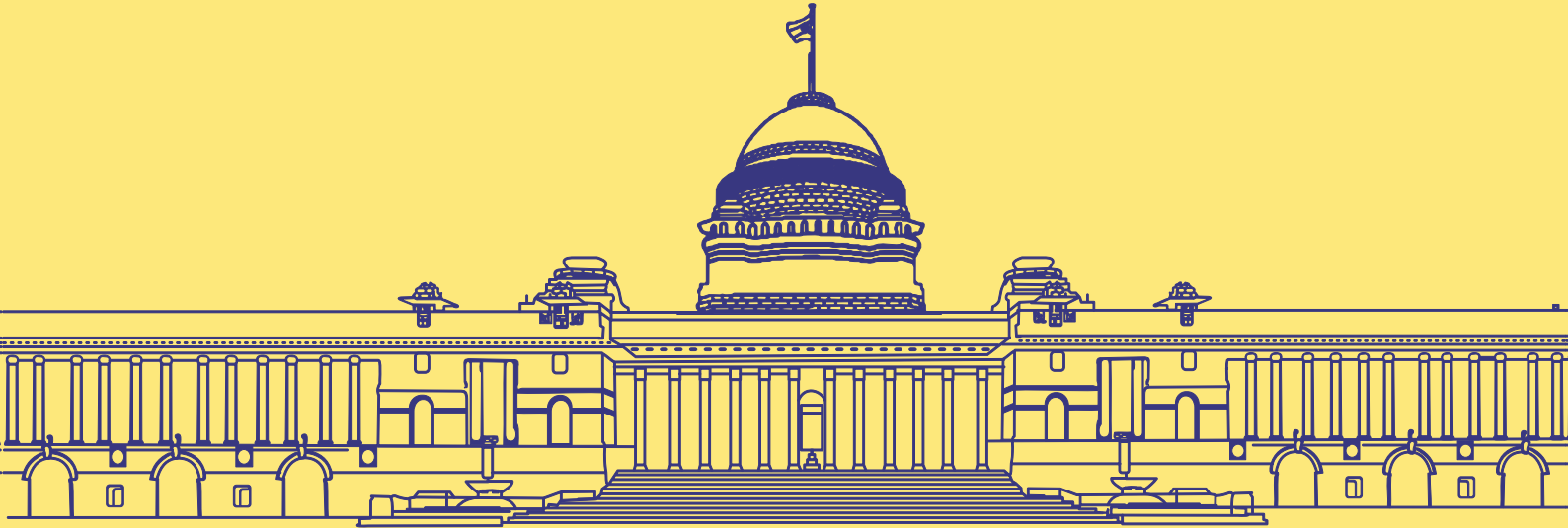




Confederation of Indian Industry



Glimpses of MoU Exchange Ceremony Between Industry and Academia

at

Rashtrapati Bhavan

on

16th November 2016

on the occasion of Visitor's Annual Conference

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CII Session at Rashtrapati Bhavan

Signing of memorandums of understanding (MOUs) is not always a sure shot way of improving ties between two entities but it does mark a formal beginning to a relationship. If the two sides consciously work on making the MOU fruitful and productive then a lot can be done after the ceremonial signing and exchange of papers. This is what the Confederation of Indian Industry (CII) has been trying to do for the past two years through the MOUs which it has been facilitating between industry and centrally-funded institutes (CFIs) with the blessings of the Hon'ble President of India who is the Visitor to all CFIs.

The MOUs are exchanged at the special CII session on industry-academia collaborations on the occasion of Visitor's Annual Conference at Rashtrapati Bhavan. The 2016 conference was held from 16th to 18th November and once again it became an occasion for CII to showcase its strength in facilitating industry-academia collaborations. As opposed to the 43 MOUs which were exchanged in this session in 2015, last year this number exceeded the golden number of 60 and a total 67 MOUs were exchanged between companies and institutions in the presence of the President of India, Mr Pranab Mukherjee and several high-level dignitaries from industry and academia.

