ISI – 03 Program Tentative Schedule
National Symposium on Instrumentation-43
7th-9th October, 2021
DAY - 1

07th October 2021	
09:00 am – 09:30 am	**Inaugural Ceremony** 1. Symposium Inauguration: Prof. S. Asokan: IAP Department Chair 2. Department history: Prof. S. Mohan (Former Chair) 3. Un-veil the IAP logo: Prof. S. Asokan and Prof. S. Mohan
09:30 am - 10:00 am	**Plenary Lecture** – Dr. Kota Harinarayana (ADA) : Development of Light Combat Aircraft-- Role of Test facilities & Technologies Chair: Prof. S. Mohan
10:00 am - 10:30 am	**Prof. Satish Dhawan Memorial Lecture:** Prof. Navakanta Bhat (CENSE, IISc): Nanostructured Chemiresistive Gas Sensors Session Chair-Prof. Sai Siva Gorthi
COVID-19-Session Chair-Prof. Sai Siva Gorthi	
10:30 am – 11:00 am	Invited Talk- Prof. Raghavan Vardharajan (MBU, IISc): Design of protein subunit Covid-19 vaccines

11:00 am – 11:20 am	**Tea Break** **Sensors and Transducers Poster session**

Nirmala Sanikommu, Advanced Research Centre for Powder Metallurgy and New Materials, Hyderabad.	Simulated LabVIEW Setup for studying the combined behavior of Supercapacitor and Battery in a Hybrid EV
Lalitha K, GSSSIETW, Mysore	Smart Water Quality Monitoring and Accounting System
Bhagyashree P. Joshi, Savitribai Phule Pune University, Pune	Design of Capacitance Sensor for Measuring Moringa Leaves Dryness

11:20 am – 12:45 pm	**Oral Presentation -** Invited talk: Prof. Praveen Ramamurthy (Materials Engg., IISc): Indigenous

(8 mins presentation+3 mins Q&A)	oxygen concentrator: 11:20 am -11:50 am

Sowjanya M. N., GSSSIETW, Mysore	Social Distancing and Face Mask Detection by Deep Learning
Mayuri Narkhede, MVP Samaj's KBT College of Engineering, Nashik	Automatic Temperature Measurement and Person Detection"
K. P. D. Anjani Kumar, Andhra University College of Engineering, Visakhapatnam	Smart Health Monitoring System using IOT
Rajesh S., Indian Institute of Science (IISc), Bangalore	Mobile Infection Testing and Reporting (MITR) labs for Point-of-Care COVID-19 Testing
Rajesh S., Indian Institute of Science (IISc), Bangalore	Development of Portable Fluorescence Reader for an affordable RT-PCR testing for COVID-19

12:45 pm – 02:15 pm	**Lunch Break** **Bio-medical Poster session**

Aishwarya K, Madras Institute of Technology, Chennai	Design And Implementation of RNS FIR Filter For EEG Artifacts and Classification
Ashin Prakash, NSS College of Engineering, Palakkad	Extraction of S1 and S2 frequencies for Heart sound signal using MATLAB"

Biomedical Instrumentation-Session chair-Dr. Jayaprakash

02:15 pm –04:25 pm **(8 mins presentation+2 mins Q&A)**	Invited Talk- Prof. Chulhong Kim (POSTECH, S. Korea): Multi-modal Imaging: Photoacoustic Imaging Plus More: 02:15pm-02:45pm

Rajesh Patel, IGCAR, HBNI, Kalpakkam	Classification of N-back cognitive task using low-cost single-channel ECG's features
Amrutha Vellupal, Indian Institute of Technology Madras, Chennai	Analysis of lateral ventricles in Alzheimer brain MR images using hybrid segmentation and kernel density estimation
Isha, Indian Institute of Science (IISc), Bangalore	Model based deep learning for reducing transducer effects in photoacoustic tomography

Invited talk: Prof. Raghavendra Sai V. V, (App. Mech., IITM): Fiber optic point-of-care and array biosensor device and technology development: 03:15 pm-03:45 pm

Invited talk: Prof. Renu John (BME, IITH): Topic to be updated: 03:45 pm-04:15 pm

	Vidyarani K. R., National Institute of Technology, Goa	An Inertial Sensing Mechanism for Measuring Gait Parameters and Gait Energy Expenditure	
04:00 pm – 05:00 pm		**ISOI AGM (only for ISOI Life Members)** **Felicitation by ISOI (04:30 pm -04:45 pm)**	
04:25 pm – 04:45 pm		**Tea Break**	

