

# International Engineering Sourcing Show VI

## POST SHOW REPORT ON INNOVATION & TECHNOLOGY AT IESS VI

16-18 MARCH 2017, CHENNAI TRADE CENTRE, CHENNAI



Department of Heavy Industry  
Ministry of Heavy Industries & Public Enterprises  
Government of India

SUPPORTED BY



Department of Scientific & Industrial Research  
Ministry of Science & Technology  
Government of India

HOST STATE



Government of Tamil Nadu

FOCUS REGION

FLANDERS INVESTMENT & TRADE



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# IESS VI: ACCOMPLISHMENTS AT A GLANCE



**Inauguration of IESS VI: (from left) Mr B Sarkar, Executive Director & Secretary, EEPC India; Dr. Yaroslav Tarasyuk, Trade Commissioner of Russian Federation to India; Mr B S Bhalla, Joint Secretary, Department of Commerce, Government of India, Mr Girish Shankar, Secretary, Department of Heavy Industry, Government of India; Mr Denis Manturov, Honorable Minister of Industry & Trade, Russia; Ms Nirmala Sitharaman, Honorable Commerce and Industry Minister, India; Mr T S Bhasin, Chairman, EEPC India; Mr. Mangat Ram Sharma, Principal Secretary MSME, Government of Tamil Nadu; Mr Pankaj Chadha, Senior Vice Chairman, EEPC India; Mr Rakesh Shah, Chairman-PED & Former Chairman EEPC India**

- Visitor footfall: 10,000
- Exhibitors: 336
- Exhibition area: over 10,000 sqm

### Exhibitor Profiles

Industrial Supply & Subcontracting | Metal & Shop Floor | Industrial & Electrical Machinery |Automobiles And Auto Components| Innovation & Technology

### Feedback and estimates

*Estimates based on 181 respondents. Total feedback from 246+*

- 15 sessions
- 100 speakers
- 500 delegates from 100 nations
- two MOUs
- 10,436 business contacts
- Average 58 contacts per participants
- 83% new contacts
- Orders booked during show: US\$684610
- Total business enquiries: 20,652 totalling US\$8.5 million

### International delegation participation

Algeria, Benin, Botswana, Cameroon, Egypt, Ethiopia, Ghana, Ivory Coast, Kenya, Malawi, Namibia, Nigeria, South Africa, Sudan, Tanzania, Uganda, Zambia, Indonesia, Philippines, Singapore, Thailand, Vietnam, Armenia, Russian Federation, Ukraine, Uzbekistan, Belgium, Czech Republic, Finland, Germany, Luxembourg, Serbia, Spain, United Kingdom, Brazil, Colombia, Guatemala, Bahrain, Iran, Jordan, Oman, Saudi Arabia, UAE, Canada, USA, Australia, Bangladesh, Nepal, and Sri Lanka.

**It was great for us to share some part of what IIT Madras partnership in Industry has been and the heartening results we are seeing for the benefit of Industry. – IIT Madras**



## GENESIS OF THE INNOVATION AND TECHNOLOGY VERTICAL AT IESS

TECHNOLOGY is the DNA of a successful engineering industry, whose performance mirrors the industrial progress of the nation. Only 25% of Indian companies are capable of executing manufacturing at Industry 2.0 and 3.0 (commonly known as the system of production and distribution) levels. Indian engineering needs to move up the value chain by making a gradual shift to R&D, innovation, and development of new products and services.

Over the years, the International Engineering Sourcing Show (IESS) has emerged as a global platform for the Indian engineering sector to showcase its technological capabilities. The fifth edition of IESS marked the beginning of discussions for technology upgradation as a major area for 'Intervention, Innovation and Upgradation' in India to showcase and elevate its global manufacturing competitiveness.

In the sixth edition of IESS, we introduced a separate vertical on 'Innovation and Technology' in the exhibition. The objective of this vertical was to create an international technology sourcing platform through which innovations and technologies related to the Indian engineering sector would be showcased to

sensitize domestic industry and also promote India as a growing global leader in innovation and technology. Through this platform, the event intended to host international technology buyers, suppliers and agencies to enable international collaborations for technology development and transfer to and from India.

The technology upgradation initiative to boost engineering exports is led by the Department of Commerce and is supported by the Office of the Principal Scientific Advisor to the Government of India and various other Government Ministries such as the Ministry of Science and Technology, Department of Heavy Industry, Ministry of Medium & Small Scale Enterprises, etc. Under this initiative, the Department of Commerce envisages to create a common platform for R&D labs and industry members to conceptualize and develop cutting-edge technologies to promote engineering exports.

In the seventh edition of IESS next year, the Ministry of Commerce and Industry proposes to host a mega pavilion on 'Innovation and Technology', apart from seminars, and training programmes on Government schemes, etc.

## HOW INNOVATION AND TECHNOLOGIES COMPLEMENTED IESS VI



**A biometric inauguration ceremony**

- Highlighted latest technology trends and opportunities for transfer, commercialization etc for both manufacturing and larger societal applications
- Complemented overall product categories of the exhibition, and therefore a major visitor attraction
- India's technological position and opportunities in the global engineering sourcing supply chain
- Projected India's growing foothold in hitech and advanced engineering manufacturing
- Enhanced India's global position as a reliable engineering sourcing destination
- Created interest in all participants at the show such as the Government, national and international industry professionals, technology enthusiasts, entrepreneurs and students, etc
- Promoted Chennai engineering clusters as major markets for technology promotion
- Spread awareness that technology transfer, collaborations and commercialization is integral to globalizing manufacturing competitiveness
- Facilitated awareness about Government schemes for technology acquisitions, transfers and upgradation