Apart from exchange of fresh MOUs, CII also presented a report card of the MOUs which were signed in the first edition of such facilitation process which had begun in 2015. The report card included work done under MOUs between Paradeep Phosphates and IIT Bhubaneswar; Blue Star and IIT Madras as well as School of Planning & Architecture; Micro Interconnexion and NIT Goa; Dr. Reddy's Laboratories, Natco Pharma as well as Bharat Biotech and NIPER Hyderabad; ELICO and NIT Warangal and Bosch Limited and IISc Bangalore.

In India, the President of the country is Visitor of 117 Central institutions. These include 44 central universities, 30 NITs, 16 IITs, 5 IISERs, 4 IIITs, 7 NIPERs and 8 others which are under the administrative control of ministry of human resource development (MHRD). Some institutions are under the ministry of shipping, ministry of external affairs, ministry of agriculture, ministry of sports, ministry of textiles and ministry of chemicals and fertilizers.

As a Visitor, the powers of the President include the right to order an inspection of a university or an institution, its buildings, laboratories and equipment. Mr Pranab Mukherjee, as the 13th President of India, revived the tradition of conference of vice-chancellors in 2013. In the same year he also started an annual conference of directors of NITs and IITs at Rashtrapati Bhavan. In 2014, separate annual conferences of Central institutions were held at the President's House. All the conferences had industry participation as an important component of proceedings and discussions.

CII had been part of the discussions and deliberations since the tradition of annual conferences was revived. In 2015 it proposed and got the opportunity to conduct a special session during the Visitor's Annual Conference, which was held for all 114 Central institutions together for the first time. During this session CII got 27 of its member companies to exchange MOUs with heads of academic institutions.

The six suggested areas of collaboration which both sides are given are Governance, Curriculum, Faculty, Infrastructure, Research Projects and Placements. While placements is the most direct way in which companies usually engage with academic institutions, they are explained that there are several other ways through which they can interact with the academia. These include supplementing learning in the classroom by facilitating first-hand experience for students in their factories; donating the time of their senior executives for either face-to-face interaction with students or for video interactions; providing sabbatical to faculty so that they could gain exposure to real-time problems of companies and pass on that knowledge to their students; sending guest faculty to institutes; setting up incubation centres or laboratories inside institutes to enable students to get the feel of real machines and giving their research assignments to institutions so that both students and faculty could learn by working on real challenges and problems.

From industry side in 2016, maximum MOUs were signed by Mahindra & Mahindra while in 2015 the maximum number of MOUs were signed by Pepsi at four, followed by three MOUs by Blue Star and two each by Tata Power and

KHS Machinery. This time some of the other MOU signing companies included Tata Power SED, Cadila Pharmaceuticals, Adani Power, Triveni Turbine, Tata Steel, Emerson Network Power, ReNew Power, Sapiient, Hero Eco Group, Lal Pathlabs, ONGC, Saint Gobain, Hindalco, Triveni Turbine, Cummins, Tata Technologies, ABB India, Natco Pharma, Rolls Royce, US-India Aviation Cooperation Program (ACP), Sanofi India and Biocon.

In 2015, the MOU signing companies were Elico Limited, Cadila Pharmaceuticals, Anmol Feeds, Dow Chemicals, Emerson Network, Paradeep Phosphates, Bosch, Honda Motorcycles and Scooters India, Micro Interconnexion, Veena Diecasters, Liberty Shoes, Viacom 18 Media, Bharat Heavy Electricals, Bitchem Asphalt, Garden Reach Ship Builders, MN Dastur & Company, Sankalp Semiconductors and Skybit Technologies.

