

6th Industry-Academia Conclave

Indian Institute of Technology Indore

Program Schedule : November 20, 2018

09:00 hrs – 10:00 hrs : Registration, Helium Building (School Building)

10:00 hrs – 10:55 hrs : Welcome Remarks, Ground Floor, Helium Building (School Building)

Ground Floor, HB

10:00 hrs – 10:05 hrs : Introduction to IAC 2018 by Dr. Manish Kumar Goyal, Convener, CIR, IIT Indore

10:05 hrs – 10:10 hrs : Introduction to Academic Activities by Prof. N K Jain, Dean of Academic Affairs, IIT Indore

10:10 hrs – 10:15 hrs : Introduction to R&D Activities by Prof. A Kranti, Dean R&D, IIT Indore

10:15 hrs – 10:30 hrs : Welcome Address by Prof. Pradeep Mathur, Director, IIT Indore

10:30 hrs – 10:55 hrs : High Tea and Poster cum Networking Session

Room # 209 HB

11:00 hrs – 12:45 hrs: Invited Talks, Helium Building (School Building) - CSE// EE // Sciences

11:00 hrs – 11:15 hrs : Invited talk by Dr. Vijay Holimath, President and CEO, VividSparks IT Solutions

11:15 hrs – 11:30 hrs : Invited talk by Mr. Shyam Zambre, Senior Manager, VECV Ltd

11:30 hrs – 11:45 hrs: Invited talk by Mr. Raj Stanley, Head, Technology Strategy & Cooperation, Huawei

11:45 hrs – 12:00 hrs: Invited talk by Mr. Abhishek Singh, AGM, Yash Technologies

12:00 hrs – 12:15 hrs : Invited talk by Dr. Nishikant Ghadge, Head, Process Chemistry, NFIL

12:15 hrs – 12:30 hrs: Invited talk by Mr. G. Verulkar, Head & DGM- Plant Human Resources, Lupin

12:30 hrs – 12:45 hrs: Invited talk by Mr. Nilesh Trivedi, Asstt. Director, MSME

Room # 309 HB

11:00 hrs – 12:45 hrs: Invited Talks, Helium Building (School Building) - CE// ME // MEMS

11:00 hrs – 11:15 hrs : Invited talk by Mr. Suresh K. Sharma, CEO- Water, SPML Infra Ltd

11:15 hrs – 11:30 hrs : Invited talk by Mr. Uday Roman, Regional Manger, Wapcos

11:30 hrs – 11:45 hrs : Invited talk by Mr. S Malhotra, Managing Director, Kailtech

11:45 hrs – 12:00 hrs : Invited talk by Mr. Sachin Aggarwal, Senior VP, Eicher

12:00 hrs – 12:15 hrs : Invited talk by Mr. Adarsh Kumar, Partner, Masin Projects

12:15 hrs – 12:30 hrs: Invited talk by Mr. Kushagra Juneja, Advisor, ASSOCHAM

12:30 hrs – 12:45 hrs: Invited talk by Dr. Ravi Kumar, Director, BSDU

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13:00 hrs – 14:00 hrs: Lunch, Ground Floor of Helium Building (School Building)

14:00 hrs – 15:30 hrs: Panel Discussion: (Moderator: Prof Anand Parey)

15:30 hrs – 15:45 hrs: Tea and Networking Session, Ground Floor, Helium Building

15:45 hrs – 16:30 hrs: Poster Session, Start-up & Demonstrations in Helium Building

16:30 hrs – 17:45 hrs: Visit to the state-of-the-art facilities of IIT Indore

14:00 hrs – 15:30 hrs: Panel Discussion: Unlocking the full Potential of Academic Research – How industries can contribute ?

Room 308, Helium Building (School Building)

14:00 hrs – 14:10 hrs: Dr. Vijay Holimath, President and CEO, VividSparks IT Solutions

14:10 hrs – 14:20 hrs: Mr. Himanshu Malik, AGNIi, Initiative of the Government of India

14:20 hrs – 14:30 hrs: Mr. Adarsh Kumar, Partner, Masin Projects

14:30 hrs – 14:40 hrs: Mr. S Malhotra, Managing Director, Kailtech

14:40 hrs – 14:50 hrs: Mr. Suresh K. Sharma, CEO- Water, SPML Infra Limited

14:50 hrs – 15:00 hrs: Dr. Avinash Sonawane, IIT Indore

15:00 hrs – 15:10 hrs: Dr . Santosh K Vishwakarma, IIT Indore

15:10 hrs – 15:20 hrs: Dr. I A Palani, IIT Indore

15:20 hrs – 15:30 hrs: Prof. Sandeep Choudhary, IIT Indore

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15:45 hrs – 16:30 hrs: SB # 308 Helium Building (School Building)

