

# 5<sup>th</sup> Industry-Academia Conclave

## Indian Institute of Technology Indore

### Program Schedule: September 06, 2017

**08:30 hrs - 09:55 hrs:** Registration and breakfast for delegates, Room 201, Pod 1B

#### **10:00 hrs - 11:50 hrs: Inaugural Session**

**10:00 hrs - 10:05 hrs:** Introduction to IAC 2017: Dr. Vimal Bhatia, Convener, Industry Relations Team, IIT Indore

**10:05 hrs - 10:15 hrs:** Welcome address by Professor Pradeep Mathur, Director, IIT Indore

**10:15 hrs - 11:00 hrs:** Keynote address by Mr. Gurjit Singh, IFS, Chief Guest, Former Indian Ambassador to Germany.

Title: Industry - Academia Relationship and Challenges

**11:00 hrs - 11:15 hrs:** Invited talk by Dr. Debojit Chakrabarty, Global Fragrance Innovation-Technology and Applications, S.H. Kelkar and Company Ltd.

Title: Industry Academia Partnerships: Beyond Lip Service

**11:15 hrs - 11:30 hrs:** Invited talk by Dr. Kumar B. Salui, ANSYS, India.

Title: Simulation - Recent Trend

**11:30 hrs - 11:45 hrs:** Invited talk by Mr. Sandeep Saxena, TCS, Mumbai, India.

Title: Co-create and collaborate for a digital future.

**11:45 hrs - 11:50 hrs:** Vote of thanks: Dr. Mukesh Kumar

#### **11:50 hrs - 13:30 hrs: Visit to state-of-the-art facilities of IIT Indore: Dr. C. Venkatesh**

#### **13:30 hrs - 14:30 hrs: Lunch, Ground floor of School Building**

#### **13:30 hrs - 18:00 hrs: Poster Session, Start-up & Research Pavilions, Demonstrations in School Building: Dr. I.A. Palani, Dr. P.K. Upadhyay and Dr. G. Banda**

Details attached

#### **14:30 hrs - 17:30 hrs: Bridging the Gap Session: Ideas, Expertise and Collaboration, Mr. Avadhoot Sinkar, Room 308-309, School Building**

**14:30 hrs - 14:40 hrs:** Dr. Apoorva Puranik, Mahatma Gandhi Memorial Medical College, Indore  
Title (Tentative): Developing and designing tools for assessment and rehabilitation of persons disabled in speech and communication due to brain stroke and brain injury

**14:40 hrs - 14:50 hrs:** Mr. Sourov S. Bose, Acuminous Software Pvt. Ltd., Gurugram  
Title: The past, present and future roadmap (Artificial Intelligence and IoT)

**14:50 hrs - 15:00 hrs:** Dr. Aruna Tiwari, IIT Indore  
Title: Design of a quantum inspired fuzzy based neural network and its hardware realization

**15:00 hrs - 15:10 hrs:** Dr. Kapil Ahuja, IIT Indore  
Title: Deep learning on GPUs

**15:10 hrs - 15:20 hrs:** Dr. Bodhisatwa Mazumdar, IIT Indore  
Title: Glitch modeling of FPGA device primitives for side-channel

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**14:30 hrs - 17:30 hrs: Bridging the Gap Session: Ideas, Expertise and Collaboration, Mr. Avadhoot Sinkar, Room 308-309, School Building (Continued)**

**15:20 hrs - 15:30 hrs:** Mr. Sandeep Saxena, TCS, Mumbai  
Title: Research and innovations at the intersection

**15:30 hrs - 15:40 hrs:** Dr. Vimal Bhatia, IIT Indore  
Title: Solution for future communication and signal processing problems

**15:40 hrs - 15:40 hrs:** Dr. Nandkishore Yadav, IIT Indore  
Title: Device/Circuit co-design issues in memory

**15:50 hrs - 16:00 hrs:** Mr. Dharmesh Bhutani, Ind-Sphinx Precision Ltd., Himachal Pradesh

**16:00 hrs - 16:10 hrs:** Dr. I.A. Palani, IIT Indore  
Title: Laser based Micro-nano manufacturing and surface processing