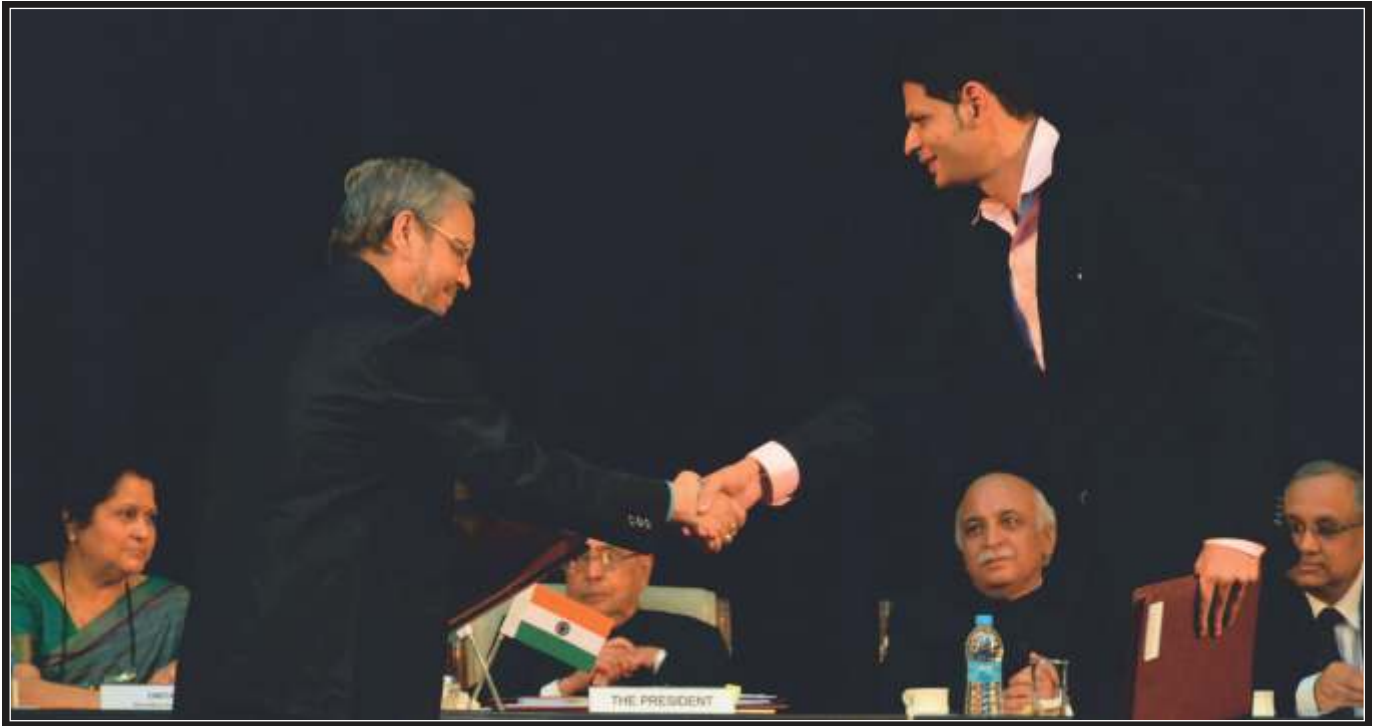
Among institutions, the maximum number of MOUs at eight were exchanged by IIT Bombay. In 2015, the institute which signed maximum number of MOUs at six was Indian Institute of Engineering Science and Technology (IEST), followed by two MOUs each by IIT Kanpur, NIT Warangal and MNNIT Allahabad. Other institutions which exchanged MOUs this year were five each by Aligarh Muslim University and NIT Warangal; four by IEST; three each by IIT Madras, IIT Guwahati, JNU, NIPER-Kolkata, NIT Agartala and Rajiv Gandhi National Aviation University; two each by Central University of Jharkhand, IISc Bangalore, IIT Patna, IIT Ropar, NIPER Hyderabad, NIT Calicut and VNIT Nagpur and one each by Central University of Punjab, IIT Delhi, IIT Kanpur, Jamia Millia Islamia, NIPER Guwahati, NIPER Mohali, NIT Jalandhar, NIT Jamshedpur, NIT Manipur, Rajiv Gandhi National Institute of Youth Development and Tripura University.

In 2015 the institutes which had exchanged MOUs with companies included IIT Kharagpur, IIT Madras, SPA Delhi, IIT Bhubaneswar, IIT Gandhinagar, SVNIT Surat, IISc, NIT Trichy, NIT Goa, NIT Srinagar, NIT Delhi, VNIT Nagpur, Central University of Haryana and Jamia Milia Islamia.

