



International Conference on Modeling, Simulation and Optimization

(CoMSO 2020)

03-05, August 2020

Time	Inauguration	Aug 3, 2020
9:45 AM	Welcome address by Dr. Ripon Patgiri , Organising Chair, CoMSO-2020	
9:50 AM	Address by Dr. K. L. Baishnab , Program Chair, CoMSO-2020	
9:55 AM	Speech by Prof. M. A. Ahmed , Dean (R&C), NIT Silchar and Patron, CoMSO-2020	
10:00 AM	Address by Prof. Sivaji Bandyopadhyay , Director, NIT Silchar and Chief Patron, CoMSO-2020	
10:10 AM	Address by Prof. Valentina E. Balas , Aurel Vlaicu University of Arad, Romania, Special Guest	
10:20 AM	Address by Prof. Uday Shanker Dixit , IIT Guwahati, India, Guest of Honour	
10:30 AM	Address by Prof. Rajkumar Buyya , The University of Melbourne, Australia, Chief Guest	
10:40 AM	Vote of Thanks by Dr. Biplab Das , Organising Chair, CoMSO-2020	

*Anchor: Dr. Malay Dutta Borah, Technical Coordinator: Dr. Naresh Babu M.

Time	Keynote Talk	Aug 3, 2020
10:45-11:30	Keynote Speaker: Prof. Rajkumar Buyya , Director, Cloud Computing and Distributed Systems (CLOUDS), The University of Melbourne, Australia <i>Talk title: New Frontiers in Cloud and Edge Computing for Big Data & Internet-of-Things Applications</i>	
11:30-11:45	Break	
11:45-12:30	Keynote Speaker: Prof. U. S. Dixit , Professor, Indian Institute of Technology Guwahati, India <i>Talk title: Some Challenges in the FEM Modelling of Metal Forming Processes</i>	

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Technical Session-I			
Time	Paper ID	Paper title and authors	03/Aug/2020
1.00-3.00 PM	25	Product Priority Problem: A multi-objective optimization approach for product development based on customers' priority <i>Sidharth Sarmah and Dilip Datta</i>	Session Chair: Prof. Binoy K. Roy Co-Chairs: Dr. Partha Pakray & Dr. Praveen K. Gupta
	54	Classification of Sequence Data Using LSTM:An Application on Chaotic Sequences <i>Shailesh S, Anantha Krishnan M and Judy M V</i>	
	47	MLGARTC: Machine Learning Based Genetic approach in RSSI Tree climbing path improvisation of the Mobile Anchor's using K-Means clustering of Wireless Sensor Network <i>Thilagavathi Panneerselvam</i>	
	50	Modeling Performance and Power on Disparate Platforms using Transfer Learning with Machine Learning Models <i>Amit Mankodi, Amit Bhatt, Bhaskar Chaudhury, Rajat Kumar, and Aditya Amrutiya</i>	
	80	Multi Class Weld Defect Detection and Classification by Support Vector Machine and Artificial Neural Network <i>R.V. Patil</i>	
	81	Time Series Forecasting Using Markov Chain Probability Transition Matrix with Genetic Algorithm Optimisation <i>Naveen Yadav, Gurdeep Saini, Biju R Mohan and Nagaraj Naik</i>	
	83	Modeling Drivers of Machine learning in Healthcare Using Interpretive Structural Modeling Approach <i>Pooja Gupta and Ritika Mehra</i>	
	88	Deep Learning for Maize Crop Deficiency Detection <i>Subodh Bansal and Anuj Kumar</i>	

