



# NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR

## International Conference on Modeling, Simulation and Optimization

(CoMSO 2021)

December 16-18, 2021

Time	Inauguration	December 16, 2021
9:30 AM	Welcome address by <b>Dr. Ripon Patgiri</b> , Program Chair, CoMSO-2021	
9:35 AM	Address by <b>Prof. Sivaji Bandyopadhyay</b> , Director, NIT Silchar and Chief Patron, CoMSO-2021	
9:45 AM	Address by <b>Prof. Valentina E. Balas</b> , General Chair, CoMSO-2021	
9:55 AM	Address by <b>Dr. T. Madhan Mohan</b> , Head of National Bioinformatics & Advisor, DBT, <b>Special Guest</b>	
10:05 AM	Address by <b>Prof. Vincent Lee Chieng Chen</b> , Deputy Pro-Vice Chancellor, Curtin University Malaysia, <b>Chief Guest</b>	
10:15 AM	Address by <b>Dr. K.L. Baishnab</b> , Dean (Alumni Affairs), NIT Silchar and Patron, CoMSO-2021	
10:20 AM	Vote of Thanks by <b>Dr. Biplab Das</b> , Organizing Chair, CoMSO-2021	

Meeting Link for all the sessions: <https://meet.google.com/wse-vrgp-aqi>

Time	Keynote Talk	December 16, 2021
10.30-11.00 AM	Keynote Speaker: <b>Prof. Amir H Gandomi</b> , University of Technology Sydney, Australia Title: Evolutionary Modelling and Optimization	<b>Session Chair</b> Dr. Vipin Paul



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Technical Session-I			
Time (IST)	Paper ID	Paper title and authors	December 16, 2021
11:00AM-12:30 PM	39	Fast Implementation for Computational Method of Optimum Attacking Play in Rugby Sevens <i>Kotaro Yashiro and Yohei Nakada</i>	<b>Session Chair:</b> Prof. F.A. Talukdar & Dr. Ganti Ramesh
	12	A Contemporary Initiative to Uphold Cease COVID-19 using keras and tensorflow <i>Sd Sujeewan Tej, Natasha J V Velmury, Vasa Bhargav Sai, Vema Rahul Sairam and Anjali T</i>	
	7	Empirical analysis of far-field crop quality analysis architectures: A statistical perspective <i>Akshay Dhande and Rahul Malik</i>	
	13	A Comparative Study of Various Traditional and Hybrid Cryptography Algorithm Models for Data Security <i>Pravin Soni and Rahul Malik</i>	
	37	Chemical Reaction Optimization (CRO) for Maximum Clique Problem <i>Mahmudul Hasan, Md. Rafiqul Islam and Amrita Ghosh Mugdha</i>	
	41	A Review of Various Sign Language Recognition Techniques <i>Rashmi Gaikwad and Lalita Admuthe</i>	

Time	Keynote Talk	December 16, 2021
1.15-2.15 PM	Keynote Speaker: <b>Prof. Shun-Peng ZHU</b> , University of Electronic Science and Technology of China, China Talk title: Structural fatigue reliability design and assessment under uncertainty: recent advances	<b>Session Chair</b> Dr. Bipul Das
2.15 -3.00 PM	Keynote Speaker: <b>José António Correia</b> , University of Porto, Portugal	



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Technical Session-II

Time (IST)	Paper ID	Paper title and authors	December 16, 2021
3:15-5:30 PM	45	Real-time One-hand Indian Sign Language Alphabets and Numbers recognition in live video using fingertip distance feature <i>Rakesh Savant, Jitendra Nasriwala and Preeti Bhatt</i>	<b>Session Chairs:</b> Dr. K.L. Baishnab & Dr. Naresh Babu M.
	49	IRIS Image Encryption and Decryption based Application using Chaos system and Confusion technique <i>Archana K, Sharath Sashi Kumar, Pradeep P Gokak, Pragna M and Shruthi M L J</i>	
	70	MNIST Image Classification using Convolutional Neural Networks <i>Rupak Chakraborty, Ashesh Roy Choudhuri, Barnali Guha Thakurata, Bipsa Debnath, Debanjana Ghosh, Hrittika Maity and Neela Chattopadhyay</i>	
	78	Detection of objects using a Fast R-CNN based approach <i>Rupak Chakraborty, Amlan Dutta, Abhijit Pal, Ahmad Atik, Mriganka Bhadra and Md. Akram Khan</i>	
	114	Hybrid 3D-CNN Based Airborne Hyperspectral Image Classification with Extended Morphological Profiles Features <i>Anand R, Veni S and Geetha P</i>	
	117	Role of Decision Making for providing effective Healthcare <i>Sabuzima Nayak, Manisha Panda and Ripon Patgiri</i>	
	118	Data Secrecy: Why does it matter in the Cloud Computing paradigm? <i>Ripon Patgiri, Malaya Dutta Borah and Laiphrakpam Dolendro Singh</i>	



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Time	Invited Talk	December 17, 2021
10.00-10.30 AM	Keynote Speaker: <b>Dr. Tanujjal Bora</b> , Director, Center of Excellence in Nanotechnology, Asian Institute of Technology, Thailand	<b>Session Chair</b> Dr. Sujit Nath