Interactive Session



MoU on Advancing Research and Commercial Scale Production of Biofuels from Rubber Seeds



(R to L) **Mr. Abhishek Dave, Director, Bhooma Energy Ventures Pvt. Ltd.** exchanging the MoU with **Prof. Gautam Biswas, Director, IIT Guwahati**

**MoU on Development of Products and Solutions in Communications,
Signal Processing, Pattern Recognition, Energy and Security**



(R to L) Mr. Ashok Sethi, CEO & Executive Director, The Tata Power Company Ltd. exchanging the MoU with Prof. Gautam Biswas, Director, IIT Guwahati

MoU on Research and Development in Chemical Technology and Life Sciences



(R to L) **Mr. Dev Ranjan Mukherjee, Head – Corporate Affairs, Cadila Pharmaceuticals Ltd.** exchanging the MoU with **Prof. Gautam Biswas, Director, IIT Guwahati**

MoU on Collaborative Research, Student Development and Industrial Testing



(R to L) **Mr. Irshad Khan, Director, Zeus Numerix Pvt. Ltd.** exchanging the MoU with **Dr. Narendra S. Chaudhari, Director, VNIT Nagpur**

MoU on Collaborative Research, Student Development and Industrial Testing



(R to L) **Mr. Jayadeb Nanda, COO, Adani Power Ltd.** exchanging the MoU with **Dr. Narendra S. Chaudhari, Director, VNIT Nagpur**

MoU on Large Area Photo Voltaic Test Bed



(R to L) **Mr. Sandeep Dixit, Head, Adani Center for Research & Performance Consulting**
Adani Energy Business exchanging the MoU with **Prof. Anurag Kumar, IISc Bangalore**

MoU on Development of Micro-Steam Turbine and Pump for Rural Applications



(R to L) **Mr. Arun Mote, Executive Director, Triveni Turbine Ltd.** exchanging the MoU with **Prof. Anurag Kumar, Director, IISc Bangalore**

MoU on Casting Innovation for Make in India



(R to L) **Mr. K. E. Shanavaz, MD, Peekay Steel Castings (P) Ltd.** exchanging the MoU with **Dr. Sivaji Chakravorti, Director, NIT Calicut**

MoU on Technology & Management Upgradation in Elastomer Products



(R to L) **Mr. V. Noushad, MD, Veekey Elastomers (P) Ltd.** exchanging the MoU with **Dr. Sivaji Chakravorti, Director, NIT Calicut**

MoU on Enhancing Capabilities of Employees in Mechanical, Electrical and Metallurgical Engineering



(R to L) Dr. S.K. Singh, Chief, Capability Development, Tata Steel Ltd. exchanging the MoU with Prof. Rambabu Kodali, Director, NIT Jamshedpur

MoU on Grid-connected Solar Inverter



(R to L) **Mr. Sunil Khanna, Chairman, CII Maharashtra State Council & President & MD, Emerson Network Power (India) Pvt. Ltd.** exchanging the MoU with **Prof. Indranil Manna, Director, IIT Kanpur**

MoU on Setting up of Sumant Sinha ReNew Center of Excellence on Renewable Energy



(R to L) **Mr. Sumant Sinha, Chairman & CEO, ReNew Power** exchanging the MoU with **Prof V. Ramgopal Rao, Director, IIT Delhi**

**MoUs on Online M. Tech Program in Automotive Technology,
Development of Energy-efficient Electric Train & Setting up of Centre for Battery Development**



(R to L) Dr. Aravind S Bharadwaj, Senior VP, Advanced Technologies and Services, Mahindra & Mahindra Ltd. exchanging the MoU with Prof. Bhaskar Ramamurthi, Director, IIT Madras

MoU on Smart Mobility and Connected Vehicles



(R to L) **Dr. Aravind S Bharadwaj, Senior VP, Advanced Technologies and Services, Mahindra & Mahindra Ltd.** exchanging the MoU with **Lt. Gen. (Rtd.) Zameeruddin Shah, Vice Chancellor, Aligarh Muslim University**

MoU on Collaborative Research and Technology Development



(R to L) **Dr. E Sudhakar Reddy, Technical Director, Raychem Innovation Center Raychem RPG (P) Ltd.** exchanging the MoU with **Prof. Sarit Kumar Das, Director, IIT Ropar**