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Time	Paper ID	Paper title and authors	03/Aug/2020
3:30-5:30 PM	20	Usage of Internet of Things in Home Automation Systems: A Review <i>Suman Majumder, Sangram Ray, Chinmoy Ghosh and Shrayasi Datta</i>	Session Chair: Dr. Lalit C. Saikia Co-Chairs: Dr. Pinki Roy & Dr. Bipul Das
	36	Integral-tilt-derivative controller based performance evaluation of load frequency control of deregulated power system <i>Sandhya Kumari, Gauri Shankar and Biplab Das</i>	
	53	A novel effective single sensor MPPT technique for a uniform and partially shaded solar PV system via MSCA approach <i>Manoja Kumar Behera, Lalit Chandra Saikia, Satish Kumar Ramoji, Biswanath Dekaraja, Sanjeev Kumar Bhagat and Naladi Ram Babu</i>	
	55	Modeling and Simulation of a Multi-area Hydro-thermal Interconnected System Using FOPI μ Controller for Integrated Voltage and Frequency Control <i>Biswanath Dekaraja, Lalit Chandra Saikia, Satish Kumar Ramoji, Naladi Ram Babu, Sanjeev Kumar Bhagat and Manoja Kumar Behera</i>	
	61	Application of CSO Optimized TI minus DN Controller in LFC of a Solar Thermal Integrated Thermal System <i>Naladi Ram Babu, Lalit Chandra Saikia, Sanjeev Kumar Bhagat, Satish Kumar Ramoji, Biswanath Dekaraja and Manoja Kumar Behera</i>	
	62	Maiden Application of Hybrid Particle Swarm Optimization with Genetic Algorithm in AGC Studies Considering Optimized TIDN Controller <i>Sanjeev Kumar Bhagat, Lalit Chandra Saikia, Dehenuvakonda Koteswara Raju, Naladi Ram Babu, Satish Kumar Ramoji, Biswanath Dekaraja and Manoja Kumar Behera</i>	
	123	Numerical simulation of blocked blood vessel for early diagnosis of coronary artery disease <i>Sandip Saha, Pankaj Biswas and Sujit Nath</i>	
	40	Six Sigma Enablers for Incoming Material Quality Improvement and their interaction in Supplier Domain for Indian Manufacturing Scenario <i>Sudeep Pradhan, Ravi Reosekar and Srikanta Routroy</i>	
	27	Optimization of crude oil preheating process using evolutionary algorithms <i>Dimbalita Deka and Dilip Datta</i>	



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Time	Keynote Talk	August 4, 2020
8:00:00-9:00	<i>Keynote Speaker: Prof. Kalyanmoy Deb</i> , Koenig Endowed Chair Professor, Michigan State University, USA <i>Talk title: Evolution's Niche for Applied Optimization</i>	
10:00-11:00	<i>Keynote Speaker: Prof. Tanmay Basak</i> , IIT Madras, India <i>Talk title: Analysis of heat flow visualization and thermodynamic efficiency during thermal convection in cavities with distributed solar heaters</i>	

Technical Session-III			
Time	Paper ID	Paper title and authors	04/Aug/2020
11.15 AM-12.30 PM	30	Stability of female bicyclists on sudden braking <i>Dilip Datta, Arpeeta Saikia and Zahnupriya Kalita</i>	Session Chair: Dr. Tanmoy Malakar Co-Chairs: Dr. Agnimitra Biswas and Dr. Naresh Babu M.
	33	Stability of bicycle at low speed <i>Dilip Datta, Zahnupriya Kalita and Sudipta Saikia</i>	
	91	Improvement in Fault clearance time of the Cascaded H-Bridge Multilevel Inverter using Novel Technique based on Frequency Detection <i>Jiwanjot Singh and Hillol Phukan</i>	
	85	Studies on the optical and structural properties of exfoliated graphene oxide <i>Nipom Sekhar Das, Koustav Kashyap Gogoi and Avijit Chowdhury</i>	
	S3	Topology Optimization of Structures using Higher Order Finite Elements in Analysis <i>Sougata Mukherjee, Dongcheng Lu, Subhrajit Dutta, Balaji Raghavan, Piotr Breitkopf, Manyu Xiao</i>	
	S1	Performance Studies with Trapezoidal, Sinusoidal and Square Corrugated Aluminium Alloy (AlMn1Cu) Plate Ducts <i>Partha Pratim Dutta, Hirakjyoti Kakati, Polash P Dutta and Monoj Bardalai</i>	