## EXHIBITORS AT THE INNOVATION & TECHNOLOGY PAVILION IN IESS VI

Booth No.	Exhibitor	Website
H2-G07	Automation Industry Association	<a href="http://www.aia-india.org">www.aia-india.org</a>
H2-G01	Automotive Research Association Of India	<a href="http://www.araiindia.com">www.araiindia.com</a>
H2-H01, G02	Bhabha Atomic Research Centre	<a href="http://www.barc.gov.in">www.barc.gov.in</a>
H2-F02	Central Manufacturing Technology Institute	<a href="http://cmti-india.net">cmti-india.net</a>
H2-H03	CSIR-Central Electronics Engineering Research Institute	<a href="http://www.ceeri.res.in">www.ceeri.res.in</a>
H2-F04	Department of Heavy Industry	<a href="http://www.dhi.nic.in">www.dhi.nic.in</a>
H2-H09	Fluid Control Research Institute	<a href="http://www.fciiindia.com">www.fciiindia.com</a>
H2-H07	Indian Institute of Technology Bombay	<a href="http://www.iitb.ac.in">www.iitb.ac.in</a>
H2-G08	Indian Institute of Technology Madras	<a href="http://www.iitm.ac.in">www.iitm.ac.in</a>
H2-I11,H12	Indian Space Research Organization	<a href="http://www.isro.gov.in">www.isro.gov.in</a>
H2-G10	International Advanced Research Centre For Powder Metallurgy And New Materials, Hyderabad	<a href="http://www.arci.res.in">www.arci.res.in</a>
H2-MSME Tool Room	MSME Tool Rooms and Tech Centres	<a href="http://www.dcmsme.gov.in">www.dcmsme.gov.in</a>
H2-L01	Smart Pump Project - Sitarc / Siema	<a href="http://www.sitarc.com">www.sitarc.com</a>
H2-F08	VR Creative Studio	<a href="http://www.vrcreatives.com">www.vrcreatives.com</a>

## VIP VISITS TO TECHNOLOGY PAVILION



**Mr Denis Manturov, Honorable Minister of Industry & Trade, Government of Russia, Ms Nirmala Sitharaman, Honorable Commerce and Industry Minister, Government of India, Mr Girish Shankar, Secretary, Department of Heavy Industry, Government of India visiting the BARC booth**



**Dr R Chidambaram, Principal Scientific Advisor to the Government of India (centre) visiting the Indian Institute of Technology Madras booth**



## MAJOR DISPLAYS AND HIGHLIGHTS FROM INDIA

*IESS VI displayed a fair collection of technologies with wide applications in the engineering sector. Those who participated were from India's premier R&D Labs, academic research institutes, testing labs and government ministries promoting technology transfer, acquisition and upgradation in industry.*

*Efforts were made to promote the Innovation and Technology Pavilion through prototypes, scale models, and live demonstrations.*

*Below are some of the major participants and their display profiles:*



### BARC

Agriculture and bioscience; engineering and advanced instrumentation; advanced medical technologies; radiation technologies; health & environment technologies; chemical engineering; water management; nuclear technologies for industry applications; robotics; automation; technology available for transfer, armour vests, etc

### Automation Industry Association

RFID solution for tracking and tracing in warehousing, retail, food, pharma, automotives, etc; Solutions for machine and process automation, motion control, HMI and integrated safety technology; IO-link is a standardized technology for sensors and actuators communicating with I/O terminals, specified in international standards, IEC 61131-9; Traceability solutions; Training facilities include advanced sensors, actuators, PLC systems, SCADA system, mobile robots and industrial robots



### IIT Madras

Development of 5 kW to 25 kW machine tools, thermal compensation strategy for CNC lathe, next generation high precision grinding machine tools, development of 5 axes CNC multitasking machine (MTX), development of 5 axes CNC universal machining centers (MX), development of ultra precision micro machining centre, advanced manufacturing technology development centre, development of hydrostatic guide ways and spindles, automation and grinding process intelligence, orbital motion mechanism for abrasive cutting, direct drive abrasive cutting machine, multi-station robotic grinder and polisher, industrial research consultancy, research park and technology transfer, etc



### IIT Bombay

Diagnostic devices – Su Check and Uchek, energy conservation systems, smart ultrasonic water meter, component machining, industrial research and consultancy centre, IP patenting and technology transfer, machine status machine using IIOT, solar power technology, wearable health monitoring technology, novel switched reluctance motor drive for ceiling fan, beagle Z handheld explosive detector, low-cost soil monitoring system for irrigation control, 3D printing, 3D printing of metallic components, smart foundry, cryocoolers

### CSIR-Central Electronics Engineering Research Institute

Economical handheld milk analyser which can detect adulteration in milk in 40-45 seconds for cost as low as 10 paise, Mercury-free, eco-friendly UV lamp for bacterial disinfection of water with 100% deactivation in 10 seconds

Low power, portable LTIVA micro-hotplate for applications such as micro-farming, electronic warm shoe and USB operated heating platform, especially for armed forces working in high altitude, low temperature areas, Smart electronic devices for IoT applications, Microwave devices for satellite communication, electricity generation through nuclear fusion, particle accelerators, cargo scanning and medical diagnostic systems.



### Central Manufacturing Technology Institute

Development of Advanced Technologies for Hi Tech Shuttle less Looms, Aerospace Labs, Special Purpose Test Rigs, High Temp & Low Temp Performance Test Rigs, Pressure Impulse Test Rigs, Heat Exchanger Pressure Cycling Test Rigs, Test Rigs for Industrial Hyd. Elements, Skill Development & Training Programmes on CNC Machines, Shopfloor, E-Foundry, Automation, Digital Design, Special Purpose Machine Development, Mechatronics, Metrology, Advanced Manufacturing, Precision Engineering, Nano Technology, R&D Machine Health Management System, Sensor Technology Development Facilityetc





**Automotive Research Association of India**

Designing, conceptualizing, prototyping advanced engine applications, meeting EUROIV emission Norms with Common rail electronic diesel control. Design and development of engine components and subsystems, durability trials, emission control and specific power upgrades. Certification for 2 Wheelers, 3 wheelers and 4 wheelers. The EMI/ EMC laboratory of AED accredited as per ISO 17025 is offering its evaluation testing services to the auto component, auto electronics, embedded & IT industry. Standards formulations & world class testing & validation laboratories for metallurgical and fatigue testing, product and process simulation and computer aided engineering in forging.