Details of Poster Session, Start-up and Demonstrations in Helium Building (School Building)

Poster presentations:

- **Galactose and Catechol oxidase mimicking Cu(II)-Mannich base complexes as multifunctional homogenous catalyst**
Bidyut Kumar Kundu, Shaikh M.Mobin and Suman Mukhopadhyay
- **A transferable artificial neural network (ANN) model for atomic forces in nanoparticles**
Shweta Jindal and Satya S. Bulusu
- **Tuning of resonance energy transfer from 4',6-diamidino-2-phenylindole to an ultrasmall silver nanocluster across the lipid bilayer**
Jamuna K. Vaishnav and Tushar Kanti Mukherjee
- **Donor–Acceptor Phenothiazine Functionalized BODIPYs**
Madhurima Poddar, Prabhat Gautam, Yogajivan Rout, Anupama Ekbote and Rajneesh Misra
- **All-Organic Electrochromic Device**
Anjali Chaudhary, Devesh K. Pathak, Manushree Tanwar and Rajesh Kumar
- **Observational cosmology with redshifted 21-cm signal from neutral Hydrogen using Radio Astronomical Interferometers**
Arnab Chakraborty, Madhurima Choudhury, Aishrila Mazumder and Abhirup Datta
- **Probing physics of strong gravity, exotic matter and extreme magnetic fields**
Unnati Kashyap, Parul Janagal and Manoneeta Chakraborty
- **Computational Modeling of Astrophysical and Space Plasma**
Sayan Kundu, Sriyasriti Acharya and Bhargav Vaidya
- **Research Activities in Space and Atmospheric Sciences**
Saurabh Das and Sanmoy Bandopadhyay

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Details of Poster Session, Start-up and Demonstrations in Helium Building (Continued....)

Poster presentations:

- **Synthesis of tubuphenylalanine and epi-tubuphenylalanine: The C-terminus fragments of natural and synthetic tubulysins**
Ramesh B. Reddy, Premansh Dudhe and Venkatesh Chelvam
- **New Materials and Catalysts for Energy Applications**
Mahendra Kumar Awasthi, Soumyadip Patra, Debasish Panda, Dharmendra K. Panchariya, Vinod K. Sahu, Ankit Kumar and Sanjay K Singh
- **Synthesis, Structure and Catalytic Activity of Ruthenium Complexes with N-heterocyclic and protic-N-heterocyclic Carbene Ligands**
Dibya Yadav, Abhinav Raghuvanshi, Suryabhan Singh and Amrendra K. Singh
- **Lewis Base-Catalyzed One-Pot Stereoselective Synthesis of 3,3-Disubstituted Oxindoles and Spirooxindoles**
Anubha Yadav, SoumitraGuin, Sanjeeva K. Arupula, Joyanta Banerjee, Shaikh M. Mobin and Sampak Samanta
- **Construction of Porous Organic Nanostructures Using Cooperative Self-Assembly for Lipase-Catalyzed Inclusion of Gastrodigenin**
Sagar Biswas and Apurba K. Das
- **Design and Synthesis Of MOF and MOF/rGO Hybrid Materials For The Electrochemical Energy Storage**
Richa Rajak, Mohit Saraf and Shaikh M. Mobin
- **A benign approach to Synthesize 1D-Polymeric Chain Based [(CH₃NH₃)₃Bi₂Cl₉]_n Perovskite: A Novel Light harvester for Pb Free Photovoltaic Applications**
Khursheed Ahmad, Shagufi Naz Ansari, Kaushik Natarajan and Shaikh M. Mobin
- **Broken symmetry driven topological semi-metal to gaped phase transitions in SrAgAs**
Chiranjit Mondal, C. K. Barman, Aftab Alam, and Biswarup Pathak
- **Electronic Transport through DNA Nucleotides in Atomically Thin Phosphorene Electrodes for Rapid DNA Sequencing**
Rameshwar L. Kumawat, Priyanka Garg, Sourabh Kumar and Biswarup Pathak

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Details of Poster Session, Start-up and Demonstrations in Helium Building (Continued....)