MoU on Collaborative Research and Technology Development



(R to L) **Mr. H. S. Cheema, MD, Cheema Boilers Ltd.**
exchanging the MoU with **Prof. Sarit Kumar Das, Director, IIT Ropar**

MoU on Charging Infrastructure for Electric and Plug-in Hybrid Electric Vehicles



(R to L) Mr. Dhivik A, CEO, Go Green EoT Pvt. Ltd. exchanging the MoU with Dr. Mohammad Saad Alam, Coordinator, Centre of Advanced Research in Electrified Transportation (CARET), Aligarh Muslim University

MoU on Developing Smart Microgrid



(R to L) Mr Rupendra Bhatnagar, General Secretary, India Smart Grid Forum exchanging the MoU with Professor Mirza Mohd. Sufyan Beg, Principal, Zakir Hussain College of Engineering & Technology, Aligarh Muslim University

MoU on Transportation Electrification



(R to L) **Mr. Vinit Bansal, MD, EV Motors India Pvt. Ltd.** exchanging the MoU with **Dr. Yasser Rafat, Co-coordinator, Centre of Advanced Research in Electrified Transportation (CARET), Aligarh Muslim University**

MoU on Getting Industry Ready for Digital Future



(R to L) **Mr. Sanjeev Kumar, Senior Manager Sapient** exchanging the MoU with **Dr. Lalit Kumar Awasthi, Director, NIT Jalandhar**

MoU on Bharat Electric Vehicle Charger



(R to L) **Mr. Sohinder Gill, CEO, Global Business, Hero Eco Group of Companies** exchanging the MoU with **Professor Javed Akhtar, Registrar, Aligarh Muslim University**

MoU on Rubber Technology



(R to L) **Mr. Kamal Kishore Chowdhury, President, All India Rubber Industries Association** exchanging the MoU with **Prof. Anjan K. Ghosh, Vice Chancellor, Tripura University**

MoU on Optofluidics Based Point of Care Diagnostic for Infectious Diseases



(R to L) CII Representative on behalf of Shanmukha Innovations Pvt. Ltd. exchanging the MoU with Prof. M. Jagadesh Kumar, Vice Chancellor, JNU

MoU on Drug Development Tool



(R to L) **Mr. Rajib Dasgupta, National Manager-Business Development, Eurofins Clinical Genetics India Pvt. Ltd.** exchanging the MoU with **Prof. M. Jagadesh Kumar, Vice Chancellor, JNU**

MoU on Development of Diagnostic Tool



(R to L) **Mr. Dilip Bidani, CFO, Dr. Lal PathLabs Ltd.** exchanging the MoU with **Prof. M. Jagadesh Kumar, Vice Chancellor, JNU**

MoU on Pharmacoepial Education & Training



(R to L) **Mr. K.V.Surendranath, Ph.D, Senior Vice-President, Global Sites, United States Pharmacopoeial Convention** exchanging the MoU with **Dr. R. Srinivas, Dean, NIPER Hyderabad**

MoU on Development of Complex Generics



(R to L) **Mr. Lakshmikanth Gandikota, Vice President, Biological E. Ltd.**
exchanging the MoU with **Dr. R. Srinivas, Dean, NIPER Hyderabad**

MoU on Collaborative Research and Students' Development



(R to L) **Mr. A.G. West Kharkongor, CMD, NEEPCO**
exchanging the MoU with **Prof. (Dr.) Gopal Mugeraya, Director, NIT Agartala**

MoU on to Promote Knowledge and Excellence in Petroleum Engineering



(R to L) **Mr. S. C. Soni, Executive Director, ONGC**
exchanging the MoU with **Prof. (Dr.) Gopal Mugeraya, Director, NIT Agartala**

MoU on Development of Off-Grid Refrigeration System for Agricultural Produce



(R to L) **Mr. Akash Agarwal, Director, New Leaf Dynamic Ltd.** exchanging the MoU with **Dr. Preetam Kumar, Professor Incharge, Corporate Relations, International Affairs & Alumni Matters Indian, IIT Patna**