**Fluid Control Research Institute**

Airflow Laboratory, Water flow laboratory, Centre for Water management, Large Water Flow Laboratory, Oil Flow Laboratory, Special Assignments and Tests including Cryogenic Test, Endurance Test, Fire Testing of Valves, High Pressure and High Temp facility, Hydraulic Impulse Testing, LOCA/MSLB Testing for Nuclear Components



**ARCI**

Lithium Ion Battery Fabrication Line for EV Application, Tandem Solar Absorber Tubes, Broad band Anti Reflective Coatings, Dye Sensitized Solar Cells, Perovskite Solar Cells, Nanostructured CIGS Solar Cells, Dust Repellant Coatings for PV Panels, Laser Processing of Materials, Ultrafast laser micromachining, laser surface hardening treatment, laser drilling, welding, Detonation Spray Coatings, Micro Arc Oxidation, Silica Aerogels, Decorative Coatings on Metals, Galss and Ceramics, Hard Coatings on Plastics, Nano Silver Impregnated ceramic water filter candle. Nano Zinc Oxide Varistors, etc



**VR Creative Studio**

Development of Virtual Reality environment for industries, shop floor and manufacturing for subsequent applications such as training, designing, product development and simulations etc

**Department of Heavy Industry**

Scheme for Global Competitiveness of Capital Goods Sector – Technology development and acquisition, Industrial infrastructure and Common facility / test centres; Capital Acquisition Fund Programme; Application Procedures; New Capital Goods Policy and its schemes and interventions.



**12 MSME Tool Rooms and Tech Centres**

Displaying technologies & schemes on Designing, Manufacturing & Training on Tools & Dies, Precision and Aerospace Components, Defense Components, Testing Capabilities, 3D Printing and Hi Tech Training & Tools Engineering, Press Tools, Plastics Injection Moulds, Die Casting dies, Jigs, Fixtures & Gauges along with other precision job work on CNC machining center, CNC EDM and Wire-cut, CNC Programming, CAD/CAM, precision machining and CNC machines etc. Training personnel in the areas of electronics, IT, including emerging technologies; Common facilities; Entrepreneurship Development; Market research and development, Technological up-gradation of small scale castings & forging industries.





**SITARC/ SIEMA**

Display of Multipurpose Smart Pumps Project implemented by the Department of Heavy Industry, Department of Commerce in association with EEPC India and industry bodies. Testing and calibration laboratories services for mechanical and electrical, metrology, etc



**Indian Space Research Organization**

Display of scaled models of Mangalayan, Chandrayaan-2, Astrostat, PSLV, GSLV Mk3, etc, along with the scope of industry collaborations

**MAJOR INTERNATIONAL DISPLAYS AND HIGHLIGHTS**



**PARTNER COUNTRY – RUSSIA IN INNOVATION & TECHNOLOGY**

**Participating Organizations**

- Pribor
- Scientific And Production Association
- Mechanical Engineering Research Institute
- Gorevsky Gok Group
- Geofizika
- Radiosvyaz
- Nordavind
- Synthesizer Nn
- Rosatom
- Precision Farming Systems
- Mipakt Millenium Holding
- Aerob
- Vidicor

**Areas of technology interests**

Aerospace, arms and ammunition, artillery ammunition; mining and smelting productions; special purpose equipments for and socio-economic purpose; radio-engineering; smart devices for health monitoring and diagnosis of disease at an early stages; electronic modules for radar, of radio and telecommunications systems; nuclear technology; uranium mining and enrichment, nuclear fuel fabrication, equipment manufacture and engineering, operation of nuclear power plants, and management of spent nuclear fuel and nuclear waste; GLONASS/GPS precision agriculture or precision farming; advanced aerospace technologies and other engineering and mechanical technologies, etc



Note: Some Photographs below are from external sources





# KEY TAKEAWAYS FROM THE INNOVATION & TECHNOLOGY PAVILION AT IESS VI

- Participating labs and institutes committed to repeat participation in future editions
- The technology Scale Models, Displays and prototypes emerged a major draw for the visitors.
- A need was felt for dedicated technical team to address the queries of the visitors.
- Many R&D exhibitors and visitors were interested in associating with EEPC India to promote their technologies on a continuous basis.
- The potential for promotion of technologies at cluster level received significant boost with the amount of interest generated at the event.
- There is a significant potential for R&D Institutes and Technologies in the allied engineering sectors such as Agriculture, Food Processing, Medical Technologies and nuclear sciences etc
- International participation also witnessed significant number of Innovation and Technology display from Russia Partner Country. The sectors matched with Indian counterparts, thus there is a significant scope of promoting International Technology providers in future
- Innovation and Technology Pavilion has been envisaged to be much BIGGER & BETTER in Size and Scale at the 7th edition IESS

# OVERALL FEEDBACK SURVEY RESULT – INNOVATION & TECHNOLOGY PAVILION EXHIBITORS

## Synopsis of the feedback on number of contacts generated

- Total Contact Made – 810
- Total New Contacts Made – 638
- Highest No. Of Contacts – BARC – 300
- Lowest No. Of Contacts – CSIR-CEERI – 25
- All respondents who submitted feedback forms were interested in participating in future editions

# GROUNDWORK FOR INNOVATION & TECHNOLOGY AT IESS

## Innovation & Technology Brochure

**International Engineering Sourcing Show**  
16-18 March 2017, 10 a.m.–6 p.m.  
Chennai Trade Centre, Chennai

**INTERVENTION, INNOVATION, UPGRADATION**  
VISIT  
• THE INNOVATION & TECHNOLOGY PAVILION, HALL NO. 2  
ATTEND  
• THE NATIONAL CONFERENCE ON TECHNOLOGY, 17 MARCH 2017, 10 A.M.