Sensor & Transducers-Session chair-Dr. Asha Bhardwaj

04:45 pm – 06:45 pm **(8 mins presentation+2 mins Q&A)**	Invited Talk: Gannavarpu Rajshekhar, (EE, IITK): Optical techniques for non-invasive precision metrology: 04:45 pm-05:15 pm Invited Talk: Satish Kumar Dubey, (SENSE, IITD): Smartphone based electro-optic sensing for medical diagnosis: 05:15 pm-05:45 pm		
	Babita, CSIR-National Physical Laboratory (NPLI), Delhi	Self-Heating Correction in Temperature Measurements for Platinum Resistance Thermometers	
	R. Dhanush, Madras Institute of Technology, Chennai	Design and Simulation of an efficient Cylindrical Dielectric Resonator Antenna (CDRA) Sensor for detecting Aliphatic Alcohols	
	Biswajith Das, Tata Institute of Fundamental Research, Mumbai	Measured and Simulated Performance of the Hybrid Array of Compton Suppressed HPGe Clover and LaBr3(Ce) Detectors at TIFR	
	Satyendra S Raghuwanshi, National Remote Sensing ISRO, Hyderabad	Design & Development of a portable survey grade bathymetry system for validating airborne and satellite based bathymetry data	
	Arpitha T C, Indian Institute of Science (IISc), Bangalore	Design of a Gripper with Embedded Shape Memory Alloy wire for Size Sensing	
	Prakruthi Hareesh, Globetek, Bangalore	Micro-powder blasting as a fabrication technique for MEMS devices	
06:45 pm- 07:15 pm	Invited Talk- Prof. Andrew Flewitt, (University of Cambridge): Thin Film Bulk Acoustic Resonator Sensors: from Engineering to Applications		
07:20 pm- 07:50 pm	Invited Talk- Prof. Keneth T. V. Grattan and T. Sun, (City, University of London): Fibre Optic Sensors for Industrial Applications Chair: Prof. Asokan S.		

ISI – 03 Program Tentative Schedule

DAY - 2

08th October 2021	
09:00 am – 09:30 am	ISOI Young Scientist Awardee Lecture: Dr. Jayaprakash (IAP, IISc): Improving optoacoustic imaging by incorporating optical and acoustic modeling
Thin-Film Technologies : Session chair: Dr. Amitava Ghosh	
09:30 am – 10:00 am	Plenary Lecture: Dr. Dr. T. G. K. Murty, (ISRO) : Deep space optical coatings
10:00 am -10:30 am	Tribute to Prof. K. L. Chopra: Dr. Milind Acharya: (Milman Thin Film Systems)

10:30 am – 11:30 am (8 mins presentation+2 mins Q&A)	Tribute to Prof H. A. Macleod: Dr. Balasubramanian: (JPL, NASA)	
	Dr. Anil Kumar	High efficiency anti reflection coating in extended visible region for airborne platform
	S. K. Singh	Performance Enhance of anti-reflection coating by baking in oxygen enriched environment

11:30 am – 11:45 am	**Tea break**	
Electro-optics-Session chair-Dr. Tapajyoti Das Gupta		

11:45 am – 01:35 pm **(8 mins presentation+2 mins Q&A)**	Technical Session- Invited Talk-5- Prof. Joby Joseph (Physics, IITD): Photonic Meta-materials, Multi-beam Interference Lithography & Super-resolution Imaging: 11:45 am-12:15 pm	
	Invited talk: Prof. S. K. Varshney-(EE, IITKGP): Nanoscale photonic devices for linear and nonlinear applications:12:15 am-12:45 pm	
	V. V. Lakshmanan Swamy / Kuzhandai Shamlee, IIT Madras, Chennai	Automated fabrication of U-bent fiber optic probes for single and multi-channel fiber optic sensor systems
	Kunde Santosh Kumar, Madras Institute of Technology, Chennai	Design and performance prediction of microwave patch antenna sensor for engine oil classification
	Swathi Padmanabhan, Indian Institute of Science (IISc), Bangalore	Mueller Matrix Evaluations of Polarized Monte Carlo for Multi-Layered Biological media
	Arumugaraj, Indian Institute of Science (IISc), Bangalore	Optical fluence compensation from photoacoustic images using deep learning

	Shiju Prasad S. R., Indian Institute of Science (IISc), Bangalore	Metasurface assisted design of bandpass filters in LWIR wavelengths.	
01:35 pm – 02:00 pm		**Lunch break**	

Automation and Control-Session chair-Prof. G. R. Jayanth

02:00 pm – 02:30 pm	Invited Talk- Prof. Boby George (EE, IITM): Advanced Interfacing Techniques for Sensors

02:30 pm – 04:00 pm (8 mins presentation+2 mins Q&A)	Technical Session: Dr. Tapas Chakravarthy, TCS: Unobtrusive sensing in Industry 4.0: 02:30 pm- 03:00 pm

	Tinu Valsa Paul, Manipal Institute of Technology, Manipal	Wind tunnel testing of a quadrotor four analysis of aerodynamic performance based on inclined wind.
	Dr. D. Kishore, Adikavi Nannaya University, Andhra Pradesh	Relay Feedback based Identification for Nonlinear Process
	Nikhil Sagar Dadem, Intl. Advanced Research Centre for Powder Metallurgy and New Materials, Hyderabad	Development of portable 3D printer with PID controlled heating, fine stepping
	Nagesh M S, GSSSIETW, Mysuru	An Raspberry pi based Wall Painting Robot
	Sudarshan Sivakumar, RNS Institute of Technology, Bangalore	Propotional-Integeral Controller for Aeronautical And Military Applications
	Sushil S S., National Institute of Technology, Tiruchirappalli	An IoT Based Wide-Range Automatic Low Current Measurement System

