

**CODEC-2019**  
**Program Schedule**  
**Day-1**  
**19<sup>th</sup> December, 2019**

<u>Combined Hall</u>	Registration: 8:00 AM – 8:45 AM a. Welcome Address by Chairman : 8.45- 8.50 AM b. Address by Pro- VC (Academic) : 8.50- 8.55 AM c. Address by HOD, RPE and Felicitation of Prof. P. K. Basu : 8.55- 9.05 AM d. Speech by Prof. P. K. Basu : 9.05- 9.10 AM e. Vote of Thanks by Convener : 9.10- 9.15 AM	<b>Allotted time-slot</b> Keynote speaker : 40 mins. Invited talk : 20 mins. Paper presentation (oral): 12 mins.
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**Keynote-1: M. Jamal Deen,**  
*(McMaster University, Canada)*  
**9:15 AM to 9:55 AM**

**Sensing Technologies for Ubiquitous Healthcare**

**High Tea (9.55 AM to 10:20 AM)**

<b>Invited Talks</b>		
Name	Title	
<b>Anjan Chakraborty</b> <i>(IIT, Madras)</i>	Thermal Modelling of Semiconductor Devices and Systems	
<b>Subhananda Chakraborty</b> <i>(IIT Bombay)</i>	Enhancement of structural quality and optoelectronic performance of In(Ga)As Quantum dot Infrared Photodetectors/Focal Plane Arrays through in-situ and ex-situ treatments	
<b>Contributory Papers</b>		
Paper ID	Paper Title	Corresponding Author
NMD-83-137	Study of High frequency performance in GeSn based QWIP	Swagata Dey
NMD-64-1082	Non-Ohmic Characteristics of a Quantum Confined Degenerate Ensemble of Carriers in a Well of GaAs at Low Lattice Temperature.	B. Roy
NMD-98-309	Novel Low Power Non-Volatile High-k Memristor FET with Programmable SET/ RESET for Synaptic Learning	Debashis Panda
MLT-41-1402	Impacts of Emitter Layer Thickness on the Cut-off Frequency of GeSn/Ge Hetero junction Phototransistors	Harshvardhan Kumar
NMD-76-699	Performance Analysis of Direct Band-gap SiGeSn alloy based Solar Cell	Jaspinder Kaur
NMD-108-8972	Calculation of Intrinsic carrier density, its temperature dependence around room temperature in Ge <sub>1-x</sub> Sn <sub>x</sub> Alloy and Its Maximum Temperature of Operation	Shyamal Mukhopadhyay
NMD-95-3675	Design of a Low Power Linear Down-Conversion Mixer at 2.45GHz CMOS 180nm Technology	Swarup Dandapat
NMD-87-2262	Gate Leakage Current Assessment of AlGaIn/GaN HEMT with AlN Cap Layer	Shreyasi Das
NMD-90-5096	Performance enhancement of InGaIn/GaN green QW LEDs with different interlayers and doping in the barriers	Apu Mistry