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Technical Session-IV			
Time	Paper ID	Paper title and authors	04/Aug/2020
1.00-3.00 PM	26	Approximating non-intersecting closed curves through four-bar linkage mechanism <i>Dilip Datta, Chiranjeeb Deb, Abhishek Hafila and Debajani Das</i>	Session Chair: Dr. Krishna L. Baishnab Co-Chairs: Dr. Ganti Ramesh & Dr. Anish Kumar Saha
	28	Combined Crack and Unbalance Response Simulation for a Spinning Rotor <i>Pranjal Borah, Sandeep Singh and Sutanu Samanta</i>	
	66	<i>Weld Imperfection Classification by Texture Features Extraction & Local Binary Pattern</i> <i>R.V. Patil</i>	
	67	<i>Simulation and Behaviour of Vertically Oriented Planar Structure</i> <i>Vikram Singh and Keshav Sangle</i>	
	79	<i>Comparative Study of Optimal Controller Application on Non-linear Systems</i> <i>Niku Borgohain and Mrinal Buragohain</i>	
	95	<i>Modeling and Simulation of a Biped Walking Robot</i> <i>Randheer Singh, Vikas Kukshal and Vinod Singh Yadav</i>	
	98	<i>1-dimensional Model for Removal of Volatile Organic Compound propane in a Catalytic monolith</i> <i>Umang Bedi and Sanchita Chauhan</i>	
	114	<i>Seven Level Enhanced Modified T-type Multilevel Inverter (MLI) with reduce part count</i> <i>Jiwanjot Singh, Hillol Phukan and Tamiru Debela</i>	
	124	<i>Green Supplier Selection: An Empirical Investigation</i> <i>Sudipta Ghosh, Chiranjib Bhowmik, Madhab Chandra Mandal and Amitava Ray</i>	

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Technical Session-V: [International Symposium on Power Electronics and Control Systems \(PECS 2020\)](#)

Time	Paper ID	Paper title and authors	04/Aug/2020
3.15-5.15 PM	92	Impact and Scope of Electric Power Generation Demand using Renewable Energy Resources due to COVID-19 <i>Manish Kumar, Muralidhar Nayak Bhukya, Anshuman and Sachin</i>	Session Chair: Dr. Jiwanjot Singh and Dr. Sudipta Chakraborty Co-Chairs: Dr. Anupam Biswas
	96	A Simple Approach to Enhance the Performance of Traditional P&O Scheme under Partial Shaded Condition by Employing Second Stage to the Existing Algorithm <i>Depuru Shobha Rani and Muralidhar Nayak Bhukya</i>	
	106	Escalating Demand, Present and Future Status on Hybrid Electric Vehicles <i>Manish Kumar, Muralidhar Nayak Bhukya, Lalit Kumar and Sudarshan</i>	
	107	Analysis and Control of Civilian Aircraft Model Using Simulink <i>Utkarsh Sharma and Sudhir Nadda</i>	
	110	Factors Affecting the Efficiency of Solar Cell and Technical Possible Solutions to Improve the Performance <i>Manish Kumar, Muralidhar Nayak Bhukya, Vipin and Chandervanshi</i>	
	113	Order Reduction of linear time invariant large-scale system by Improved Routh Approximation & Improved Pade Approximation Method <i>Pragati Deb and Leena G</i>	
	115	Controller design for dynamic stability and performance enhancement of Renewable energy systems <i>Isha Rajput, Jyoti Verma and Hemant Ahuja</i>	
	116	A Note on Lyapunov Krasvoskii Funtional for Discrete Time Delayed Systems <i>Vipin Chandra Pal, Sudipta Chakraborty, Avadh Pati and Gurpreet Singh</i>	
120	Performance Comparison of DSTATCOM and PV fed DSTATCOM for Mitigation of Power Quality Problems <i>Gurpreet Singh, Yash Pal and Anil Kumar Dahiya</i>		



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Time	Keynote Talk	August 5, 2020
8:15-9:00	<i>Keynote Speaker: Prof. Yoonsuck Choe</i> , Professor, Texas A&M University, USA <i>Talk title: Understanding the Brain: Neural Network Control of Simulated Sensorimotor Agents</i>	
9:15-10:00	<i>Invited Speaker: Dr. Rituparna Deb</i> , University of South Alabama, USA <i>Talk title: Recent Developments and Engineering Applications in Multi-Objective Optimization using Evolutionary Algorithms</i>	
10:15-11:00	<i>Invited Speaker: Dr. Balaji Raghavan</i> , INSA de Rennes, France <i>Talk title: Accelerating topology optimization: where we are currently and where do we go next</i>	