MoU on Research in Emerging Technologies



(R to L) **Mr. Naresh Kumar, CTO, Tektronix** exchanging the MoU with **Dr. Preetam Kumar, Professor Incharge, Corporate Relations, International Affairs & Alumni Matters Indian, IIT Patna**

MoU on Collaboration in Research and Development



(R to L) **Mr. Reepan Tikoo, CEO, Powai Labs Technology Pvt. Ltd.**
exchanging the MoU with **Dr. S. Birendra Singh, Director, NIT Manipur**

MoU on Joint Research, Technical Projects and Capacity Building



(R to L) **Mr. S.K. Soonee, CEO, Posoco** exchanging the MoU with **Prof. Talat Ahmad, Vice Chancellor, Jamia Millia Islamia**

MoU on Workforce and Community Development



(R to L) **Mr. P. Padmakumar, Head, CSR, Saint Gobain India** exchanging the MoU with **Dr. Latha Pillai, Director, Rajiv Gandhi National Institute of Youth Development**

MoU on Process Intensification for Perfumery Intermediates



(R to L) **Mr. Ravi Nangia, MD, Harmony Organics**
exchanging the MoU with **Prof. Devang V. Khakhar, Director, IIT Bombay**

MoU on Strain Engineering for the Production of Ephedrine Alkaloids



(R to L) **Mr. M. Devesh, MD, Embio Ltd.** exchanging the MoU with **Prof. Devang V. Khakhar, Director, IIT Bombay**

MoU on Rapid Foam Casting



(R to L) **Mr. Sunil Dattajirao Mohite, Proprietor, Jayshree Machine & Tools** exchanging the MoU with **Prof. Devang V. Khakhar, Director, IIT Bombay**

MoU on Application of Industrial Byproducts for Sustainable Development



(R to L) **Dr. Vinod Verma, Assistant Vice President, Hindalco Industries Ltd.**
exchanging the MoU with **Prof. Devang V. Khakhar, Director, IIT Bombay**

MoU on Improvement in Jaggery Making Process



(R to L) **Mr. Narendra Baheti, Director, Future Consumer Limited** exchanging the MoU with **Prof. Devang V. Khakhar, Director, IIT Bombay**

MoU on Development of Recuperator, Condenser & Heat Exchanger for ORC System



(R to L) **Mr. P U Gopi, VP & CTO, Triveni Turbine Ltd.** exchanging the MoU with **Prof. Devang V. Khakhar, Director, IIT Bombay**

MoU on Cancer Screening Solutions and Wide-Band Gap Semiconductor & Power-Switching Devices



(R to L) **Mr. Rishi Bhatnagar, President, Portescap India Pvt. Ltd.**
exchanging the MoU with **Prof. Devang V. Khakhar, Director, IIT Bombay**

MoU on Durable Thermal Barrier Coatings for Improved Internal Combustion Engine Efficiency



(R to L) **Dr. Anuradda Ganesh, Director, Cummins Research & Development** exchanging the MoU with **Prof. Devang V. Khakhar, Director, IIT Bombay**

MoU on Joint Research on Solar Cells and Systems



(R to L) **Mr. Gyanesh Chaudhary, MD & CEO, Vikram Group**
exchanging the MoU with **Prof. Ajoy Kumar Ray, Director, IIST Shibpur**

MoU on Joint Research Project on Civil Infrastructure and Construction Technology



(R to L) **Mr. BD Mundhra, Chairman Emeritus, Simplex Infrastructures Ltd.**
exchanging the MoU with **Prof. Ajoy Kumar Ray, Director, IEST Shibpur**

MoU on Joint Research on Sensor Technology



(R to L) **Mr. Indranil Das, CMD, Synchro Electronics**
exchanging the MoU with **Prof. Ajoy Kumar Ray, Director, IIST Shibpur**

MoU on Setting up Joint Innovation Hub for Manufacturing Industry



(R to L) **Mr. Anand Bhade, President, Asia Pacific, Tata Technologies Ltd.** exchanging the MoU with **Prof. Ajoy Kumar Ray, Director, IEST Shibpur**

