elevated up to 6 m from ground level, which makes it suitable for a variety of operations in medium height orchards including oil palm. Shri Jitender Malik, A farmer from Village Seenkh, District Panipat, Haryana has developed a Mushroom Compost Turning Machine. One of the simplest crop residue management system is to convert it into good quality compost. The good quality compost is critical for a good harvest. The machine developed by Mr. Malik breaks all the clots in the compost, throws inner layer outside and outer layer inside and thereby facilitating the escape of Ammonia. The machine facilitates large-scale expansion of mushroom production due to mechanised mushroom composting. This machine turns 100q of compost material in 20 minutes substituting 50 labours/day. Consequently, it also saves time. The water sprinkled over the compost is evenly distributed by spray nozzles. It makes homogenous mixture resulting in better quality compost. The quality compost ensures high yield, better quality of mushroom and reduces chances of failure. Also the machine is easy to operate. Two persons can easily push the machine and set it into operation with power. The present cost is Rs 1.7 lakh, likely to reduce if adopted largely and fabricated locally (Source-ISAEs).



## Letters to the Editor

Dear Sir,

This is with reference to reform of engineering education. This is a very important initiative taken by the 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 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 liked to share with you.

Your sincerely

**J Ravindranath,**

DGM (Mkt-Exports), Salem Steel Plant, Salem, Tamil Nadu

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