Technical Session-VI			
Time	Paper ID	Paper title and authors	05/Aug/2020
11.15 AM-12.15 PM	S2	A Survey on Bloom Filter for Multiple sets <i>Lilapati Waikhom, Ripon Patgiri and Sabuzima Nayak</i>	Session Chair: Prof. Fazal A. Talukdar Co-Chairs: Dr. Rajdeep Dasgupta & Dr. Sumit Bhowmik
	102	Neural Machine Translation: Assamese-Bengali <i>Sahinur Rahman Laskar, Partha Pakray and Sivaji Bandyopadhyay</i>	
	104	An overview of crossover techniques in Genetic Algorithm <i>Joseph Pachuau, Arnab Roy and Anish Saha</i>	
	101	Sustainable Sourcing Using Combined Thinking Process <i>Sudipta Ghosh, Madhab chandra mandal, Chiranjib Bhowmik and Amitava Ray</i>	
	93	Demand Side Management based Load Frequency Control of Islanded Microgrid Using Direct Load Control <i>Subash Chandra Sahoo, Abdul Latif, Satyajeet Naidu, Shruti Patel, Ranjan Kumar and Dulal Chandra Das</i>	

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Time	Paper ID	Paper title and authors	05/Aug/2020
12:30-2:30 PM	16	Thermal performance study of bamboo and coal co-gasification in a downdraft gasifier <i>Monoj Bardalai, Banabir Das, Partha Pratim Dutta and Sadhan Mahapatra</i>	Session Chair: Prof. Rahul Dev Misra Co-Chairs: Dr. Dulal Ch. Das & Dr. Abhishek Paul
	18	Effects of Gurney Flap and Suction Slots on the Aerodynamics of a NACA0012 Airfoil <i>Sumit Shankar Sarvankar, Anindita Apurba Phukan, Abhijeet Konwar and Paragmoni Kalita</i>	
	19	Effects of Numerical Dissipation and Dispersion on Computing the Convection of a Sharp Scalar Cone <i>Shiv Bhawan Shivhare, Paragmoni Kalita and Prabin Halo</i>	
	21	Dynamic Analysis of Rotating FRP Composite Cantilever Beam <i>Diju Kumar Baro and Sachindra Mahto</i>	
	22	On-line Tool Wear Monitoring Using Low-Cost Data Acquisition System and LabVIEWTM Program <i>Banarasi Pandey, Binit Kumar Jha and Sachindra Mahto</i>	
	35	Thermal performance of parabolic solar trough collector by considering helical coil insert inside the absorber tube <i>Oveepsa Chakraborty, Biplab Das and Rajat Gupta</i>	
	60	Mathematical analysis on the behaviour of tumor cells in the presence of monoclonal antibodies drug <i>Biplab Dhar and Praveen Kumar Gupta</i>	
	74	Automated Analysis and Classification of Sleep Stages Based on Machine Learning Techniques from a Dual-Channel EEG Signal <i>Santosh Satapathy, Rupalin Nanda and D Loganathan</i>	

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Time	Paper ID	Paper title and authors	05/Aug/2020
3.00-5.00 PM	8	Modelling and Forecasting of Solar Radiation Data: A Case Study <i>Somila Hashunao</i>	Session Chair: Prof. Nidul Sinha Co-Chairs: Dr. Briti Sundar Sil & Dr. Malaya D. Borah
	57	Dye Sensitized Solar Cell Parameter Extraction using Particle Swarm Optimization <i>Soumik Chakraborty, Ranjith G Nair and Lalu Seban</i>	
	58	Modeling and Simulation of an Isolated CCGT and DSTS plant using BWO optimized PI λ D μ Controller for amalgamated control of Voltage and Frequency <i>Satish Kumar Ramoji, Lalit Chandra Saikia, Biswanath Dekaraja, Naladi Ram Babu, Sanjeev Kumar Bhagat and Manoja Kumar Behera</i>	
	65	Enhancement of Reactive Power Reserve using Salp Swarm Algorithm <i>Nibha Rani and Tanmoy Malakar</i>	
	78	Optimal Controller Design For LFC in Power System <i>Himangshi Chanmgai and Mrinal Buragohain</i>	
	27	Optimization of crude oil preheating process using evolutionary algorithms <i>Dimbalita Deka and Dilip Datta</i>	
	94	Dynamics of a class of modified Leslie-Gower predator-prey model with strong Allee effect on prey and non-monotonic rational functional response <i>Udai Kumar and Partha Sarathi Mandal</i>	
	125	Simulation of Solar Driven Potassium Formate Based Liquid Desiccant Dehumidification System <i>Satya Sekhar Bhogilla and Sai Kaushik A.</i>	