MoU on Nurturing Incubation



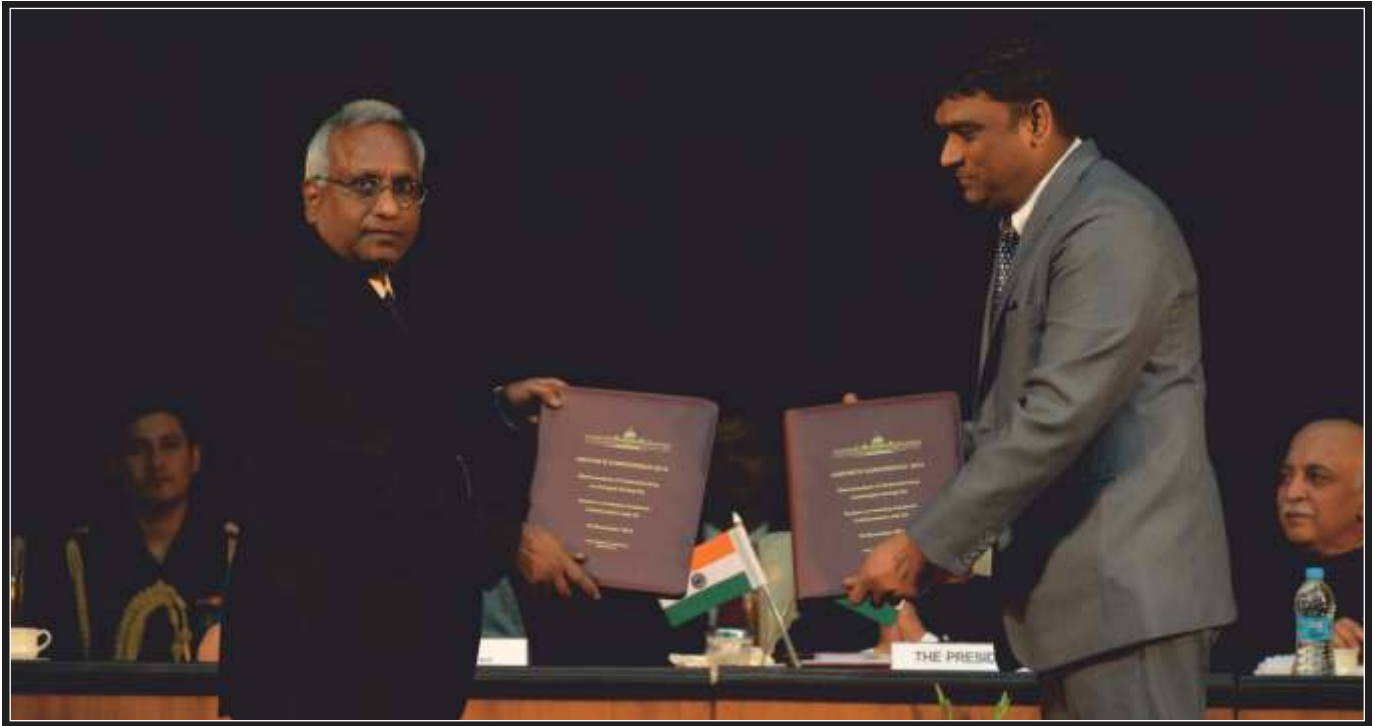
(R to L) **Mr. Mani Iyer, MD, Incube Ventures Pvt. Ltd.**
exchanging the MoU with **Prof. G.R.C. Reddy, Director In Charge, NIT Warangal**

MoU on Mobile Video Mapping Solutions



(R to L) **Mr. Srikanth Nori, MD, GeoVista Technologies Pvt. Ltd.**
exchanging the MoU with **Prof. G.R.C. Reddy, Director In Charge, NIT Warangal**

MoU on GIS & IT Applications



(R to L) **Mr. B. Srinivas Murthy, CEO, SKY e IT Solutions (PVT) Ltd.**
exchanging the MoU with **Prof. G.R.C. Reddy, Director In Charge, NIT Warangal**

MoU on Urban Asset Mapping



(R to L) **Mr. R. Nandakishore, Managing Partner, Sri Mangadu Kamatchiamman Business Corporation** exchanging the MoU with **Prof. G.R.C. Reddy, Director In Charge, NIT Warangal**

