



**WFEO**

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**WFEO-EIT / IMC-WFEO e-Newsletter**



**IEI**



**TECHNOLOGY**

**SUSTENANCE**

**INNOVATION**

*The Institution of Engineers (India)*



## WFEO President visits India to participate in the 28<sup>th</sup> Indian Engineering Congress at Chennai

The 28<sup>th</sup> Indian Engineering Congress 2013, organized by The Institution of Engineers (India) and hosted by its Tamilnadu State Centre, was held at Hotel Leela Palace, Chennai (India) during 20-22 Dec 2013. The event was inaugurated by Mr Pranab Mukherjee, Respected President of India on 20 Dec 2013. Mr Marwan Abdelhamid, President, World Federation of Engineering Organizations (WFEO) graced the occasion.



Mr Pranab Mukherjee, Respected President of India (second from left) at the inauguration of the Congress.

The eminent dignitaries, who were present at the Inaugural Session, included Dr K Rosaiah, Hon'ble Governor of Tamilnadu State; Thiru G K Vasan, Union Minister for Shipping; and Thiru P Thangamani, Minister for Industries, Government of Tamilnadu. Mr S S Rathore, President and Mr Ashok Kumar Basa, President-Elect of The Institution of Engineers (India), were also present on the occasion along with Mr T M Gunaraja, Member of IEI Council and Chairman, Organizing Committee and Maj Gen R K Sanan, VSM (Retd), Secretary and Director General of The Institution of Engineers (India).



Mr Marwan Abdelhamid (centre) being welcomed with a bouquet of flowers by Mr S S Rathore (on the right). Mr Ashok Kumar Basa (on the left) is also seen.



## International Meet

The 'International Meet' was held on 21 Dec 2013 at 1245 hrs on the sidelines of the Congress. Mr Marwan Abdelhamid, President, World Federation of Engineering Organizations (WFEO); Dr (Mrs) Marlene Kanga, President, Engineers Australia; Prof Ing Jaromir Volf, President, Czech Association of Scientific and Technical Societies (Český Svaz Vědecko Technických Společností – ČSVTS); Prof Young Hyun Moon, President and Prof Sung Wan Gu, Secretary General, Korean Institute of Electrical Engineers (KIEE); Mr Mahendra B Gurung, President and Mr Dilip Kumar Jha, Vice President, Nepal Engineers' Association (NEA); Mr WJLS Fernando, President, The Institution of Engineers, Sri Lanka (IESL); Mr Martinus van Veelen, Past President and Mr Manglin Pillay, CEO of South African Institution of Civil Engineering (SAICE) were present. The representatives of American Society of Civil Engineers (ASCE) Dr H K Banerjee, Board Member and Director (Region 10), Prof G L Sivakumar Babu, President (India Section) and Mr Sandip K Deb, President (India Section – Eastern Branch), also participated in the Meet. Dignitaries from IEI included Mr S S Rathore, President; Mr Ashok Kumar Basa, President-Elect; Mr S L Garg, Immediate Past President; Mr G Prabhakar, National Member, WFEO and Past President; Mr R P Gupta, Vice President of WFEO, Past President; Mr O P Goel,



Dignitaries at 'International Meet'. Seen (L – R) : Prof (Dr) Samiran Chowdhuri; Mr Pradeep Chaturvedi; Mr P M Chacko; Mr R P Gupta; Mr Ashok Kumar Basa; Mr Marwan Abdelhamid; Mr S S Rathore; Maj Gen R K Sanan, VSM (Retd); Mr G Prabhakar; Mr O P Goel; Mr Navin B Vasoya; Mr Narendra Singh; Prof Sung Wan Gu; Mr Sandip K deb; Prof G Sivakumar Babu; Mr WJLS Fernando; Prof Young Hyun Moon; Prof Jaromir Volf; Dr Himansu K Banerjee; Mr Dilip Kumar Jha; Mr Mahendra B Gurung; Mr Martinus van Veelen; Mr Manglin Pillay and Dr (Mrs) Marlene Kanga.