Technical Session-III

Time (IST)	Paper ID	Paper title and authors	December 17, 2021
10:45 AM-12:30 PM	18	Hydrodynamic Coupling Between Comoving Microrobots <i>Sharanya S and T Sonamani Singh</i>	<b>Session Chair:</b> Dr. L.C. Saikia & Dr. Sushant Negi
	48	Structural and Optical Analysis of Hydrothermally Synthesized Molybdenum Disulfide Nanostructures <i>Nipom Sekhar Das, Koustav Kashyap Gogoi, Avijit Chowdhury and Asim Roy</i>	
	55	Comparative Study of Aero and Non-aero Formula student type race car using Optimum Lap <i>Shulabh Yadav, Rajan Swami, Tirth Lodhiya and Shivam Prajapati</i>	
	61	Simulation and Stabilization of a Custom-Made Quadcopter in Gazebo using ArduPilot and QGroundControl <i>Nakul Nair, Sareth K B, Bhavani R Rao and Ashish Mohan</i>	
	62	Construction of Reliability Single Sampling Plans using Dagum Distribution under Type-I Censoring <i>Vijayaraghavan R, Sathya Narayana Sharma K and Saranya C. R.</i>	
	84	Modelling and Simulation of Electric Vehicle with Synchronous Reluctance Motor Kindly make the change <i>Akash S Prasad, Prabu T, Prabhu Selvaraj and Govindaraju M</i>	



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Technical Session-IV			
Time (IST)	Paper ID	Paper title and authors	December 17, 2021
1:00-3:00 PM	86	Study of Effects of Disc Parameters on the Braking Torque of Disk Type of Magneto rheological Brake <i>Peri Krishna Karthik, Jagadeesha Thimmaiah, Seung Bok Choi and Hung Nguyen Quoc</i>	<b>Session Chairs:</b> Dr. Sumit Bhowmik & Dr. Wasim Arif
	87	Dynamic characteristics analysis of Kirloskar Turn Master35 machine tool bed with different polymer concrete materials <i>Ikramuddin Ahmed, Athul Vijay, Hafsa A, Manas P Vinayan, Jagadeesha T</i>	
	89	Comparative Study of Magnetorheological brakes from Magnetic Theory perspective by Finite Element Methods <i>Hafsa A, Athul Vijay, Manas P Vinayan, Bijja Kavya, and Jagadeesha T</i>	
	91	Effect of suspension parameter on lateral dynamics study of high speed railway vehicle <i>Yamika Patel, Vikas Rastogi and Wolfgang Borutzky</i>	
	100	Some Investigations on CdSe/ZnSe Quantum Dot for Solar Cell Applications <i>Kavitha K R, Vijayalakshmi S, Muralibabu B and Divyapriya V</i>	
	103	Design and Finite Element Analysis of a Mechanical Gripper <i>Mousam Bhagawati, Md Asaduz Zaman, Rupam Deka, Krishnava Prasad Borah, Partha Protim Gogoi, Maharshi Das and Nandini Arora</i>	

Time	Invited Talk	December 17, 2021
3.00 -3.45 PM	Invited Speaker: <b>Prof. Tatjana Šibalija</b> , Mechanical Engineering, Belgrade Metropolitan University, Serbia Title: <i>Efficient optimization of manufacturing processes: an evolutionary algorithms-based methodology</i>	<b>Session Chair</b> Dr. Simanchal Kar



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Technical Session-V			
Time (IST)	Paper ID	Paper title and authors	December 17, 2021
3:45-5:45 PM	15	V2G/G2V Bi-directional ON board EV charger using two phase Interleaved DC-DC Converter <i>Vineel Kumar K and K. Deepa Kaliyaperumal</i>	<b>Session Chairs:</b> Dr. Biplab Das & Dr. Asha Rani M.
	16	A Comparative Performance Analysis of Varied 10T SRAM Cell Topologies at 32 nm Technology Node <i>Siddhant Ahlawat, Siddharth, Bhawna Rawat and Poornima Mittal</i>	
	90	Modal and fatigue analysis of ultrasonic machining tool for performance analysis <i>Mehdi Mehtab Mirad, Saka Abhijeet Rajendra, Jasper Ramon and Bipul Das</i>	
	66	Defect Detection using Correlation Approach for Frequency Modulated Thermal Wave Imaging <i>Anju Rani, Vanita Arora, K. Ramachandra Sekhar and Ravibabu Mulaveesala</i>	
	93	A weighted fuzzy time series forecasting method based on clusters and probabilistic fuzzy set <i>Krishna Gupta and Sanjay Kumar</i>	
	99	Assessing and Predicting Urban Growth Patterns Using ANN-MLP and CA model in Jammu Urban Agglomeration, India <i>Vishal Chettry and Keerti Manisha</i>	
	134	An approach for isogeometric topology optimization for lattice microstructures <i>Subhrajit Dutta, Tuan HA Nguyen and Jarkko Niiranen</i>	