**Session 1A**  
**(NMD-1)**  
**(10:20AM-1:00 PM)**

J. N. Bhar  
Hall 2

Invited Talks			
	Name	Title	
<b>Session 1B (MLT-1) (Photonics) (10:20AM- 1:00 PM)</b>	<b>Guo En Chang</b> <i>(National Chung Cheng University, Taiwan)</i>	Toward Efficient GeSn Photodetectors for Mid-infrared Silicon Photonics	
	<b>Somnath Ghosh</b> <i>(IIT Jodhpur)</i>	All-optical isolator for integrated optics applications	
	<b>Mrinmoy Pal</b> <i>(CSIR-Central Glass &amp; Ceramic Research Institute)</i>	Optical Fiber Amplifiers for Long-haul, FTTH and Free Space Communication	
	<b>Narottam Das</b> <i>(CQ University, Australia)</i>	Impact of Input Pulse Shapes on Nonlinear Pulse Propagation and Wave-mixing in Semiconductor Optical Amplifiers	
	Contributory Papers		
<b><u>S. K. Mitra</u> Hall 1</b>	Paper ID	Paper Title	Corresponding Author
	MLT-49-8029	Planar-Waveguide-Based Optofluidic Refractive Index Sensors for Real-Time Biomedical Sensing	Devesh Barshilia
	MLT-63-2509	The Scattering Parameter Analysis Using the Circuit Model of UTC-PD	Senjuti Khanra
	MLT-71-2685	Modes and Coupling in Seven-Core Optical Fiber	Sonali Basak
	MLT-69-3339	Parabolic Pulse Generation by Dispersion Increasing Chalcogenide Fiber (DICF) in Normal Dispersion Regime	Binoy Krishna Ghosh
LUNCH (1:00 PM-2:00 PM)			
Invited Talks			
	Name	Title	
<b>Session 2A (CSS-1) (Communication) (2:00PM- 4:00PM)</b>	<b>S. C. Bera</b> <i>(ISRO)</i>	Co-existence of SATCOM with Terrestrial Services	
	<b>Arpita Thakre</b> <i>(Amrita University)</i>	Machine Learning in Wireless Communication	
	Contributory Papers		
	Paper ID	Paper Title	Corresponding Author
	CAC-60-5058	A Comparative Study between True Color and Gray Scale Radar Imageries of Thundercloud	Sonia Bhattacharya
	CSS-36-172	Reduced Subcarrier Index Modulation scheme in OFDM System for Next-Gen Wireless Networks	Ipsita Sengupta
	CSS-48-8398	OFDM-SIM with Adaptive Modulation through Fuzzy Interface	Susmita Chaki
CSS-47-8688	A Novel Handoff Algorithm for 5G	Prithwijit Mukherjee	
CSS-37-464	Realization of a 5G Communication System With Rain Fading Mitigation Through Uplink Power Control	Susovan Mondal	
CSS-51-6749	An Approach to Reduce Power Consumption and Delay of Single Error Correction Codes in WSNs for IoT Applications	Jhila Jana	
<b><u>J. N. Bhar</u> Hall 2</b>			

Contributory Papers				
<b>Session 2BA</b> <b>(MLT-2)</b> <b>(Photonics)</b> <b>(2:00PM-3:00PM)</b>  <u>S. K. Mitra</u> <u>Hall 1</u>	Paper ID	Paper Title	Corresponding Author	
	MLT-39-3338	Design and Modelling of a FSS based Wideband Absorber	Priyanka Das	
	MLT-40-8195	RF Energy Harvesting Circuits and Designs	Joydeep Bannerjee	
	MLT-52-645	W-Band InP DDR IMPATTs for High Current Operation near Avalanches Resonance	Sangeeta Jana Mukhopadhyay	
	MLT-61-8378	Design of a 2.4 GHz Sensor with Low SAR Value for Measuring Vital Signs	Ananya Dey	
	MLT-72-5639	Design of an Ultra-wideband Polarization Insensitive Frequency Selective Absorber	Ankita Indu	
Invited Talk				
<b>Session 2BB</b> <b>(CSS-2)</b> <b>(Space Science)</b> <b>(3:00PM-4:00PM)</b>  <u>S. K. Mitra</u> <u>Hall 1</u>	Name	Title		
	Jan Weiss (UCAR, Boulder)	COSMIC-2 Mission Status and Initial Results		
	Contributory Papers			
	Paper ID	Paper Title	Corresponding Author	
	CSS-38-5994	An ANN approach in predicting Solar and Geophysical Indices from Ionospheric TEC over Indore	Sumanjit Chakraborty	
	CSS-44-9399	Impact of Intense Geomagnetic Storm on NavIC Signals over Indore	Naga Vijaya Deepthi Ayyagari	
CSS-45-1344	Characteristics of rain drop size distribution over a tropical location, Kolkata	Arijit De		
TEA BREAK (4:00 PM-4:15PM)				
Invited Talk				
<b>Session 3A</b> <b>(NMD-2)</b> <b>(4:15 PM-6:15 PM)</b>  <u>J. N. Bhar</u> <u>Hall 2</u>	Name	Title		
	Suchandan Pal (CEERI, Pilani)	GaN-based visible and ultra-violet light emitting diodes: An overview of design and fabrication		
	Contributory Papers			
	Paper ID	Paper Title	Corresponding Author	
	NMD-77-6609	Comparative Study of Threshold Characteristics in Low-Dimensional TFET with Quantum Confinement	Sharmistha Shee Kanrar	
	NMD-106-7243	Photo-absorption Enhancement of Hybrid Solar Cells through Metallic Nanoparticles Embedded with Nanopyramid Patterning	Sachchidanand	
	NMD-105-1177	Performance Analysis of Ga <sub>0.47</sub> In <sub>0.53</sub> Sb-FinFET and Si-FinFET for RF and Low Power Design Applications	Ankit Dixit	
	NMD-75-7503	Non-monotonic Electron Mobility in Asymmetrically Doped V-shaped Coupled Quantum Well Field Effect Transistor Structure	Ajit Kumar Panda	
	MLT-77-6835	Enhancement in Electrical Characteristics of AlGaIn/GaN HEMT Using Gate Engineered Dielectric Pocket Dual Metal Gate	Ajay Kumar Visvkarma	
	CAC-55-6045	Resistivity, dielectric, activation and optical behaviour of Y <sub>1-x</sub> Nd <sub>x</sub> CrO <sub>3</sub> nanoparticles	S. Halder	
NMD-78-6408	Characterization and TCAD Simulation studies of Single-Crystal Diamond Detectors	S. Mohapatra		