Past President; Mr G L Rao, Past President; Prof (Dr) S Choudhary, Past President; Mr P M Chacko, Past President; Mr Narendra Singh, Vice President; Mr T M G Raja, Member,



Mr Marwan Abdelhamid (in the centre) being presented with mementoes by Mr S S Rathore (on the right) while Mr Ashok Kumar Basa (on the left) looks on.

IEI Council and Chairman, Organizing Committee of the Congress; Maj Gen R K Sanan, VSM (Retd), Secretary and Director General; Mr H R P Yadav, Director, HQ Cell; and Mr Anoop Kumar, Deputy Director, International Cell at IEI Headquarters. Addressing the dignitaries, Mr Marwan Abdelhamid said that WFEO National Members should play an important role in furthering WFEO's activities. Nepal and Sri Lanka, should come forward to join WFEO as National Members. He indicated that a Task Group, to be led by IEI, would be formed at the next meeting of WFEO Executive Council at Abuja, Nigeria in Nov 2014.



## WFEO Standing Committee on 'Engineering for Innovative Technologies (EIT)'

Hosted by : The Institution of Engineers (India)



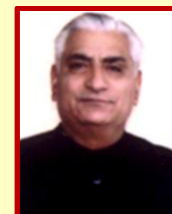
The WFEO Committee on 'Engineering for Innovative Technologies (WFEO-EIT)' has been very active since it was transferred to India from Puerto Rico at the WFEO General Assembly held in New Delhi in November 2007. The Committee is currently hosted by The Institution of Engineers (India), the Indian National Member of WFEO.



Prior to hosting WFEO Committee on Engineering for Innovative Technologies (WFEO-EIT), IEI hosted WFEO Committee on Engineering and Environment (WFEO-CEE) in India for two consecutive terms. Since then, IEI has been working towards fulfilling the objectives of the Committee in order to meet those of WFEO.

The Committee was renamed in October 2010 as the Committee on Engineering for Innovative Technologies (EIT). Under Vision and Objective, EIT has formulated strategic action plan which includes the creation of a 'Nodal Centre for Innovative Technologies' to focus on Technology Transfer, in the spirit of the United Nations Framework Convention on Climate Change (UNFCCC). The Committee on Engineering for Innovative Technologies has set its objectives in the area of technological advancements to identify suitable technologies for sustainable development, especially in the context of the UN Millennium Development Goals (MDGs) and Bali Action Plan. To ensure long-term and effective actions, the WFEO-EIT has developed its vision as follows : The WFEO Standing Committee on Engineering for Innovative Technologies (WFEO-EIT) undertakes to lead the engineering profession worldwide towards promotion and application of engineering for innovative technologies and sustainable development through interaction with global leaders and networking with various stakeholders such as governments, industry, academia, financing institutions along with civil society. The Committee has primarily two actions, Propagation and Promotion of Innovative Technologies, as well as approaching WFEO member countries in different regions preferably through networking, e-mail and website. To facilitate technological adoption, mainly clean technologies, such as Micro System Nanotechnology Smart Materials, Sensor Networks, Virtual Reality, Bio-Engineering, Sustainable Product Development, Production Innovation in Industry, Innovation for Sustainable Development, innovation in Public Systems.

The Committee is presently chaired by Mr S S Rathore, Vice President of WFEO and Immediate Past President of The Institution of Engineers (India). The Secretariat of WFEO-EIT is located at the Headquarters of The Institution of Engineers (India) at Kolkata (India) and is presently headed by Maj Gen (Retd) R K Sanan, VSM, Secretary and Director General of The Institution of Engineers (India).