**16:10 hrs - 16:20 hrs:** Dr. Dr. Subba Reddy Daggumati, IIT Indore  
Title: Fatigue damage analysis of GFRP & CFRP laminates under variable amplitude loads

**16:20 hrs - 16:30 hrs:** Dr. Ajay Agarwal, CSIR-CEERI, Pilani  
Title: Micro Nano-technologies for sensors

**16:30 hrs - 16:40 hrs:** Dr. Shaibal Mukherjee, IIT Indore  
Title: Advanced devices for environment monitoring, energy and space applications

**16:40 hrs - 16:50 hrs:** Dr. Kumar B. Salui, ANSYS, India  
Title: Industry-Academia Collaboration in Simulation

**16:50 hrs - 17:00 hrs:** Ms. Kavita Gupta, IIT Indore  
Title: Synthesis of FDCA as an environmental benign raw material for the manufacturing of biomass based plastic materials

**17:00 hrs - 17:10 hrs:** Dr. Nishikant Ghadge, Navin Fluorine Int. Ltd., Dewas

**17:10 hrs - 17:20 hrs:** Mr. Sunil Nair, PerkinElmer, Thane  
Title: PerkinElmer and its solutions

**17:20 hrs - 17:30 hrs:** Mr. K. Ganapathy Subramaniam, Janatics India Pvt. Ltd., Coimbatore  
Title (Tentative): Centre of Excellence in Pneumatics and Automation

**17:30 hrs - 17:50 hrs: High Tea, Ground floor of School Building**

**17:50 hrs - 18:40 hrs: Panel Discussion in Room 308-309, School Building, Dr. Abhirup Datta**

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#### Start-up presentations/demonstrations:

JAWAT CO: Law based Start-up, Mr. A. Agarwal

Eco-paper Products, High Load Bearing Bag, Mr. D. Barasker and Mr. A. Duriwala

3D Printing Technology, Mr. D. Bora

Chota Hospital Pvt. Ltd., Mr. A. Arora

#### Product/Prototype demonstrations from IIT Indore:

Smart Cervical Collar, Ms. M. Phulwalkar, Mr. A. Govil, Mr. Karthick. S

Smart Aquatic bot, Mr. A. Shewetkar, Mr. V. Jain, Mr. S. Mittal

Intelligent Composite Flapper, Mr. S.M. Prabu, Mr. V. Choyal, Mr. E. Ahmed, Mr. S. Jain Mr. A. Kumar

Development of PLC control based Pneumatic Stewart platform, Mr. T. Nath, Karthick S.

Heat Engine Design, Mr. T. Nath, Mr. Akash K., Mr. A. Laharia

SMA based Transformer Oil Sensor, Mr. Akash K., Mr. P. Gaur, Mr. Chandan K, Dr. R. Disawal

Design and Fabrication of Auxetic foam for Defence Applications, Mr. M.V.C. Reddy, Mr. R. Sunil, Ms. M. Phulwalkar, Mr. S. Bhirodkar

SMA Actuated Solar Tracker, Mr. I. Meshram, Mr. R. Rathore, Mr. A. Shukla

A Flexible Manufacturing System with 3D Printing Machines, Mr. A. Yadav, Mr. K. Rajput

Social Network of Machines, Mr. K. Agrawal, M. Carpenter, Mr. H. Gupta, Mr. J. Jain

Demonstration of IEEE 802.22 on NI USRP, Mr. A. Bishnu

Visible Light Communication, Mr. S.K. Das

Home Automation, Mr. S.K. Das

#### Poster presentations:

Clustering and Sampling for Plant Genome Data, Mr. A. Shastri, Dr. K. Ahuja

Parallel FPGA Routing using Subgradient Algorithm and Steiner Trees, Mr. R. Agrawal, Dr. K. Ahuja

Non-invertible Cancelable Fingerprint Template Generation based on ridge features, Mr. R. Dwivedi, Dr. S. Dey

Quality Adaptive Enhancement for Fingerprint images, Mr. R. P. Sharma, Dr. S. Dey

Packet Payload Analysis for Attack Detection and Network Traffic Classification, Mr. M. Swarnkar, Dr. N. Hubballi