Poster presentations:

- **Rod shaped iron oxide-carbon nanocomposites as highly efficient peroxidase mimics**
Siddarth Jain, Deepa Dey and Tridib K. Sarma
- **Point of Care (PoC) diagnostic kit to detect Bovine Ephemeral Fever in Cattle.**
Shruti Pyasi, Darshni Baghel and Debasis Nayak
- **Helicobacter pylori and its Pathogenesis in Gastric Cancer**
Shyam Singh, Dharmendra Kashyap, Priya Mishra, Budhadev Baral, Charu Sonkar and Dr. Hem Chandra Jha
- **Astrocytes under viral attack: Victims or Warriors?**
Shweta Jakhmola, Deeksha Tiwari, Omkar Indari and Dr. Hem Chandra Jha
- **Applications of micro machines: Phycotechnology**
Ghosh A., Anand V., Samadhiya K., Kashyap M. and Kiran B.
- **Development of 3D spheroid model for deep tissue penetration of targeted bioimaging conjugates for prostate cancer**
Mena Asha Krishnan, Sagnik Sengupta and Venkatesh Chelvam
- **Investigating Conformational Flexibility of N-glycans via All-atom Molecular Dynamics Simulations**
Rajarshi Roy and Dr. Parimal Kar
- **Investigating Effectiveness of Currently Used Protease Inhibitors against HIV-1 Subtype D by Using Multiscale Simulations**
Md. Fulbabu Sk, Nisha Amarnath Jonniya and Dr. Parimal Kar
- **A Fluorescence-based Technique To Accurately Detect The Milk pH Using Fluorophore**
Sandeep Choudhary, Bhavana Joshi and Abhijeet Joshi
- **Network Science for drug-target identification in complex diseases: new guns against old foes**
Complex Systems Lab, IIT Indore
- **Drug Repurposing: Helping Pharmaceutical Companies to Expand Treatment Options for Patients and Recoup Investments**
Mirza S. Baig, Anjali Roy, Uzma Saqib, Sajjan Rajpoot, Mansi Srivastava and Adnan Naim

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Poster presentations:

- **Identifying the Molecular Targets of (-)-Epigallocatechin-3-gallate (EGCG), A Green Tea Polyphenol via Chemoproteomics**
Sai Kumari Vechalapu and Sushabhan Sadhukhan
- **Chemical Biology of DHHC-mediated Protein S-palmitoylation and Dissecting Its roles in Breast Cancer via FASN and EGFR axis**
Satyam Singh, Suchi Chaturvedi and Sushabhan Sadhukhan
- **Research Group on Innovation Studies**
Dr. Ruchi Sharma
- **Gaze Behaviour and Human Error in Distracted Driving: Unlocking the Complexity of Articulatory Rehearsal Mechanism**
Sajad Najar and Dr. Sanjaram P.K.
- **Digital Humanities and Publishing Studies Research Group**
Dr. Nirmala Menon
- **An Anthropocene Primer**
Dr. Ananya Ghoshal
- **Additive Manufacturing of Metallic Materials by Micro-Plasma Transferred Arc Process**
Dr. Mayur S. Sawant, Pravin Kumar and Pankaj Kumar
- **High Quality Finishing of Bevel and Spur Gears by Abrasive Flow Finishing (AFF) Process**
Anand C Petare and Vivek Rana
- **Near-net Shape Manufacturing of Meso-sized Bevel and Helical Gears by Wire Spark Erosion Machining (WSEM) Process**
Bhavesh Chaudhary and Sandeep Gour
- **One Dimensional Local Domains and Radical Formula**
Dr. Anand Parkash
- **Dispersion estimates for the propagator of one dimensional difference operator associated with the Hermite functions**
Dr. Vijay Kumar Sohani and Devendra Tiwari

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Poster presentations:

- **Zeros and bounds of some special functions**
Prof. A. Baricz, Prof. S. Ponnusamy and Dr. Sanjeev Singh
- **Perturbation on Port Hamiltonian Systems**
Dr. Sk. Safique Ahmad
- **Theory and Application of Shift-invariant spaces**
Dr. Niraj Kumar Shukla (Faculty), Dr. Swaraj Paul (CSIR-RA) and Sudipta Sarkar
- **Mapping Properties of the d-plane Transform**
Dr. Ashisha Kumar
- **b-value Characterisation: Computational Methodology and Analysis**
Dr. Santanu Manna and Aditya Bansal
- **Regularization methods for monotone variational inequalities**
Dr. Charitha Cherugondi, Joydeep Dutta and D. Russell Luke
- **A Simple Modal Logic for Reasoning in Multigranulation Rough Set Model**
Dr. Md. Aquil Khan and Ms Vineeta Singh Patel
- **Research Highlights on geometric function theory**
Dr Swadcesh Kumar Sahoo, Mr Shankey Kumar, Mr Arstu, Ms Vibhuti and Mr Sudhananda Maharana
- **Finding zero of a nonlinear function using Newton's method**
Akshita Aggarwal and Dr Antony Vijesh
- **EEG signal classification using universum support vector machine**
B. Richhariya and Dr M. Tanveer
- **Capacitorless DRAM with Emerging Architectures**
Md. Hasan Raza Ansari, Manish Gupta, Nupur Navlakha and Abhinav Kranti
- **On-chip Optoelectronic Devices for Optical Communication and Interconnects**
Lalit Singh, Sourabh Jain, Swati Rajput, Surbhi Tidke and Mukesh Kumar