Maj Gen (Retd) R K Sanan, VSM



Mr S S Rathore

**WFEO Standing Committee on  
'Engineering for Innovative Technologies (EIT)'**

**STRATEGIC PLAN (2011-2015)**

In accordance with the Mission and Objectives of WFEO in general and WFEO-EIT in particular, the Strategic Plan for the WFEO-EIT for the period 2011-2015 has been based on selected Themes, as enumerated below :

- **Innovation in Nanotechnology**
- **Innovation in Smart Materials**
- **Innovation for Sustainable Development**
- **Innovation in Public Systems**
- **Sensor Networks – Virtual Reality**

The Goals, Objectives and the Leadership details pertaining to the above Themes are listed below :

THEME	LEADERSHIP	OBJECTIVES	GOALS
Innovation in Nanotechnology	Prof (Dr) N R Bandyopadhyay Chair EIT Regional Nodal Centre Kolkata	<ol style="list-style-type: none"> <li>1. To support R&amp;D in nanotechnology at the frontiers and intersections of scientific and engineering disciplines in the form of intramural land extramural programmes targeting single investigators, multi-investigator and multi-disciplinary research teams.</li> <li>2. To foster the transfer of new technologies into products for commercial and public benefit.</li> <li>3. To develop robust, scalable, non-manufacturing methods necessary to facilitate commercialization.</li> <li>4. To develop and sustain educational resources, skilled workforce and the supporting infrastructure and tools to advance nanotechnology.</li> </ol>	<ol style="list-style-type: none"> <li>1. To advance world-class nano-technology research and development.</li> <li>2. To support the responsible development of nanotechnology.</li> <li>3. To increase focus on nanotechnology-based commercialization and related support for public-private partnerships.</li> <li>4. To influence WFEO member countries in policy development in the matter related to exploitation of nanotechnology.</li> </ol>

**WFEO Standing Committee on  
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THEME	LEADERSHIP	OBJECTIVES	GOALS
Innovation in Smart Materials	Prof (Dr) N R Bandyopadhyay Chair EIT Regional Nodal Centre Kolkata	<ol style="list-style-type: none"> <li>1. To adopt a market-oriented with the aim of addressing the need to enhance the practical realization of existing Smart Materials-based technologies, tailored to particular customer and market requirements.</li> <li>2. To carry out a worldwide comparative review of the status of this important technology, to identify the key drivers and barriers to its commercial exploitation.</li> <li>3. To develop and sustain educational resources, skilled workforce and the supporting infrastructure and tools to advance Smart Materials-based technologies.</li> </ol>	<ol style="list-style-type: none"> <li>1. To advance world-class Smart Materials-based research and development.</li> <li>2. To support the responsible development of Smart Materials-based technologies.</li> <li>3. To influence WFEO member countries in policy development in the matter related to exploitation of Smart Materials-based technologies.</li> </ol>

THEME	LEADERSHIP	OBJECTIVES	GOALS
Innovation for Sustainable Development	Mr Pradeep Chaturvedi Chair EIT Regional Nodal Centre New Delhi	<ol style="list-style-type: none"> <li>1. To create capacities for transfer, adaptation, development and demonstration of effectiveness of using innovative technologies in Sustainable Development Projects.</li> </ol>	<ol style="list-style-type: none"> <li>1. To develop presentations and training materials for using innovative technologies in Sustainable Development Projects and propagate these amongst members of WFEO-EIT and WFEO member countries.</li> </ol> <p style="text-align: right; color: red;">(continued)</p>

**WFEO Standing Committee on  
'Engineering for Innovative Technologies (EIT)'**

THEME	LEADERSHIP	OBJECTIVES	GOALS
<b>Innovation for Sustainable Development</b> (continued)	<b>Mr Pradeep Chaturvedi</b> Chair EIT Regional Nodal Centre New Delhi	2. To train engineers and other professionals in the use of innovative technologies in Sustainable Development Projects.  3. To input engineering perspective in development and promote use of innovative technologies in Sustainable Development Projects.  4. To disseminate knowledge amongst the users in WFEO member countries regarding use of innovative technologies in Sustainable Development Projects.  5. To inform and educate policy- and decision-makers about the benefits of using innovative technologies in Sustainable Development Projects.	2. To produce region-specific reports for use of innovative technologies in Sustainable Development Projects.  3. To facilitate the engagement and participation of concerned Executives regarding use of innovative technologies for Sustainable Development Projects in WFEO member countries for participation in future projects.  4. To propagate and promote innovative technologies through integration of all stake-holders including research agencies, academia, industry, etc by organizing International and Regional Conferences, Seminars, Training Workshops and Awareness Programmes.  5. To create 'Nodal Centres' for developing innovative Technologies for transfer amongst WFEO member countries.