MoU on Road Safety & Intelligent Transportation System



(R to L) **Mr. Krishna Mohan Boddapati, MD, InfoTrans Engineers Pvt. Ltd.**
exchanging the MoU with **Prof. G.R.C. Reddy, Director In Charge, NIT Warangal**

MoU on Research and Development in Science



(R to L) Dr. Arvind Kapur, MD, RASI HyVeg Pvt. Ltd. exchanging the MoU with Prof. R.K. Kohli, Vice Chancellor, Central University of Punjab

MoU on Developing Microgrid under Uchhatar Avishkar Yojana



(R to L) **Mr. Sanjeev Sharma, Country MD, ABB India Ltd.**
exchanging the MoU with **Prof. Bhaskar Ramamurthi, Director, IIT Madras**

MoU on Pharmacological and Toxicological Evaluation of New Chemical Entities & Training in Pharmaceutical Sciences



(R to L) **Dr. A. K. S. Bhujanga Rao**, President (Technical and R&D), Natco Research Centre
exchanging the MoU with **Dr. U. S. N. Murty**, Director, NIPER Guwahati

MoU on Education and Training



(R to L) Sri Ajay Pradhan, PhD, President & CEO, C2S2 Pvt. Ltd. exchanging the MoU with Prof. Nand Kumar Yadav 'Indu', Vice Chancellor, Central University of Jharkhand

MoU on Education and Training



(R to L) **Mr. Sachchidanand Rai, Director, Eco Water Solutions Technologies Pvt. Ltd.** exchanging the MoU with **Prof. Nand Kumar Yadav 'Indu', Vice Chancellor, Central University of Jharkhand**

MoU on Collaborative Research and Student Development



(R to L) **Mr. Kishore Jairaman, CEO, Rolls Royce** exchanging the MoU with **Air Marshal Nalin Kumar Tandon, Vice Chancellor, Rajiv Gandhi National Aviation University, Raebareilly**

MoU on Collaborative Research and Student Development



(R to L) **Mr. Sandeep Bahi, Program Director, ACP US-India Aviation Cooperation Program** exchanging the MoU with **Air Marshal Nalin Kumar Tandon, Vice Chancellor, Rajiv Gandhi National Aviation University, Raebareilly**

MoU on Collaborative Research and Student Development



(R to L) **Mr Pulak Sen, Founder Secretary General, MRO Association of India** exchanging the MoU with **Air Marshal Nalin Kumar Tandon, Vice Chancellor, Rajiv Gandhi National Aviation University, Raebareilly**

MoU on Building Entrepreneurial Ecosystem for North East Startups



(R to L) **Ms. Kommanaboina Radha Alekhya, Director, iBuild Innovations India Pvt. Ltd.**
exchanging the MoU with **Prof. (Dr.) Gopal Mugeraya, Director, NIT Agartala**

MoU on Process Development of Alternative Starting Materials for Synthesis of Hormones



(R to L) **Mr. Chandra Mohan Chhabra, General Manager, ASG Biochem** exchanging the MoU with **Dr. V. Ravichandiran, Director, NIPER Kolkata**

MoU on Development of Therapeutic Biomarkers from Natural Sources for Diabetes



(R to L) **Dr. A.V. Muruganandam**, Director R&D, Natreon INC
exchanging the MoU with **Dr. V. Ravichandiran**, Director, NIPER Kolkata

MoU on Curriculum and Product Development



(R to L) **Mr. Nakul Verma, Senior Director, Sanofi India Ltd.**
exchanging the MoU with **Dr. V. Ravichandiran, Director, NIPER Kolkata**

MoU on Research on Power Grid Behaviour



(R to L) **Dr. Purushothaman Ravichandran, President, Danfoss Ltd.**
exchanging the MoU with **Prof. Bhaskar Ramamurthi, Director, IIT Madras**

MoU on Research on Biopharmaceuticals



(R to L) **Mr. Amitava Saha, Senior Vice President, Biocon Ltd.** exchanging the MoU with **Dr. K.K. Bhutani, Officiating Director, NIPER S.A.S. Nagar, Mohali**





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