Slow Rate Denial of Service Attacks against HTTP/2, Mr. N. Tripathi, Dr. N. Hubballi

Image Quality Assessment and Enhancement, Mr. Piyush Joshi, Dr. Surya Prakash

Human Recognition using 3D EAR, Mr. I. Iyappan, Dr. S. Prakash

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### Poster presentations:

Integrating Physical Level Design and High Level Synthesis for Simultaneous Multi-cycle Transient and Multiple Transient Fault Resiliency of Application Specific Data-path Processors, Mr. D. Kachave, Mr. D. Roy, Dr. A. Sengupta

Service Oriented System, Mr. G.P. Tiwari, Dr. A. Srivastava

A Fast Outlier Detection Method in Non-stationary Environment, Mr. C. Gautam, Dr. A. Tiwari

Change Mining of Evolving Systems, Mr. A. Chaturvedi, Dr. A. Tiwari

Automatic Saline Level and Impurity Indicator Using Fringe Projection Profilometry and Fourier Fringe Analysis, Mr. P. Thakur

Potential Roles of Bacteria and Viruses in Disease Pathogenesis and Water Quality Monitoring, Mr. S. Singh, Ms. S. Jakhmola, Ms. C. Sonkar, Ms. D. Tiwari, Mr. O. Indari, Dr. H.C. Jha

Negative Bias Temperature Instability Effects on Computing Hardware, Mr. S.H. Panugothu, Mr. S. Neema, Dr. A. Sengupta

Tower Climbing Hexapod with SMA Actuated Suction Grippers, Mr. A. Sinkar, Mr. C. Mehta, Mr. A. Pandey, Mr. Karthick S

Molecular Recognitions of Drugs by Receptor Proteins via Multiscale Simulation Methods, Ms. N.A. Jonniya, Ms. R. Roy, Mr. MD Fulbabu Sk, Dr. P. Kar

Integration of Biodiesel Production with Wastewater Treatment using Cyanobacterial Species, Dr. K. Bala

Indian Regional Navigation Satellites System (IRNSS) Signal Receiver Error Identification, Mr. A. Althaf

Acquisition and Tracking of Ground Targets with Agile Satellites using Control Moment Gyros, Mr. A. Mony

Nano Photonic Devices for On-chip Optical Guidance and Control, Mr. L. Singh, Ms. S. Tidke

Navigation and Guidance of Airborne Precision Munitions to Intercept Ground targets with Infrared Sensors, Ms. Sreeja, S.

Attitude Dynamics and Control of Oceansat-2 with Offset Spinning Radar and Attitude Determination with GPS, Ms. B. Panda

A Social Network for Machines - Realizing INDUSTRY 4.0, Mr. S. Kumar, Mr. M. Carpenter, Mr. B. Purohit, Mr. V. Pandahre, Dr. B.K. Lad

Machine Tool Prognostics and Smart Manufacturing, Mr. A.K. Jain, Dr. B.K. Lad

Transport Phenomena in Porous Media and its Biomedical Applications, Mr. A. Kulkarni

Flow and Heat Transfer from Porous Bluff Bodies using LBM, Mr. Vijay Babu T R

Optical Diagnostics in Internal Combustion Engines, Mr. A. Kulkarni

Investigation of Rewetting during Round Water Jet Impingement on Bottom Hot Surface, Mr. A. Sharma

Shape Memory Alloy Based Micro-actuators for Micro-devices and Robotic systems, Mr. Akash K, Mr. T. Nath, Mr. Karthick S., Dr. I.A. Palani

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**Poster presentations:**

Boiling Heat Transfer Characteristics of Smooth and Enhanced Surfaces, Mr. V. Nirgude

Thermal Management of Electric Vehicle Battery Modules with Phase Change Materials, Mr. R. Kothari

Micro-Plasma Transferred Arc Deposition Process for ALM Applications of Metallic Materials, Mr. M.S. Sawant, Mr. S.H. Nikam, Mr. P. Kumar

Laser Based Micro and Nano Processing for Functional Device Development, Mr. A. Shukla, Ms. N. Patra, Dr. I.A. Palani, Dr. V. Singh, Dr. M. Anabarasu