**WFEO Standing Committee on  
'Engineering for Innovative Technologies (EIT)'**

THEME	LEADERSHIP	OBJECTIVES	GOALS
<p><b>Innovation in Public Systems</b></p>	<p><b>Mr G Prabhakar</b> <b>Chair</b> <b>EIT Regional Nodal Centre</b> <b>Hyderabad</b></p>	<ol style="list-style-type: none"> <li><b>1. To create capacities for transfer, adaptation, development and demonstration of use of innovative technologies in Public System Projects.</b></li> <li><b>2. To develop systematic approach for use of innovative technologies in Public System Projects.</b></li> <li><b>3. To disseminate knowledge amongst the users in WFEO member countries regarding use of innovative technologies in Public System Projects.</b></li> <li><b>4. To inform and educate policy- and decision-makers about the benefits of using innovative technologies in Public System Projects.</b></li> </ol>	<ol style="list-style-type: none"> <li><b>1. To develop presentations and training materials for use of innovative technologies in Public System Projects.</b></li> <li><b>2. To produce country-specific reports for future use of innovative technologies in Public System Projects.</b></li> <li><b>3. To facilitate the engagement and participation of concerned officials in use of innovative technologies in Public System Projects.</b></li> <li><b>4. To propagate and promote innovative technologies through integration of all stake-holders including research agencies, academia, industry, etc by organizing International and Regional Conferences, Seminars, Training Workshops and Awareness Programmes.</b></li> <li><b>5. To create 'Nodal Centres' for developing innovative technologies in Public Systems and their transfer amongst WFEO member countries.</b></li> </ol>



**WFEO Standing Committee on  
'Engineering for Innovative Technologies (EIT)'**

THEME	LEADERSHIP	OBJECTIVES	GOALS
<p><b>Sensor Networks – Virtual Reality</b></p>	<p><b>Dr L V Muralikrishna Reddy</b> <b>Chair</b> <b>EIT Regional Nodal Centre</b> <b>Bangalore</b></p>	<ol style="list-style-type: none"> <li><b>1. To create capacities for development and demonstration of innovative technologies in application of Wireless Sensor Networks (WSN) for creating Virtual Reality Infrastructure Projects.</b></li> <li><b>2. To train engineers and other professionals in the use of innovative technologies in application of Wireless Sensor Networks (WSN) for Virtual Reality Infrastructure Projects.</b></li> <li><b>3. To disseminate knowledge amongst the users in WFEO member countries about use of innovative technologies in application of Wireless Sensor Networks (WSN) for Virtual Reality Infrastructure Projects.</b></li> <li><b>4. To inform and educate policy- and decision-makers the benefits of using innovative technologies in application of Wireless Sensor Networks (WSN) for Virtual Reality Infrastructure Projects.</b></li> </ol>	<ol style="list-style-type: none"> <li><b>1. To develop presentations and training materials for using innovative technologies in application of Wireless Sensor Networks (WSN) for creating Virtual Reality Infrastructure Projects.</b></li> <li><b>2. To produce region-specific reports for future use of innovative technologies in application of Wireless Sensor Networks (WSN) for creating Virtual Reality Infrastructure Projects.</b></li> <li><b>3. To propagate and promote innovative technologies in application of Wireless Sensor Networks (WSN) for Virtual Reality Infrastructure Projects.</b></li> <li><b>4. To propagate and promote innovative technologies through integration of all stakeholders including research agencies, academia, industry, etc by organizing International and Regional Conferences, Seminars, Training Workshops and Awareness Programmes.</b></li> <li><b>5. To create 'Nodal Centres' for developing innovative technologies for transfer amongst WFEO member countries.</b></li> </ol>



## Indian Member Committee of World Federation of Engineering Organizations [IMC-WFEO]



Hosted by : The Institution of Engineers (India)

The Institution of Engineers (India), National Member of World Federation of Engineering Organizations (WFEO), is hosting the Indian Member Committee of WFEO.