**IESS VI conference schedule**  
Venue: Chennai Trade Centre, Chennai

Time	Main Conference Hall	Conference Room A, Hall 1	Conference Room B, Hall 1	Conference Room C, Hall 2	Conference Room D, Hall 2
<b>16 March 2017</b>					
10 a.m.–12 noon	Inauguration of International Engineering Sourcing Show VI				
2 p.m.–5:30 p.m.	India-Russia Business Forum	Vendor Development session with Indian IPDs	Global Investment Forum	Global Sourcing Meet by Schwab, Dettmer (IPMA, PwC, IIS)	
<b>17 March 2017</b>					
10 a.m.–1 p.m.	Global Sourcing Meet by Siemens	Global Opportunities for Technology Collaborations with India	Session on International Equivalence of Accreditation & its benefits to the industry	Indo-Russian scope of industrial manufacturing cooperation	
2:30 p.m.–5:30 p.m.	Global Sourcing Meet by Kubota Corp	Global Opportunities for Technology Collaborations with India	Session on ZED certification – Roadmap to Global Competitiveness	Making MEMES internationally competitive	
10 a.m.–5:30 p.m.	Indian School of Business-EEPC India Executive Knowledge Series Sector registration: Fostering Growth by Prof. Dakshin Kamala Chelvan, Dean and Professor of Organisational Behaviour Leadership: The Art of Empowerment by Prof. S. Ramnarayan, Professor of Business, Organisational Behaviour Venue: IES Conference Hall, Chennai Trade Centre				
<b>18 March 2017</b>					
10 a.m.–1 p.m.	Global Sourcing Meet by Yanmar	Training Session on e-procurement	Industrial Design Forum		
4 p.m.	IESS VI closing ceremony & Award distribution				

Register for conferences at: <https://www.iesshow.in/conference/#>

Seminar partners:

Attend the ISB-EEPC India Executive Knowledge Series talks on 17 March 2017

## Brand Positioning

- High Rise Technology Pavilion Boards
- LED Lit Fascia Names of Exhibitors
- 1-2-3 side open booth options
- Major focus on Technology Demonstrations, prototypes and scale models







## CREATION AND PUBLICATION OF CONFERENCE CONCEPT NOTE



Dr R Chidambaram, Principal Scientific Advisor to the Govt. of India reading the EEPIC India Concept note on Technology 'Global Opportunities for Technology Collaborations with India'

### The Concept Note on 'Global Opportunities for Technology Collaborations with India' highlighted:

- Brief Profile of Indian Engineering
- Relevance of Technology in Indian Engineering Manufacturing Scenario
- Initiative by Ministry of Commerce for Technology Upgradation and Boosting Engineering Exports
- List of Important Government Ministries & Agencies involved in International Technology Collaborations

### Over 150 copies were circulated at IESS VI



## EEPC-DSIR ONE DAY CONFERENCE – 'GLOBAL OPPORTUNITIES FOR TECHNOLOGY COLLABORATIONS WITH INDIA'

Supported by Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India



Addressing the gathering: Dr R Chidambaram, Principal Scientific Advisor to the Government of India, delivering the special address

Guests on chairs (from left): Ms Anima Pandey, Regional Director, EEPC India, Mr Lokesh Siddappa, Automation Industry Association, Mr B S Bhalla, Joint Secretary, Department of Commerce, Government of India, Mr Anupam Shah, Former Chairman & Member Technology Committee, EEPC India, Mr Sanjeev Kawishwar, Indian Wind Turbine Manufacturer Association, Mr Vimal Kumar Varun, Scientist 'F', Department of Scientific and Industrial Research, Government of India, Mr Mahesh Desai, Committee Chairman, R&D, Technology & Skill Development EEPC India.

**TOTAL SPEAKERS: 8 | TOTAL PARTICIPANTS: More than 100 | TOTAL SESSIONS – 4**

### BACKGROUND

The Government of India is implementing a comprehensive strategy to boost investments in the manufacturing sector. Under the planned development approach, series of initiatives are outlined and being implemented in a phased manner. It includes a pentagon of industrial corridors, several national initiatives inviting global investments such as Make in India, Smart

Cities, Solar Mission, High Speed Railways etc which aim at introducing frontier engineering technologies to uplift the infrastructure and economy over the medium term. It is estimated that overall these initiatives envisage investments of over USD 7 trillion over the next five years in India.

EEPC-DSIR one day seminar on 'Global Opportunities

for Technology collaborations with India'

In one of its kind platform ever organized, the EEP-DSIR One Day Seminar invited top speakers from Government officials, technology evangelists, Technology Experts on one platform to deliberate and discuss upon the emerging trends and opportunities in Indian manufacturing technology sector.

The deliberations highlighted the tailwinds of technologies trends and challenges in the niche engineering sectors such as renewable energy and Industrial automation etc. Further, the conference highlighted upon various Government schemes for technology R&D, transfer and commercialization encouraging international trade and investments in latest technologies in India.

**PROGRAMME**

**17.03.2017, Hall No 1, Conference Room No. B**

**Session 1: Outlining Vision of the Initiative of Technological Upgradation and the way forward**

- 10.00 – 10.10 am: Mr Anupam Shah, Former Chairman, Committee Member Technology Upgradation Initiative, EEP-India
- 10.10 – 10.20 am: Mr Mahesh Desai, Committee Chairman, R&D and Skill Development, EEP-India
- 10.20 – 10.35 am: Mr Vimal Kumar Varun, Scientist 'F', Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India
- 10.35 – 10.50 am: Mr Bhupinder Singh Bhalla, Joint Secretary, Department of Commerce, Ministry of Commerce and Industry, Government of India
- 10.50 – 11.30 am: Dr R Chidambaram, Principal Scientific Advisor to the Government of India

**Session 2: Industry's voice for existing technology gaps and requirements to overcome technological challenges**

- 11.30 -11.45 am: Mr Lokesh Sidappa, Senior Vice President, Pepper & Fusch, Automation Industry Association
- 11.45-12.00 pm: Mr. Sanjeev Kawishwar, Sr. Vice President of Regen Powertech Pvt. Ltd. Indian Wind Turbine Manufacturing Association

**Session 3: International Opportunities for Innovation and Technology Partnerships – Panel Discussion with "Innovation Birmingham"**

12.00 – 13.00 pm

- Cliff Dennett, Head of Business Development, Innovation Birmingham Campus
- HarbyGarchayFounder, Blackbelt Defence
- Leigh PurnellFounder, Petalite
- Robert SugarFounder of Urban Hawk
- Jaz-SomalCEO, Data Umbrella

