

# National Conference on Robotics & Mechatronics (NCORM 2020)

March 3-4, 2020

Mechanical Engineering Department  
Faculty of Engineering & Technology  
Jamia Millia Islamia(A Central University)  
New Delhi-110025

<b>ACTIVITY</b>	<b>Date</b>	<b>Time</b>	<b>Venue</b>
<b>Registration</b>	03-03-2020	9:00 AM – 10:00 AM	Auditorium Lobby
Inaugural Function	03-03-2020	10:00 AM – 11:30 AM	Auditorium Faculty of Engg
High Tea	03-03-2020	11:30 AM – 12: 00 PM	Auditorium Lawn
Key Note Address	03-03-2020	12:15 PM—1:00 PM	Auditorium Faculty of Engg
<b>Lunch Break</b>	03-03-2020	1:00 PM -- 2:30 PM	Auditorium Lawn
Technical Session A1	03-03-2020	2:30 PM—4:15 PM	Auditorium Faculty of Engg
Technical Session A2	03-03-2020	2:30 PM—4:15 PM	Committee Room First Floor
Tea Break	03-03-2020	4:15 PM – 4:30 PM	Auditorium Lawn
Technical Session B (Poster Session)	03-03-2020	4:30 PM – 5:30 PM	Mechanical Engineering Lawn
The Robotic Society Meeting (TRS GBM)	03-03-2020	5:30 PM – 6:30 PM	Robotics Lab (Room No-45-A)
<b>Day – 2</b>			
Key Note Address	04-03-2020	9:30 AM – 10:30 AM	Auditorium Faculty of Engg
Tea Break	04-03-2020	10:30 AM -11:00 AM	Mechanical Engineering Lawn
Technical Session C1	04-03-2020	11:0 AM – 12:30 PM	Auditorium Faculty of Engg
Technical Session C2	04-03-2020	11:0 AM – 12:30 PM	Committee Room First Floor
<b>Lunch Break</b>	04-03-2020	12:30 PM -- 2:00 PM	Mechanical Engineering Lawn
Technical Session D1	04-03-2020	02:0 PM – 03:30 PM	Auditorium Faculty of Engg
Technical Session D2	04-03-2020	02:0 PM – 03:30 PM	Committee Room First Floor
<b>Valedictory Function</b>	04-03-2020	04:0 PM – 5:30 PM	Auditorium Faculty of Engg
High Tea	04-03-2020	05:30 PM – 6:00 PM	Mechanical Engineering Lawn

**NATIONAL CONFERENCE ON ROBOTICS AND MECHATRONICS  
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**PAPER PRESENTATION SCHEDULE**

**SESSION SLOT: A1  
TIME: 2:30-4:15 PM**

**DATE: 03/03/2020  
VENUE: AUDITORIUM FET**

<b>Sl. No.</b>	<b>Paper ID</b>	<b>Paper Title</b>	<b>Session</b>
1	NCORM/2020/RT-214	Robot Selection for Pick and Place Operation using Hybrid Multi-Criteria Decision Making Methods	A1
2.	NCORM/2020/RT-25	One Hand: A semi-autonomous six DOF robotic manipulator	A1
3.	NCORM/2020/RT-215	Analysis and Simulation of 6 DOF Robotic arm using Robo analyzer software	A1
4.	NCORM/2020/RT-213	Failure Mode and Effects Analysis of Robotic Instrument used in Surgery	A1
5.	NCORM/2020/RT-211	Computer Vision and Machine Learning based Gesture controlled 3D Printed Robotic Hand	A1
6.	NCORM/2020/RT-27	Design of Assistive Fire-fighting Drone	A1
7.	NCORM/2020/RT-24	Develop A QUADCOPTER Controlled WithPixhawk Microcontroller	A1
8.	NCORM/2020/RT-270	Robotic Grippers: A review	A1
9.	NCORM/2020/RT-271	Manually Controlled Robot	A1
10.	NCORM/2020/RT-272	Robotic arm using mega controllers	A1
11.	NCORM/2020/RT-274	Barriers of Circular economy Adoption in Indian Context	A1
12.	NCORM/2020/RT-275	Autonomous RC Car	A1
13.	NCORM/2020/RT-276	Arduino uno based obstacle avoiding car	A1
14.	NCORM/2020/RT-277	Vision based obstacle avoidance on quadcopter	A1
15.	NCORM/2020/MT-211	Microgreens Computer	A1
16.	NCORM/2020/MT-210	A Novel Method for Measuring Segmental Bioelectrical Impedance of Human Joints at Multi-frequency	A1
17.	NCORM/2020/MT-22	Cloud-based Secure and Efficient Authentication Framework for Medical System using Elliptic Curve Cryptography	A1
18.	NCORM/2020/MT-290	Stray load losses and Mechanical losses in Electrical System-An Experimental Study	A1