The IMC-WFEO consists of one Chairman (as nominated by President of IEI), one Co-Chairman (President of IEI himself), Four Members of the Governing Council of IEI (as nominated by President of IEI), along with the Representatives of selected Ministries and other organizations of the Government of India, Research Agencies and Public Sector Undertakings (as identified by IMC-WFEO for the purpose of induction to the Committee), and the Member Secretary of IMC-WFEO, i.e. the Secretary and Director General of IEI.

The Member Organizations of IMC-WFEO include Ministries of Urban Development, Human Resource Development, Science and Technology, Environment and Forests, New and Renewable Energy, Government of India; Bureau of Energy Efficiency; Council of Scientific and Industrial Research; Planning Commission; Central Pollution control Board; Housing and Urban Development Corporation Limited; School of Planning and Architecture; Central Public Works Department; Central Electricity Authority; Delhi Technological University; Bharat Heavy Electricals Limited; etc.

The objectives of the IMC-WFEO are as follows : a) To provide linkage between IEI and WFEO and its Regional Group FEISCA on all matters relating to policy, intellectual inputs and operations; b) To develop information on the policies concerned with engineering and technology related to the society; c) To promote leadership to the engineering profession in addressing issues of concern to both the public and the profession; d) To liaise with organizations and institutions at the national and international levels which are under the umbrella of WFEO; and e) To plan and undertake activities that can promote the cause of the WFEO.

The IMC-WFEO usually meets twice in a calendar year at New Delhi.

**WECSI 2014**  
Abuja - Nigeria 2-7 November 2014

**Forthcoming WFEO Executive Council / Standing Committees' Meetings and World Engineering Conference on 'Sustainable Infrastructure' - WECSI 2014**



# WFEO General Assembly and World Engineers' Summit

Singapore, 09-15 September 2013

Hosted by : The Institution of Engineers, Singapore (IES)



The World Federation of Engineering Organizations (WFEO) and The Institution of Engineers, Singapore (IES) jointly signed the 'Singapore Declaration' during the above event.



## Singapore Declaration "Engineering for a Sustainable Future" September 14, 2013

### Background

The World Federation of Engineering Organizations (WFEO) and its national member, The Institution of Engineers, Singapore (IES) believe that emerging global challenges over the last decade, including the financial crisis, population migration, food and energy crises, and natural disasters, have reinforced the need to secure and fulfill internationally agreed commitments to sustainable development.

WFEO and IES also believe that progress toward achieving the UN Millennium Development Goals is necessary to address water and food scarcity. For such commitments to be realized, critical infrastructure must be adapted to the impacts of climate change and resilient to natural and man-made disasters.

### The Role of Engineers

We commit to lead internationally on the delivery of sustainable infrastructure. Engineers of the 21st century are called on to play a critical role in contributing to peace and security in an increasingly challenged world. Engineers have an obligation to protect cultural and natural diversity, and they are central to the planning, design, construction, operation, maintenance and commissioning of systems and infrastructure networks that underpin civil society, economic activity, protect human health and welfare. Emerging challenges have reinforced the key role of these networks in enabling global societal resilience. Innovations by engineers are required in the design and operation of advanced devices and systems that can ensure efficient energy conversion and conservation; provide solutions to the production, storage and distribution of energy, food and water; facilitate human mobility; support trade and economic development; and sustain livable cities of the future.

WFEO and IES are committed to an engineering profession able to address the global challenge of sustainable development arising from the impact of climate change. Action by engineers is essential. Society needs the skills of engineers to attain sustainable development, yet engineers must proactively engage with the global political process to apply their knowledge and expertise. We recognize that engineers cannot deliver this vision on their own. Engineers must develop new skills for a changing world, foster greater collaboration with other professionals, and promote multidisciplinary approaches. Engineers are committed to provide the tools and advice to governments and policymakers at national, regional, and international levels on the skills and infrastructure required for a sustainable future.