**Session 4: Government of India Schemes for National and International Technology Collaborations and Technological Upgradation**

- 14.30-14.50 pm: Dr Vimal Kumar Varun, Scientist 'F' DSIR
- 14.50-15.15 pm: Mr Sanjay Chavre, Senior Development Officer, Department of Heavy Industry, Government of India
- 15.15-16.00 pm: Mr V Ramakrishnan, Deputy Director, MSME – DI, Chennai

**KEY SPEAKERS**



**Addressing the gathering: Mr BS Bhalla, Joint Secretary, Department of Commerce, Ministry of Commerce & Industry, Government of India**



**Dr Vimal K Varun, Scientist 'F', DSIR, Government of India**



**Mr Sanjay Chavre, Senior Development Officer, DHI, Government of India**



**Mr V Ramakrishnan, Deputy Director, MSME – DI, Chennai, Government of India**



**Mr Lokesh Siddappa, Automation Industry Association**





**Mr Sanjeev Kawishwar, Indian Wind Turbine Manufacturers Association**



**Mr Cliff Denet, Innovation Birmingham, UK**



**Mr Martin Stevens, Innovation Birmingham, UK**



**Panel Discussion Session with Innovation Birmingham, UK**

## THE KEY TAKEAWAYS

- India's high technology engineering projects such as its nuclear tests; Large Hadron Collider Project, Geneva; Tokomak Thermonuclear Reactor for Power Generation, etc, have enhanced India's position and capabilities in the global engineering market.
- A national level trusted data platform for dissemination of knowledge and information is the need of the hour.
- EEPIC / DOC may look to facilitate transfer of knowledge, accessibility of equipment, allowing affordable access for the use of equipment in the cluster.
- Academic institutes / R&D labs in the proximity of clusters can play a vital role in technology upgradation.
- There is need to create a system which is part micro financed, part insurance for MSME, so that those who introduce new technologies cover the risk and their quality and their need for repayment of loans can be facilitated. Startups can also be facilitated to utilise foreign manufacturing facilities for R&D technology development.
- The strategies adopted by the Ministry of Defence which promotes international joint ventures with progressive indigenization is worth emulating for technology and cluster upgradation.
- International technology cooperation should also help 'Make in India' and not just the development of technology in India by foreign technology R&D labs. – *Dr R Chidambaram, Principal Scientific Advisor to the Government of India*
- Patent information helps to keep an eye on competitors and monitoring technology trends in global markets. – *Dr Vimal Kumar Varun, Scientist, F, Department of Scientific & Industrial Research, Government of India*
- R K Transonic Engineers Pvt Ltd, an NCR-based manufacturer has developed an ultrasonic food cleaning machine with ozone technology that gives 95% results. The technology is highly affordable and has great potential in India as well as overseas markets such as EU, Asia, Africa and Latin America, etc
- Industrial Automation Technologies have significant potential in Indian manufacturing. Technologies such as industrial sensors; RFID solution for Tracking & Tracing and IO-link can significant boost efficiencies of a variety of manufacturing processes.
- The renewable energy sector is a highly potential area for technology interventions. The potential technology intervention areas are in designing, prototyping, manufacturing components and customization according to project implementation sites. In addition, international

- certifications are also crucial for every stage of product development and project implementation.
- UK and India have significant scope for collaborations in startups, precision and hitech engineering. India can potentially fulfill the skill shortage requirements in the UK. BREXIT may not deter growing collaborations between India and UK in the future as BREXIT would allow UK to access commonwealth markets more liberally which until now had been obstructed by EU regulations.
- 3D Printing and Digital Manufacturing are the emerging disruptive technologies of future.
- The Government of India promotes various schemes for technology development, transfer, acquisition and commercialization through various Ministries:
  - » **The Department of Scientific & Industrial Research promotes four major schemes namely**
    - \* Access to knowledge for Technology Development and Dissemination (A2K+)
    - \* Building Industrial R&D & Common Research Facilities (BIRD-crf)
    - \* Patent Acquisition and Collaborative Research (PACE)
    - \* Promoting Research in Individuals, Start ups and MSME (PRISM)
  - » **The Department of Heavy Industries promotes the Scheme for Global Competitiveness of Capital Goods Sector which includes:**
    - \* Advanced Centres of Excellence for R & D and Technology Development with National Centres of Excellence
    - \* Integrated Industrial Infrastructure Facilities
    - \* Common Engineering Facility Centers
    - \* Test & Certification Centre for Construction, Earthmoving, Material Handling and Mining Machinery
    - \* Technology Acquisition Fund Programme (TAFP)
  - » **The Ministry of MSME promotes several technology upgradation schemes such as:**
    - \* Credit Linked Capital Subsidy Scheme
    - \* Incubators
    - \* Design Clinic Scheme
    - \* Marketing Assistance & Technology Up-gradation (MAT)
    - \* Capacity Building Of Msme Clusters For Energy Efficiency/Clean Deve. And Related Technology (EET)

*Detailed note on outcome of conference attached as Annexure*

# SAVE THE DATES FOR

## A MUCH BIGGER SHOW ON TECHNOLOGY AND INNOVATION



### International Engineering Sourcing Show VII

March 2018



Chennai Trade Centre, Chennai

**EXHIBITOR PARTICIPATION RATES PER SQ.M.**  
**Rs8000**

Contact: Mr Mayank Krishna, Senior Executive Officer, EEPC India  
Email: mkrishna@eepcindia.net, Tel: 011 - 23724819 (D), 23711124/25

## ANNEXURE: DETAILED OUTCOME OF DISCUSSIONS – EEPC-DSIR CONFERENCE

### SESSION: Outlining Vision of the Initiative of Technological Upgradation and the way forward

**EEPC India's vision:** Key highlights of address by Mr Anupam Shah, Former Chairman, Committee Member, Technology Upgradation Initiative, EEPC India and Mr Mahesh Desai, Committee Chairman, R&D and Skill Development, EEPC India