Invited Talks		
Session 3B (MLT3) (Special Session on Electromagnetics)	Name	Title
<b>(4:15PM- 5:45 PM)</b>  <u>S. K. Mitra</u> <u>Hall 1</u>	<b>Magdalena Salazar Palma</b> <i>(Universidad Carlos III de Madrid)</i>	Topic awaited.
	<b>Bhaskar Gupta</b> <i>(Jadavpur University)</i>	Research on RF MEMS Technology at Jadavpur University: An Overview
	<b>Ratnajit Bhattacharya</b> <i>(IIT Guwahati)</i>	An overview of application of chirps for communication and radar
	<b>Chinmoy Saha</b> <i>(IISST)</i>	Multifunctional Ultra wideband Antennas: Trends, Techniques and Applications
	<b>Somak Bhattacharya</b> <i>(IIT, BHU)</i>	An Ultra-thin X-band Metasurface-based Transmittive-type Linear to Circular Polarization Converter
<b>5.45 PM- 6.15 PM</b> (Special Lecture)  <u>S. K. Mitra</u> <u>Hall 1</u>	<b>Prof. Tapan K. Sarkar,</b> <i>(Syracuse University, USA)</i>	Futute of Electromagnetics Education
<b>6.15 PM – 6.45 PM</b> <u>S. K. Mitra</u> <u>Hall 1</u>	<b>Industry Session/ AP- S SIGHT</b>	
<b>Dinner (7:00 PM to 9:00 PM)</b>		

**CODEC-2019**  
**Program Schedule**  
**Day-2**  
**20<sup>th</sup> December,2019**

Registration: 8:30 AM – 9 AM

<b><u>Combined Hall</u></b>	<b>Keynote-2: C. Jagadish</b> ( <i>Australian National University , Australia</i> ) <b>9:00 AM to 9.40 AM</b>	<b>Semiconductor Nanowires for Optoelectronics Applications</b>
	<b>Keynote-3: G. Cuniberti</b> ( <i>TU Dresden , Germany</i> ) <b>9:40 AM to 10.20 AM</b>	

**TEA BREAK: 10:20 AM – 10:40 AM**

<b>Invited Talks</b>			
	Name	Title	
<b>Session- 4A (NMD-3) (10:40 AM-12:10PM)</b>	<b>Srabanti Chowdhury</b> ( <i>Stanford University, US</i> )	Wide bandgap devices for high power and high frequency electronics	
	<b>B. M. Arora</b> ( <i>Mumbai University</i> )	Luminescence imaging of silicon solar cells and modules	
<b>Contributory Papers</b>			
	Paper ID	Paper Title	Corresponding Author
<b><u>S. K. Mitra Hall 1</u></b>	NMD-100-4514	Development of ultraviolet photodetectors based on AlGaN alloys grown by Plasma Assisted Molecular Beam Epitaxy	Sayantani Sen
	NMD-102-9790	Development of Microfluidic System for Fluid Flow and Characterization	Alakananda Das
	NMD-104-3973	UV Photodetector Based on Al/Mg co-doped ZnO Thin	Arpita das
	NMD-72-5790	Theoretical Analysis of Energy and Momentum Relaxation Rate in GAN/AIN Superlattice Structures to Enhance the Performance in Optoelectronics Application	Mridanku Shekhar Pramanick