Recognizing the central role of their profession in addressing global challenges, regularly reviewing action plans and undertaking a range of activities to advance sustainability in infrastructure, WFEO Executive Council have adopted and approved the Model Code of Practice for Sustainable Development and Environmental Stewardship. Details of this priority and action plan are listed in Annex A.

### Commitments

Within the following areas of leadership, the WFEO members commit to :

- Developing and collaborating on national sustainable systems and infrastructure and resilient development strategies and action plans in their economic regions;
- Encouraging engineers to engage in building engineering capacity among members through active collaboration with development organizations such as the World Bank and other related assistance organizations in their economic regions;
- Working through representatives of their economic regions to coordinate through WFEO engineering views that the World Federation of Engineering Organizations effectively influences programs on sustainable infrastructure and communities in UNESCO, the United Nations, the World Bank, international financial institutions and other environmental bodies.

Signed on September 14, 2013 in Singapore :

**Professor Chou Slaw Kiang**  
President  
The Institution of Engineers, Singapore

**Eng. Adel Al-Kharafi**  
President  
World Federation of Engineering Organizations



### **ANNEX A :**

#### ***Engineering priorities and action***

Recognizing the central role of their profession in addressing global challenges, members have adopted and regularly reviewed action plans and undertaken a range of activities to advance sustainability of cities and the global economy. Progress in line with commitments is exemplified in adapting critical infrastructure, utilizing environmental accounting tools, addressing the crisis in the energy-food-water nexus and delivering on the proposed UN Sustainable Development Goals, as well as protecting our societies from natural disasters.

#### ***Environmental, social and economic impacts and costs — the triple bottom line***

WFEO and IES are committed to improving methods for identifying and considering all of a project's environmental, social and economic costs and impacts throughout its life-cycle. Practical approaches should be developed that would alter conventional accounting practices to factor in the direct and indirect environmental costs of any system, plant or facility through its life-cycle of operations.

#### ***Mitigation and Adaptation to climate change***

To address climate change the engineering profession is applying the principles of sustainability, energy efficiency and innovation to the design and operation of mitigation technologies. In addition, engineers must develop infrastructure capable of adaptation to the impacts of climate change. Recognizing this responsibility, WFEO and IES members are committed to collecting data on design and infrastructure both nationally and, through collaboration, internationally to providing informed opinion on their experience.

#### ***To make our societies resilient to natural disasters***

Since antiquity, the world has faced a great number of natural disasters : earthquakes, tsunamis, floods, typhoons, hurricanes, tornados and volcanic eruptions. Recently, we have become aware of rapid climate change that might lead to much larger-scale natural disasters. Engineers are required to play important roles in creating smart technological solutions to enhance personal mobility, communications, and security, and developing safe and secure infrastructure, resilient to natural and man-made disasters by sharing and growing knowledge and experience through collaboration.

#### ***Sustainable Development Goals***

WFEO and IES members support the internationally agreed upon development goals contained in the Millennium Declaration as they apply to improving the quality of people's lives around the world through science and engineering. The engineering societies / institutions will work with each other and with domestic and international organizations to engage engineers in addressing the needs of the poor through capacity building and the development of sustainable and appropriate solutions to poverty.

By helping meet the goals of the sustainable development, the engineering profession contributes to a world where all people have access to the knowledge and resources to meet their basic human needs and promote sustainable development. Included are such areas as water supply and sanitation, food production and processing, housing and construction, energy, transportation and communication, income generation, and employment creation.

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# WORLD FEDERATION OF ENGINEERING ORGANIZATIONS

**COMMITTEE ON ENGINEERING FOR INNOVATIVE TECHNOLOGIES**  
**[WFEO-EIT]**

**&**

**INDIAN MEMBER COMMITTEE**  
**[IMC-WFEO]**

**WFEO-EIT / IMC-WFEO Chair**

**Mr S S Rathore**

Vice President, WFEO and  
Immediate Past President, The Institution of Engineers (India)

**WFEO-EIT / IMC-WFEO Secretariat**

**Maj Gen (Retd) R K Sanan, VSM**

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