- The objective of the one-day conference was to explore global technology trends and match them with local requirements and explore opportunities for technology collaborations in various niche engineering sectors. EEPC India is implementing the initiative of technology upgradation in order to identify the latest technology and to adopt, implement them at the cluster level and continuously pursue upgradation in the future
- The initiative aims to undertake interventions tailored to the technology levels of various engineering clusters and by bringing all the stakeholders on a common platform

#### Mr Vimal K Varun, Scientist 'F', DSIR

- At the times of relentless competition, 'collaboration' may be seen as a way of empowerment of economic players working at every level manufacturing ecosystem. Global markets are diversifying
- Initiatives such as Make in India are designed to encourage global collaborations for technology developments and India to become global manufacturing hub.
- The current environment provides large opportunities for expanding R&D outreach for clusters located in different parts of India, for a more inclusive strategy and creating opportunities for innovation and economic growth.
- As per the Global Competitiveness Report released in January 2017, disruptive technologies have the potential to transform industry and address some of the most pressing challenges.
- Top findings of this report includes Smart Water Technologies, providing E-Learning to conflict affected areas and rising trust in Digital Transformations
- US Environmental Agency is also working in India to improve air quality, combat pollution and e-waste

- The McKenzie report identifies a dozen technologies which could have a global economic impact of US\$550 billion to US\$1 trillion
- Government of India in partnership several agencies are promoted several schemes for technology transfer, commercialization
- Patent information helps eye on the competitor focus and monitoring technology trends etc
- As per the US PTO, in the last 40 years, India and Russia has filed only 39 patents with US PTO, otherwise 5000 patents are filed by India whereas Russia filed 1299 patents. On another study BRICS, India is second after China. The above data reveals there are significant opportunities for technology collaborations

#### Mr B S Bhalla, Joint Secretary, DOC:

- The DOC involved because EEPC India is part of DOC, and it is part of the mandate to enhance exports of engineering products. The emphasis of the initiative is graduate manufacturing from low value chain to higher value chain.
- DOC has been working under the office of PSA and other Government Ministries including DHI, MSME, etc.
- Currently only 5-6% of exports are of high tech products from India.
- DOC is trying to identify most potential products to intervene in the clusters to identify products which needs technology upgradation and identify R&D & Academic Institutions in the vicinity.

#### Dr R Chidambaram, Principal Scientific Advisor to the Government of India:

Highlighted few examples of successful India's global technology collaborations

- DAE's collaborated with Centre for European nuclear research for supply of super conducting magnets worth US\$40 million
- The collaboration was part of the Large Hadron Collider in Geneva.
- Under this project, a technology that involves the bending of charged particles, which is done by Dipole



magnets, and the focusing done by character magnets. Around 1800 such character magnets, i.e., Octapole, Decapole and sextapole magnets were done by MSMEs in India under the guidance of Rajaramana Centre for Advanced Technology. It is a tribute to the precision manufacturing technology in India and an example of India's competence.

- Similarly, India's feat of launching 108 satellites is contributed by Indian MSMEs which supplies components for PSLV; IIT Madras has made best grinding machine in collaboration with Indian company and was supported by O/o PSA. The same machine is also present in IESS VI
- The O/o PSA supports synergy office, which is a set up where more than institutions are involved.
- The Hi tech technology developments in India such as when India carried out peaceful nuclear tests in 1974, a transmission tower business went up because the tests hi technology perception about India was improved in Gulf Countries.
- For successful global collaborations, the Industry must increase appetite of risk taking. India must be introducer of advanced technologies. For example the GM Crops could be crucial and advantageous provided required trials and test are carried out.
- The presence of R&D institutional presence in the cluster is important for making Technology upgradation initiative more effective.
- EEPC / DOC may look to transfer of knowledge, accessibility of equipment, allow access for the time of usage of equipments in the cluster who cannot afford to acquire such equipments. EEPC India may also bring Academic institutes / proximate labs for clusters and utilize their

**Questions from the audience**

I A prominent manufacturing ultrasonic cleaning machines & ozone technologies with 95% results, and want to use EEPC as a platform and show the technologies and export them. More than 115 enquiries every week.

- Anupam Shah , EEPC India- IESS could have been a major platform ,where EEPC can also consider providing space free and at very nominal price. The Government is also giving financial assistance for live transportations for demonstrations.
- Dr R Chidambaram, PSA: The institutions like Indian Agricultural Research Institute can be looked for such processes. The whole sellers of food products could also be potential clients for promotion of such technologies.

expertise. For instance out of 98 products that DOC and EEPC have identified, regarding Industrial valves, some of the tech know how such as customized valves which are used by DAE, of Department of Defence, such types of valves are already made by L&T Valves.

- There is need to create a system which is part micro financed, part insurance for MSMEs, so that those who introduce new technologies cover the risk and their quality and their need for repayment of loans can be facilitated.
- Today's India is looking for collaborations for equal partnerships, In this context the strategies adopted by Ministries of Defence in forming International Joint Ventures with progressive indigenization can be emulated. The Progressive Indigenization route is being effectively utilized by DAE in Hi Tech Industry. For example Pressurized Water Reactors are being indigenously made in India after Canada walked out of the deal with India.
- Startups can be allowed access in National R&D labs and also foreign manufacturing facility for R&D and product development by the Government for long term benefits.
- Technology cooperation should be not allowed just for development, which is what most of the foreign R&D player are currently doing in India. The Prime Minister's vision to encourage not only tech development in India but also Make in India should be promoted.
- There is need to break foreign brand strangle hold. For eg. Synchotron Radiation Source which gives X Ray source radiation source which is 1000 times stronger in variable wavelength, was developed by Indian scientists. The nucleons catering equipment are being developed by Indian scientists in India with help of Indian companies but for laboratories such is being imported.

- JS BSB – EEPC may help in exports in various events etc. In order to sell in India, local organizations could help such as ICAR etc

**II** Patenting in BARC is big issue. The process for Patent filing should be make faster. In Institutions like BARC industry outreach should be provided so that technologies development can be industrialized.

- Dr R Chidambaram, PSA – Welcomed the idea

**III** Can the Government of India helps in acquiring international certification such as API for Industrial Valves for SMEs as they are very expensive to maintain

- Mr Mahesh Desai , EEPC India- The cost of maintaining can be recovered by the selling of the product internationally.