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**PAPER PRESENTATION SCHEDULE**

**SESSION SLOT: A2  
TIME: 2:30-4:15 PM**

**DATE: 03/03/2020  
VENUE: FET COMMITTEE ROOM 1ST FLOOR**

<b>Sl. No.</b>	<b>Paper ID</b>	<b>Paper Title</b>	<b>Session Slot</b>
1.	NCORM/2020/MT-215	Effect of PWM duty cycles for solar powered e-vehicle	A2
2.	NCORM/2020/MT-213	Analysis of bioelectrical impedance measurements and Role of mathematical modelling in bone fracture healing	A2
3.	NCORM/2020/MT-28	Artificial Intelligence (Ai) and Its Applications in Today's Manufacturing in India	A2
4.	NCORM/2020/MT-214	Biomedical big data analytics for precision medicine: significance and associated challenges	A2
5.	NCORM/2020/MT-30	Detection of Isomorphisms of kinematic chain	A2
6.	NCORM/2020/MT-270	Design and Analysis of Automatic Seed Sowing machine	A2
7.	NCORM/2020/MT-271	Utility Of Cam & Follower in 4 Stroke SI Engine	A2
8.	NCORM/2020/MT-272	Road Cleaning System for College Campus	A2
9.	NCORM/2020/MT-21	Design and Simulation of High Performance Low Power Analog filters for Biomedical Applications	A2
10.	NCORM/2020/MT-274	Solar Powered Water Distillation System	A2
11.	NCORM/2020/ATSC2-227	Green logistics performance monitoring of IT enabled distribution system in evolving industry 4.0 framework	A2
12.	NCORM/2020/AT-213P	Fuel Quality and Quantity Analysis using IoT	A2
13.	NCORM/2020/AT-22	Detoxification, recycling and cost analysis of solar based wastewater treatment plant with the help of MBBR technology	A2
14.	NCORM/2020/AT-21	Performance and emission analysis of a Diesel engine fuelled with waste fried oil methyl esters blended with nanoparticle Zinc oxide	A2
15.	NCORM/2020/ATSC1-226	Artificial Intelligence and Law- An Analytical Study	A2
16.	NCORM/2020/AT-244	Performance Analysis of Vapour Compression Refrigeration System Using Nanoparticles: A Review Article	A2
17.	NCORM/2020/AT-245	Analysis of Energy Consumption in HVAC System using Hybrid Air Conditioning System	A2

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**PAPER PRESENTATION SCHEDULE**

**SESSION SLOT: B**

**DATE: 03/03/2020**

**TIME: 4:30-5:30 PM**

**VENUE: FET AUDITORIUM LAWN**

<b>Sl. No.</b>	<b>Paper ID</b>	<b>Paper Title</b>	<b>Session Slot</b>
1.	NCORM/2020/RT-29	Implementation of Actuating Mechanism for Robot used in Robo-Soccer	B
2.	NCORM/2020/MT-277	Disassembly line balancing using deep Reinforcement learning	B
3.	NCORM/2020/AT-221	A Study Depicting Compliant Mechanism to Perform as Hinges	B
4.	NCORM/2020/AT-220	Rack and Pinion Mechanism Implementation in a Radio-Controlled Vehicle	B
5.	NCORM/2020/AT-219	A Study Showcasing the Vehicle Suspension by Compliant Mechanism	B
6.	NCORM/2020/AT-241	ISM Analysis for Green Supply Chain in Indian Timber Market	B
7.	NCORM/2020/AT-272	EFFECT OF INJECTION PRESSURE ON PERFORMANCE OF DIESEL ENGINE	B
8.	NCORM/2020/MT-273	DESIGN AND ANALYSIS OF A MODIFIED SCOTT RUSSELL STRAIGHT-LINE MECHANISM FOR A ROBOT END-EFFECTOR	B
9.	NCORM/2020/RT-211	Computer Vision and Machine Learning based Gesture controlled 3D Printed Robotic Hand	B