<b>Contributory Papers</b>			
	Paper ID	Paper Title	Corresponding Author
<b>Session- 4B (MLT-4) (Microwave) (10:40 AM – 12:10 AM)</b>	MLT-59-2596	Dual Band FSS Backed Printed Antenna with Fractal Geometry for Wearable Applications	Anand Krishnan M J
	MLT-64-5392	A Meta-surface Inspired Terahertz Antenna for Multiband Applications	Manikant Jha
	MLT-58-1827	A Tunable Dual Band Metamaterial Absorber for Terahertz Applications	Nikhil N B
	MLT-44-1533	An Ultra-thin X-band Metasurface-based Transmittive-type Linear to Circular Polarization Converter	Lavesh Nama
	MLT-51-1654	Design and simulation of RF Cavity For Ka-Band Multibeam Klystron	Santigopal Maity
	MLT-43-581	A wideband transmittive-type cross polarization converter for terahertz waves	Meghna Mishra

NMD: Nano Materials, Devices & Circuits;

MLT: Microwave & Light wave Technology

CSS: Communication & Space Science;

CAC: Computer Application & Control

Contributory Papers				
<b>Session-5A</b> <b>(MLT-5)</b> <b>(Photonics)</b> <b>(12:10 PM – 1:00 PM)</b>  <u>J. N. Bhar</u> <u>Hall 2</u>	Paper ID	Paper Title	Corresponding Author	
	MLT-47-5315	Energy Efficient Frequency Octupling using Mach-Zehnder Optical Modulator	Abhirup Das Barman	
	MLT-68-8854	Photon Density Distribution in Quantum Dot based Light Emitting Diode	Shampa Guin	
	MLT-57-787	Establishment of the validity of time transformation approach to study pulse compression in silica based single mode optical fibers.	Roshmi Chatterjee	
	MLT-54-592	Interaction of a Pair of Parabolic Self Similar Pulses in Nonlinearity Varying Chalcogenide Fibers (NVCFs)	Somen Adhikary	
Invited Talk				
<b>Session-5B</b> <b>(CAC-1)</b> <b>(12.10 AM – 1:00 PM)</b>  <u>S. K. Mitra</u> <u>Hall 1</u>	Name	Title		
	<b>Subir Sarkar</b> <i>(Jadavpur University)</i>	<b>Trust Management System in Wireless Self-Organizing Networks</b>		
	Contributory Papers			
	Paper ID	Paper Title	Corresponding Author	
	CAC-37-1602	Digital Fault Detection Techniques: A Review	Vivekananda Mukherjee	
CAC-40-1316	IoT-based Real-Time Remote ECG Monitoring System	Samik Basu		
LUNCH (1:00 PM-1:45 PM)				
<b>Keynote-4: Sankar Pal</b> <i>(ISI, Kolkata)</i> <b>( 1:45 PM to 2:20 PM)</b> <u>Combined Hall</u>	<b>Granular Data Mining in Video Informatics</b>			
<b>Poster Session</b> <b>(2.20PM-3.45PM)</b>  <b>(Outside)</b>	Paper ID	Paper Title	Corresponding Author	
	CAC-38-7362	Machine Learning Based Rain Attenuation Prediction Model	Md Anoarul Islam	
	CAC-46-2928	System Stability Performance Analysis on an Artificial Lower Limb	Susmita Das	
	CSS-41-6034	A Robust Approach of Eavesdropper Handling in Quantum Key Distribution	Akash Shrivastava	
	CSS-42-1482	Cloud and Rain Attenuation Statistics from Radiosonde and Satellite Observations over a Tropical Location	Arijit De	
	MLT-42-3347	Error probability analysis of Hexagonal 16QAM	Satyabrata Singha	
	MLT-66-3355	Circular patch antenna with ring structures for dual X-band and 5G applications	Vivek Parimi	
	MLT-65-7431	Trenched Core Waveguide Structure for Photonic Integrated Circuit	Madhusudan Mishra	
	CAC-61-9806	A Compact Multiband Antenna for Mobile Handset Application	Juin Acharjee	
	MLT-48-5129	Design of a Bident-Shaped Metamaterial Embedded Triple Band Microstrip Printed Antenna with Defected Ground Structure	Apratim Chatterjee	
	MLT-75-2860	A comparative study on determination of optimum detection threshold for minimum BER in a WDM receiver with SRS and FWM crosstalk	Santu Sarkar	
	MLT 74-508	Fizeau Interferometers: Extracting sub-band information	Siddharth Malu	
	NMD-89-3788	Design of dynamic threshold OTA based trans-conductance - capacitance loop filter for PLL applications	Priti Gupta	
	NMD-67-9697	Effect of Energy Loss due to 1s to 2p Excitation and Ionization of Neutral Impurities on the non-Ohmic Characteristics of a Compound Semiconductor at Low Lattice Temperature	S. Saha	
	NMD-80-5184	Performance and Circuit Analysis of Independent Gate FinFET	Ankush Chattopadhyay	
NMD-65-5672	Resistor less Electronically Tunable Quadrature Oscillator using Single CDTA	Rupam Das		