**SESSION: Industry's voice for existing technology gaps and requirements to overcome technological challenges**

**Mr Lokesh Siddappa, Automation Industry Association:**

**Highlighted opportunities in Automation Technologies:**

- Industrial sensors; RFID solution for Tracking & Tracing in warehousing, retail, food, pharma, automotive etc.
- Industrial automation, B&R combines state-of-the-art technology with advanced engineering with complete solutions for machine and process automation, motion control, HMI and integrated safety technology.
- APROL process control system for monitoring assets constantly, which helps reduce maintenance costs and downtime and optimize the availability and utilization of machinery and equipment. Process control systems that deal with a multitude of assets that are often found in hard-to-reach locations. Failure of a single asset could bring an entire plant to a standstill. Continuous monitoring of plant equipment with APROL Asset Performance Monitoring (APM) allows operators to keep an eye on the asset's current operating data with targeted real-time parameters.
- IO-link is a standardized technology for sensors

and actuators communicating with I/O terminals, specified in the international standards, IEC 61131-9. It helps in reducing downtime & notifies for faulty parts and such phenomena in the Sensor in real time. It helps in reducing the frequency of sudden failures. It does condition monitoring of sensors and equipment to prevent troubles, The traceability Solution helps in providing the ability to trace individual products through the supply chain is becoming increasingly important to fight counterfeiting and increase consumer safety. This applies to the pharmaceutical, cosmetic, tobacco, Automotive as well as to the food & beverage industries.

- The IITM-AIA Centre of Excellence in Industrial Automation was established at IIT Madras in 2102 with the help of the Automation Industry Association and few industry partner industries with the objective of promoting automation in the Indian industries and thus provide a boost to manufacturing sector in India. The training facilities include advanced sensors, actuators, PLC systems, SCADA system, mobile robots and industrial robots.

**IWTMA:**

- India is predominantly using designs from EU, which are compliant to GL or IEL Standards. The technology requirements starts with design assessments, as the technology requirements goes hand in hand with certification requirements. The designing assessment and requirements are part of technology collaboration with EU or other parts of world.
- The initial design assessment helps in assessing the technology which applies into manufacturing. At manufacturing stage, process is assessed and certified by International certification bodies such as TUV for IPE certifications in production and erection.
- The assessment of site to be developed is an integral part of technology development, as it is crucial process that gives maximum efficiency to wind turbine or solar plants, and the technologies may need to be customized for specific sites. Local

regulations for compliance is crucial for wind turbines and renewable energy technologies such as transportation, connect to local grid installed by Government, Local tariff matching, techno commercial feasibility etc, other factors such as climatic conditions, component stability etc are also considered. The failure cost in such project are very high and sometime even higher that implementation costs Thus, assessment of site specific technology requirements offer many global opportunities for technology collaborations.

- Some of the various types of certifications involved in renewable energy are Design certification – For approving Basic design technology; Manufacturing certifications - For approving reliability of components; Prototype certifications – For approving performance; All other certifications are required for customized product developments.

**SESSION: International Opportunities for Innovation and Technology Partnerships – Panel Discussion with 'Innovation Birmingham'**

**Innovation Birmingham**

- The Innovation Birmingham campus which is based in Birmingham UK majorly focuses on ICT, Electronics and Manufacturing sector by Mentoring, funding etc . At present 3D Technologies, Nano Purification of water, Pollution control technologies etc are some of the focus areas of Innovation Birmingham. It helps Indian companies set up business in UK and also collaborate with UK partner and access funding.
- For doing business in UK, Follow up is a very crucial element for successful business collaborations.
- UK has big industry collaboration for manufacturing electric vehicle batteries. All big car companies collaborate for battery development. Innovation Birmingham also provides technology for batteries.
- UK provides good environment for start ups, and provides access for global markets
- UK has expertise in Precision Engineering, but it is currently facing skill shortages. Innovation Birmingham focus on MSMEs , and hand holding them to establish their presence in Birmingham. Innovation Birmingham is in discussions with Indian Government in designing courses for Innovation at various institutions.
- According to Innovation Birmingham Digital Manufacturing is one of the Disruptive Technologies which is relevant for all manufacturing industries. 3D technologies such as 3d Printing as a disruptive technology of future and its various applications in Automotive, Aerospace etc . The benefits of 3D printing technology includes: Faster & cheaper R&D, Quicker production, Local production, Flexible design, No spares, mass customization etc

**SESSION: Government of India Schemes for National and International Technology Collaborations and Technological Upgradation**

**Mr V K Varun, Scientist 'F', DSIR**

Four Schemes of DSIR

- Access to knowledge for Technology Development and Dissemination (A2K+)
- Building Industrial R&D & Common Research Facilities (BIRD-crf)

- Patent Acquisition and Collaborative Research (PACE)

- Promoting Research in Individuals, Start ups and MSME (PRISM)

Online Applications procedures for applying for above schemes

**A2K+**

- Support Industrial Technology related Studies (A2K+ Studies)
- Support the Organization of National and International Conference, Seminar, Symposium, Training, Workshop, Exhibition and other events (A2K + Events)
- Support for Technology Development and Utilization Programme for Women (TDUPW)
- Technology Development and Demonstration Programme (TDDP)

**BIRD-crf**

- Common Research and Technology Development Hubs (CRTDH)
- Industrial R&D Promotion Programme (IRDPP)
- Asian and Pacific Centre for Transfer of Technology (APCTT)
- Information Technology and e-Governance (IT-eG)

**PACE**

- Facilitate SMEs to acquire patent technology at an early stage
- Organization of Workshops for Patent Acquisition
- Development and Demonstration of Indigenous Product / Process

**PRISM**

- Convert innovation ideas into working models & prototypes
- Deliver technological solutions for MSME Cluster Units
  - Proof of Concept / Prototypes / Models
  - Innovation Incubation: Fabrication of working Models / Process Know-how / Testing and Trial / Patenting / Technology Transfer
  - Enterprise Incubation
  - R&D Proposals aimed at helping MSME Clusters