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Poster presentations:

- **Multiuser Hybrid Satellite-Terrestrial Spectrum Sharing Systems with Cooperative Relaying**
Vibhum Singh, Sourabh Solanki and Prabhat K. Upadhyay
- **LabVIEW FPGA Implementation of Sparse Channel Estimation.**
Abhijeet Bishnu and Dr. Vimal Bhatia.
- **Room-temperature Carbon Dioxide Sensing**
Aaryashree, Biswajit Mandal, Daya Shankar Sharma, Apurba K Das and Shaibal Mukherjee
- **Pore Detection in High-resolution Fingerprint Images Using Deep Residual Network**
Vijay Anand and Vivek Kanhangad
- **Real-Time power quality monitoring in emerging power system.**
Vinay K Tiwari, Amod C. Umarikar and Trapti Jain
- **FPGA Implementation of Reconfigurable Artificial Neural Network Accelerator and its Efficient On-chip Memory Architecture**
Gopal R. Raut, Vishal Bharti and Santosh Kumar Vishvakarma
- **Ultra low-power System-on-Chip design for Wireless Sensor Network.**
Kanishka Sharma (Btech-III: EE), Avinash Kumar (Btech-III: EE), Shivansh Dwivedi (Btech-III: EE), Gaurav Singh and Santosh Kumar Vishvakarma
- **Application of Synchronverter in Grid Connected PV Inverters**
Ajinkya Sonawane and Amod C. Umarikar
- **Transient Fault Resilient IP Core Design**
Deepak Kachave and Anirban Sengupta
- **Vulnerability of Partial Fingerprint-Based Authentication Systems**
Mahesh Joshi, Bodhisatwa Mazumdar and Somnath Dey
- **Fingerprint liveness detection using local quality features**
Ram Prakash Sharma and Dr. Somnath Dey
- **Hand Down, Face Up: Innovative Mobile Attendance System using Face Recognition and Deep Learning**
Aditi Agrawal, Mahak Garg, Surya Prakash, Piyush Joshi and Akhilesh M. Srivastava

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Poster presentations:

- **Nanostructured Transition Metal Oxides as Ambient Chemical Sensors**
Alfa Sharma, Kushal Mazumder, Yogendra Kumar and Parasharam M Shirage
- **Metal Oxide Based Hybrid Nanostructure for Electrochemical Biosensing Application**
Lichchhavi Sinha, Prateek Bhojane and Parasharam M. Shirage
- **Advances in Welding of Materials**
Mahesh Patel, A. Kulkarni, Sangam Sangral, Deepak Paliwal, Narendra Anjana and Jayaprakash Murugesan
- **Heterostructures of Transition Metal Dichalcogenides Alloys: An Efficient Catalysts for H₂ Evolution Reactions**
Srimanta Pakhira
- **Polycarboxylate Functionalised Fe₃O₄ Nanoparticles for Selective Adsorption of Congo Red dye**
Sobhan Chatterjee, Nikita Guha, Sarath K. Krishnan and Dhirendra K. Rai
- **Multi-Stimuli Responsive Metallogels**
C. Mahendar and Mrigendra Dubey
- **Flexible Perovskite Solar Cells for BIPV and Small-scale Applications**
Vishesh Manjunath, Narasimharao Kitchamsetti, Parameshwar Chikate, Parasharam M. Shirage and Rupesh S. Devan
- **High Energy Density & Long Life Cycle Supercapacitors**
Narasimharao Kitchamsetti, Vishesh Manjunath, Parameshwar Chikate, Parasharam M. Shirage, and Rupesh S. Devan
- **Mechanical and Thermo-chemical Routes to Enhance Surface Properties of Steels**
Aditya Litoria, Manoj Joshi, Digvijay Singh, Vikesh Kumar, Indrasen Singh and Santosh Hosmani
- **Lightweight Materials for Engineering Applications**
Hemant Borkar
- **Hot Deformation Behaviour of Multicomponent High Entropy Alloys for Structural Applications**
Avi Jain, Reliance Jain, Sandeep Jain and Sumanta Samal