	NMD-96-8897	Comparative Study of AlGaIn/GaN HEMT and MOS-HEMT Under Positive Gate Bias Induced Stress	Manoj Saxena
	NMD-92-9837	Design of a Novel High-Q Active Inductor at 2.5 GHz in CMOS 180nm Technology	Moumita Das
	NMD-99-2487	Numerical Investigation of Gate Field Plate AlGaIn/GaN HEMT with Multi- Recessed Buffer	Neha
	NMD-82-770	Power Analysis and Optimization Using Non-Linear Modeling of Memristor: A Design Case Study	Panthadeb Saha
	NMD-85-942	An Asymmetric p – Gate MOSHEMT Architecture for High Frequency Applications	Khushwant Sehra
	NMD-70-585	Optimization of a Dual Material Double Gate TFET for Low Power Digital Application	Jayabrata Goswami
	NMD-101-6677	Technology CAD for Dual bit Non-volatile Flash Memory to Enhance Storage Capability	B Sachitra Kumar Patra
	NMD-107-8917	An overview of reactivity for various nano zero valent iron particles towards Fenton's oxidation	Avik De
	NMD-79-983	Design of 8-stage RF to DC Converter for Energy Harvesting Applications	Amena Najeeb
	NMD-81-363	Impact of Trap Charges and High Temperature on Reliability of GaAs/Al <sub>2</sub> O <sub>3</sub> based Junction less FinFET	Neha Garg

<b>Invited Talks</b>			
	Name	Title	
<b>Session-6A</b> (CSS-3) (Space Sc.) (3:45 PM – 5:15 PM)  <u>J. N. Bhar</u> <u>Hall 2</u>	<b>P. Banerjee</b> (Amity University)	A Review of Precise Time and Frequency Transfer via Satellite	
	<b>Contributory Papers</b>		
	Paper ID	Paper Title	Corresponding Author
	CSS-43-4884	Water Vapor Measurement Using Ground-Based GPS Receiver in Rainy and Non-Rainy Condition at a Tropical Location.	Souvik Majumder
	CSS-49-3343	Lower Atmospheric Wind Profile studies and validation using VHF Doppler Radar of University of Calcutta	Tanmay Das
	CSS-50-7746	Summer night-time E-layer echoes observed using University of Calcutta ST Radar.	Tanmay Das

<b>Contributory Papers</b>			
	Paper ID	Paper Title	Corresponding Author
<b>Session-6B</b> (CAC-2) (3:45 PM – 5:30 PM)  <u>S. K. Mitra</u> <u>Hall 1</u>	CAC-36-1591	IEEE 754 Floating Point Pipeline Multiplier with Karatsuba for Mitigation of Area and Power.	M A Rahman Shareef
	CAC-59-4584	Detecting Different Emotional State of Human Brain Using Bio- Potential Signals	Prithwijit Mukherjee
	CAC-45-9193	An Artificially Intelligent Fusion Approach for Prognosis of Alzheimer's disease	Suranjana Mukherjee
	NMD-88-9646	A Study on the Optimum Selection of Interpolation Factor for the Design of Narrow Transition-band FIR Filter using IBM	Subhabrata Roy
	CAC-41-2453	Detection of Coronal Holes in Solar Disk Image using Fast Fuzzy C-Means Algorithm	Sanmoy Bandyopadhyay
	CAC-51-9269	Modeling and Simulation of p53-Mdm2 Protein pathway in Normal Cells	Trisha Patra
	CAC-43-9240	Automatic Detection and Classification of Enhanced Brain Tumor using Machine Learning Algorithm	Poulomi Das
	CAC-56-7247	An Approach to Geometric Modelling Using Genetic Programming	Snigdhajyoti Ghosh
	CAC-48-3435	Identification of Satellite DNA in different species	Rachita Ghoshhajra
	CAC-54-837	An Empirical Study of Incremental Learning in Neural Network with Noisy Training Set	Shovik Ganguly

**TEA BREAK & VALEDICTORY (5:30 PM to 6:00 PM)**