- Mr Sanjay Chavre, SDO, DHI
- Overview of Scheme for Global Competitiveness of Capital Goods Sector
- Components of the Scheme:
- Advanced Centres of Excellence for R & D and Technology Development with National Centres of Excellence in Education and Technology at IITs & CMTI
  - Government grant not exceeding 80% of the project cost – Rs.250 crore (for 5 COEs) subject to maximum of Rs.100 crore for each Centre of Excellence
  - Balance Rs.62.50 crore i.e. 20% in cash upfront of the project cost to be invested by the Industry, IITs & CMTI
  - No government grant for land and building
- Integrated Industrial Infrastructure Facilities
  - Government grant not exceeding Rs.125 crore
  - Balance by Government of Karnataka and Industry
- Common Engineering Facility Centers
  - Government grant of Rs.48.96 crore (Rs.30 crore maximum for one centre)
  - Industry contribution would be 20% of the cost of Plant & Machinery in the centre
  - No government assistance for land and building
- Test & Certification Centre for Construction, Earthmoving, Material Handling and Mining Machinery
  - Government Grant of Rs.100 crore which is 100% of the project cost including Plant & Machinery because the Testing Facility would be used for 3rd party certification
- Technology Acquisition Fund Programme (TAFP)
  - Government grant is limited to 25% of the cost of Technology Acquisition and maximum amount shall not exceed Rs.10 crore per technology
  - M/s. Global Innovation & Technology Alliance (GITA) have been engaged to promote, market and implement TAFP component of the CG Scheme
  - Firms can apply online for funding under TAFP component at GITA's website: www.gita.org.in
- New Capital Goods Policy & Its Objectives:
  - Increase production from Rs.2,30,000 crore in 2014-15 to Rs.7,50,000 crore in 2025
  - Raise direct and indirect employment from the current 8.4 million to 30 million.
  - Exports from the current 27 percent to 40 percent of production.
  - Increase the share of domestic production in India's demand from 60 percent to 80 percent thus making India a net exporter of capital goods.
- New CG Policy and Schemes interventions
  - Schemes worth Rs 3000 crore grant support
  - Improvement in technology depth across sub-sectors,
  - Exports capability developments
  - Start Up support,
  - Increase skill availability,
  - Ensure mandatory standards and promote growth and
  - Capacity building of MSMEs.
- Vision 2035, Future of Manufacturing, Future Technologies, Technology Drivers

**Mr V Ramakrishnan, Deputy Director (Mechanical), MSME-DI, Chennai**

- REGIONAL TESTING CENTRES - Labs setup by MSME DO to test MSE products; Recognised by BIS and accredited by NABL; Besides testing, these labs assist in - Quality upgradation aspects; Training in testing and quality control; Consultancy in testing and quality management
- TECHNOLOGY SUPPORT AND QUALITY IMPROVEMENT - Credit Linked Capital Subsidy Scheme (CLCSS) for technology upgradation; To encourage Quality Management grant up to Rs. 75,000 to MSE units for obtaining ISO 9000 or equivalent Certification.
- CREDIT LINKED CAPITAL SUBSIDY SCHEME - Capital subsidy provided to Small Scale Units on loans raised by them to improve technology and there by quality of products; 15% of the cost of the machinery is given as subsidy subject to a ceiling; Maximum ceiling on loan Rs.100 lakhs; Maximum ceiling on subsidy : Rs.15 lakhs; At present the scheme cover 44 product groups
- INCENTIVE FOR ISO 9000 CERTIFICATION - Incentive for MSE units which have acquired ISO - 9000 (or similar) Quality Management System Certification; Incentive is the reimbursement of the expenditure incurred by the industrial unit for acquiring the Certification to the extend of 75% of the total cost subject to a maximum of Rs. 75,000/-; Awareness programs for MSME units on Quality Management System; Training of MSME DO officers on Quality Management System
- SERVICES AVAILABLE AT MSME DI, CHENNAI - Cluster Development Programme; Cnc Training Programmes – Turning & Machining Centres; Entrepreneurship Development Programme; Management Development Programme; Model Project Profiles; Technical Consultancy Service (Electrical, Mechanical, Metallurgical, Food); Skill Development Programme; Testing Facilities; Economic Information Service
- INCUBATORS- Objective: Assist Incubation of Innovative Ideas; Encourage Ideas to Become SMEs; Govt. Grant (Max. 85%); Rs. 4 - 8 lakhs per Idea - Each BI to Assist 10 Ideas / Units; Eligibility institutions: Research Institutions, Engineering colleges
- DESIGN CLINIC SCHEME- Design Awareness – Assistance, GoI Contribution= Rs. 60,000; Preparation of Design Need Assessment Survey – Assistance, GoI Contribution =Rs. 3.0 Lakh. (75%); Design Projects, Assistance, GoI Contribution =Rs.9.0 lakh (60%); Rs. 15 lakh (60%) in case of group of 4 or more MSMEs
- MARKETING ASSISTANCE & TECHNOLOGY UP-GRADATION (MAT) - Technology Upgradation in Packaging – Assistance:Rs 0.80 Lakh for awareness Cluster based study Rs.10.00 Lakh GoI:unit::80:20 Unit-based packaging intervention – Rs. 9.00 lakh (for group of 10 units) GoI:unit::80:20
- CAPACITY BUILDING OF MSME CLUSTERS FOR ENERGY EFFICIENCY/CLEAN DEVE. AND RELATED TECHNOLOGY (EET) - Assistance Awareness programme=75 % (Max.Rs.75,000 ; Cluster Level Energy audit= 75% (Max Rs. 9 lakh & preparation of Model DPR); Unit level DPR = 50% (Maxi. Rs. 1.5 lakh); Implementation of EET= 25%(maxi. Rs. 10 lakh)
- PROMOTION OF INFORMATION & COMMUNICATION TECHNOLOGY - Assistance (Per Cluster) Awareness & feasibility report - Rs. 1.0 lakh; DPR-Rs. 2.0 lakh; Setting E-readiness centre(40%) - Rs.72.0 lakh; Eligible:MSE clusters

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