04:00 pm – 04:45 pm	**Tea Break** **Automation and Control Poster session**
	Deepika.T.V, GSSSIETW, Mysuru	Autonomous Robot for Delivering the Orders in Restaurants using Raspberry Pi
	Rayan kutty P P, RQEG, URSC, ISRO, Bangalore	Automatic Test System for Precision Digital Multimeter Calibration
	Atharva Deore, BITS Pilani – K.K Birla, Goa	Development of Instrumentation for HARP based Ion Beam Diagnostic System

AI Application-Session chair-Prof. Phaneendra K. Yalavarthy

04:45 pm – 05:55 pm (8 mins presentation+2 mins Q&A)	Technical Session: Prof. Sriram Ganapathy, (EE, IISc): Listening to the sound of COVID-19 - Developing diagnostic methods using acoustics: 04:45 pm-5:15 pm

Amruta R., GSSSIETW, Mysuru	Smart Traffic Monitoring System based on Density using Raspberry Pi and IoT
Akshaya S., Madras Institute of Technology, Chennai	Image Steganography Using Deep Reinforcement Learning
Adarsh J K., VIT Chennai	Ocean Surface Cleaning Autonomous Robot using object classification techniques and path planning algorithms
Harish G S., National Institute of Technology, Goa	Comparative Study of Numerical Methods for Automatic Estimation of Regularization parameter for Diffuse Optical Tomographic image reconstruction

05:55 pm – 06:25 pm	Invited Talk- [Recorded Session]- Prof. Aydogan Ozcan (ECE, UCLA): Deep Learning-enabled Computational Microscopy and Sensing

Departmental Symposium & Industry Demonstrations

DAY - 3

09th October 2021	
09:00 am – 09:30 am	Prof. M.R. Rao endowment lecture - Jagannath Nayak, (DRDO) : Effects of Atmospheric Turbulence on Directed Energy System for Anti-UAV Applications Chair: Prof. Asokan S.
Industry Demonstrations-Session chair- Mr. Vasant Kini	
09:30 am – 11:15 am	Industrial demonstrations: Openwater: Prof. Sanjiv Sambandan (09:30 am -09:45 am) TCS: Dr. Kaushik Das (09:45 am -10:00 am) Shanmukha: Mr. Arun (10:00 am -10:15 am) Voxelgrids: Dr. Arjun Arunachalam (10:15 am -10:30 am) St. Gobain glass, Chennai: Dr. Soumyadeep Misra (10:30 am -10:45 am) Dr. Shyam Vasudev Rao, Forus Health: 10:45 am -11:15 am
11:15 am – 11:30 am	Tea break Industry Poster session: M/s Premier Test Cal Systems, Chennai
11:30 am – 01:10 pm	Post-doctoral talks Session chair: Dr. Baladitya Suri Dr. Alwarsamy Ramasamy: Elastic instabilities of a thin elastic membrane exposed to a solvent droplet Dr. Suchita Yadav: Quantum dot-doped Fiber amplifiers Dr. Sudip Chatterjee: Designing low-loss Hollow core fibers in the visible regime: challenging the Rayleigh scattering of Silica Dr. Vikram S.: Electrospun Nanofibers: Principle, Instrumentation and applications Dr. Nimal J Kumar: Multi-sensor based anatomical ophthalmic anaesthesia training system
01:10 pm – 02:00 pm	Lunch break
02:00 pm - 03:55 pm	**IAP PhD Students Presentations (5 students 23 minutes each)** Session chair: Dr. Jayaprakash Suresh Nuthalapati -- Prof. Rajanna K.: Flexible sensors using solution processed 2D materials

	Manasa Perikala -- Dr. Asha Bhardwaj.: Carbon dots for white LEDs

Radhika Soni -- Dr. Chandni U.: Probing interlayer coupling in van der Waals heterostructures using microscopy and transport measurements

Prateek Katare -- Prof. Sai Siva Gorthi: Photons for Public Health: optical instrumentation for diagnostics

Rajesh S. -- Prof. Sai Siva Gorthi |
| **03:55 pm – 04:15 pm** | **Tea Break** |
| **04:15 pm - 06:10 pm** | **IAP PhD Students Presentations (5 students 23 minutes each)**
Session chair: Dr. Jayaprakash

Vikrant Kr. Singh -- Prof. G. R. Jayanth: Design and development of a modular automated tip-replacement system for Atomic Force Microscopes

Piyush Kumar Pandey -- Prof. G. R. Jayanth: High bandwidth multi-axis motion measurement system based on optical beam deflection

Lavanya Sureshbabu-- Prof. G. R. Jayanth: Control of Interaction Force in Constant-height Contact-mode Atomic Force Microscope

Vajresh Kumar -- Prof. Asokan S.: Fiber Bragg Grating Based Sensing Devices for Novel Applications in Bio-medical

Gautam Hegde -- Prof. Asokan S.: FBG sensors for aerospace applications |
| **06:10 pm – 06:30 pm** | **Vote of thanks** |