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Poster presentations:

- **Functional Materials for Energy Storage and Piezoelectric Applications**
Sushmita Dwivedi, Tanvi Pareek and Sunil Kumar
- **Effect of tilt-twist angle on cleavage crack propagation**
Vipul Jain, Arya Chatterjee and Abhijit Ghosh
- **Wear studies on Boron modified Ti-6Al-4V alloys**
Tulika Dixit, Mohit Deshpande and K. Eswar Prasad
- **Synthetic jet impingement for electronic cooling application**
Dr. Santosh Kumar Sahu
- **Additive Manufacturing of Metallic Materials by Micro-Plasma Transferred Arc Process**
Dr. Mayur S. Sawant, Pravin Kumar and Pankaj Kumar
- **High Quality Finishing of Bevel and Spur Gears by Abrasive Flow Finishing (AFF) Process**
Anand C Petare and Vivek Rana
- **Near-net Shape Manufacturing of Meso-sized Bevel and Helical Gears by Wire Spark Erosion Machining (WSEM) Process**
Bhavesch Chaudhary and Sandeep Gour
- **Enhancement of Tribo-mechanical Properties of D-Gun Coated Al₂O₃ by Addition of Low Quantity SiC**
Dr. K. Sabiruddin
- **Shape memory alloy and Piezo electric actuators for energy harvesting applications-**
Karthick and Dr. I. A. Palani
- **Laser based surface processing and micro fabrication**
Mani Prabhu and Dr. I. A. Palani
- **Assesment of climate change impact on climate extremes over a river basin.**
Ashutosh Sharma, Dr. Manish Kumar Goyal and Dr. Jew Das

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Poster presentations:

- **A probabilistic estimation of vegetation droughts under varying climate scenarios in India**
Srinidhi Jha, Dr. Jew Das and Dr. Manish Kumar Goyal
- **Uncertainty and non-stationary analysis of streamflow extreme under climate change**
Dr. Jew Das, Srinidhi Jha, Dr. Manish Kumar Goyal and Dr. N. V. Umamahesh
- **Identification of Hydro-power Potential Sites in Snow fed Hilly Watershed**
Saket Dubey and Dr. Manish Kumar Goyal
- **Trends in evapotranspiration over India**
Anshul Srivastava, Sudhish Mishra, Satyajeet Meena, Divya Sharma and Munir A. Nayak
- **Distributed Hydrologic model for Narmada River basin**
Aman Patel, Devashish Shukla, Rahul Maheshwari, Rohan Agarwal, Shubham Sahu and Munir A. Nayak
- **Atmospheric rivers and South Asian Monsoon**
Bhaskar Datta, Harshit Mathur, Ravi Jangid, Shashank Bhargava, P. Deekshith and Munir A. Nayak
- **Land subsidence over Punjab from InSAR data**
Ayush Kesarwani, Suyash Gandhi, Rajat Bhati, Shalay Gupta, Parth Pandey and Munir A. Nayak
- **Flood risks and inundation mapping of Krishna River**
Aditya Singh, Daanish Mahajan, Ravi Sharma and Munir A. Nayak
- **Centre of Astronomy**
All faculty and post-docs of the centre
- **Simulations and Statistics of the Cosmic Dawn**
Suman Majumdar and Mohd Kamran
- **Statistical Mechanics of Plasmas in an Extreme Astrophysical Environment (Galaxy Cluster Mergers):
Opportunities for High-frequency Radio Instrumentation**
Siddharth Malu, Abhirup Datta, Sergio Colafrancesco and Surajit Paul
- **Study Of Ionospheric Total Electron Content Over Indore During Low Solar Activity**
Sumanjit Chakraborty, Deepthi Ayyagari, Abhirup Datta and Ashik Paul

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Details of Poster Session, Start-up and Demonstrations in Helium Building

Product/Prototype demonstrations from IIT Indore:

- Shape memory alloy based heat engine
- Lead free Piezo electric energy harvester
- Shape memory alloy integrated Under Water robotic systems
- Shape memory alloy based bio-medical device

Start-up presentations/demonstrations:

- AGNIi (Accelerating Growth of New India's Innovations), Initiative of the Government of India
- Chota Hospital Private Limited
- Masin Projects Private Limited