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Time	Invited Talk	December 18, 2021
9.30-10.15 AM	Keynote Speaker: <b>Prof. Rajkumar Buyya</b> , Director, Cloud Computing and Distributed Systems (CLOUDS) Lab, The University of Melbourne, Australia & CEO, Manjrasoft Pvt. Ltd., Melbourne, Australia Title: <i>Neoteric Frontiers in Cloud and Edge Computing</i>	<b>Session Chair</b> Dr. Ripon Patgiri & Dr. L. Dolendro Singh
10.30-11.15 AM	Keynote Speaker: <b>Prof. Nguyen Thoi Trung</b> , Director of Institute for Computational Science, Ton Duc Thang University, Vietnam Title: <i>A hybrid intelligent algorithm for structural damage detection</i>	

Technical Session-VI			
Time (IST)	Paper ID	Paper title and authors	December 18, 2021
11:15 AM-12:30 PM	98	Modelling Clusters in Streamflow Time Series Based on an Affine Process Model <i>Hidekazu Yoshioka and Yumi Yoshioka</i>	<b>Session Chair:</b> Prof. R.D. Misra & Dr. Partha Pakray
	72	Double Sampling Plans for Life Test Based on Marshall-Olkin Extended Exponential Distribution <i>Vijayaraghavan R, Saranya C R and Sathya Narayana Sharma K</i>	
	69	Machine learning for predictive analytics in personal finance <i>Rishabh Kalai, Rajeev Ramesh, and Karthik Sundararajan</i>	
	104	Analysis of Fractional Calculus Based MRAC and Modified Optimal FOPID on Unstable FOPTD Processes <i>Deep Mukherjee, G. Lloyds Raja, Palash Kundu and Apurba Ghosh</i>	
	116	Numerical Approximation of System of Singularly Perturbed Convection-Diffusion Problems on Different Layer-Adapted Meshes <i>Sonu Bose and Kaushik Mukherjee</i>	
	121	6G Communication: A Vision on Deep Learning in URLLC <i>Ashmita Roy Medha, Muskan Gupta, Sabuzima Nayak and Ripon Patgiri</i>	



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Technical Session-VII

Time (IST)	Paper ID	Paper title and authors	December 18, 2021
1:00-3:00 PM	43	A Complete Solution to a Long-run Sand Augmentation Problem under Uncertainty <i>Hidekazu Yoshioka and Haruka Tomobe</i>	<b>Session Chair:</b> Dr. Agnimitra Biswas & Dr. R.G. Nair
	119	A Survey on Optimization parameters and techniques for crude oil pipeline transportation <i>Amrit Sarkar and Adarsh K Arya</i>	
	132	Performance Enhancement of Solar Air Heater with the Application of Trapezoidal Ribs on the Absorber Plate <i>Suresh Gogada, Sujit Roy, Ankur Gupta and Biswajit Nath</i>	
	122	AHP-GRA integrated methodology for decision making in WEDM of Ti-6Al-4V alloy <i>Devarasiddappa D, Chandrasekaran M and Mandal KK</i>	
	123	Application of taguchi-dear method for parametric optimization of CI engine performance and emission with waste cooking oil biodiesel <i>Prasanta Kumar Choudhury and Niraj Kashyap</i>	
	112	<i>Thermo-Economic Analysis for The Feasibility Study of a Binary Geothermal Power Plant in India</i> <i>Shivam Prajapati, Shulabh Yadav, Raghav Khandelwal, Priyam Jain, Ashish Acharjee and Prasun Chakraborty</i>	





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Technical Session-VIII

Time (IST)	Paper ID	Paper title and authors	December 18, 2021
3:15-5:30 PM	108	<i>Chaotic Lorenz Time Series Prediction via NLMS Algorithm with Fuzzy Adaptive Step Size</i> <i>Rodrigo Possidônio Noronha</i>	<b>Session Chair:</b> Dr. Dipankar Bhanja & Dr. Jiwanjot Singh
	109	<i>Channel Adaptive Equalizer Design Based on FIR Filter using FVSS-NLMS Algorithm</i> <i>Rodrigo Possidônio Noronha</i>	
	110	<i>Direct Adaptive Inverse Control Methodology Based on Nonlinear Volterra Model via Fractional LMS Algorithm</i> <i>Rodrigo Possidônio Noronha</i>	
	111	<i>Indirect Adaptive Inverse Control Synthesis via Fractional Least Mean Square Algorithm</i> <i>Rodrigo Possidônio Noronha</i>	
	131	<i>Conjugate Heat Transfer Analysis in a Composite Building Wall: Effect of Double Plaster-Brick-Glass wool</i> <i>Biswajit Nath, Sujit Roy, Ankur Gupta and Suresh Gogada</i>	
	120	<i>Design and Simulation of Higher Efficiency Perovskite Heterojunction Solar Cell Based on a Comparative Study of the Cell Performances with Different Standard HTLs</i> <i>Pratik De Sarkar and K. K. Ghosh</i>	
	133	<i>Investigation of Hybrid Fiber Reinforced Concrete Beam–Column Joint Behavior using Fruit Fly Optimal NN</i> <i>Pallab Das</i>	