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**PAPER PRESENTATION SCHEDULE**

**SESSION SLOT: C1**

**DATE: 04/03/2020**

**TIME: 11:00-12:30 PM**

**VENUE: AUDITORIUM FET**

<b>Sl. No.</b>	<b>Paper ID</b>	<b>Paper Title</b>	<b>Session Slot</b>
1.	NCORM/2020/MT-24	Design and Development of LEGO and Arduino Based Autonomous Rescue Robot	C1
2.	NCORM/2020/MT-27	IoT Based Smart Monitoring System in Agriculture, Vehicle Health	C1
3.	NCORM/2020/MT-26	Obstacle Avoidance in Mobile Robot Using Artificial Neural Network	C1
4.	NCORM/2020/MT-276	Analysis of Daily yield of SPVT Hybrid Active Solar Still	C1
5.	NCORM/2020/MT-279	Gesture controlled wheelchair for physically challenged people	C1
6.	NCORM/2020/MT-282	3D printing using additive manufacturing in OrthopaedicsF	C1
7.	NCORM/2020/MT-283	Robotics development with implementation of 5G mobile technology	C1
8.	NCORM/2020/MT-284	Optimal synthesis of six bar mechanism using particle swarm optimization	C1
9.	NCORM/2020/AT-24	An Integrated approach for green and sustainable manufacturing	C1
10.	NCORM/2020/AT-23	Numerical Modelling of a Sandwich Structure Having Kevlar® Honeycomb Core and Carbon –Epoxy Face Sheets	C1
11.	NCORM/2020/ATSC3-237	Tracing the Trajectory for the Automation Introduced in the Banking Sector	C1
12.	NCORM/2020/AT-28	Design of Gear Reducer	C1
13.	NCORM/2020/AT-278	Application of industrial engineering techniques- a case study	C1
14.	NCORM/2020/AT-279	Design of swich structures using Taguchi analysis	C1
15.	NCORM/2020/AT-283	Thermodynamic modeling and heat recovery analysis from cement clinker cooler	C1
16.	NCORM/2020/AT-23	Numerical Modelling of a Sandwich Structure Having Kevlar® Honeycomb Core and Carbon –Epoxy Face Sheets	C1
17.	NCORM/2020/AT-284	Recent Progress in Vibro-impact systems for energy harvesting	C1
18.	NCORM/2020/AT-286	Efficiency improvement of flat plate collector	C1

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**PAPER PRESENTATION SCHEDULE**

**SESSION SLOT: C2**

**DATE: 04/03/2020**

**TIME: 11:00-12:30 PM**

**VENUE: FET COMMITTEE ROOM 1ST FLOOR**

<b>Sl. No.</b>	<b>Paper ID</b>	<b>Paper Title</b>	<b>Session Slot</b>
1.	NCORM/2020/MT-275	Performance analysis of injection moulding manufacturing process by artificial intelligence technique – A review	C2
2.	NCORM/2020/MT-278	Energy simulation of a moderate building using Energy Plus: Analysis the performance of the building in a different wall condition in a Delhi climate zone	C2
3.	NCORM/2020/AT-217	Concern Resolution Process for In-house Manufacturing to resolve stud broken failure in Compressor hose	C2
4.	NCORM/2020/AT-228	Enhancement of Distilled Water Through the Water Surface Perturbation	C2
5.	NCORM/2020/AT-234	Diesel engine performance with Karanja biodiesel oil by using TOPSIS and VIKOR method	C2
6.	NCORM/2020/AT-236	State Estimation Based Filtering For Bearing Fault Identification From Noisy Vibration Signal	C2
7.	NCORM/2020/AT-238	Experimental study of Interfacial Heat Transfer	C2
8.	NCORM/2020/AT-239	The Effect of Cryogenic Cooling On Surface Quality and Tool Wear in Machining: A Review	C2
9.	NCORM/2020/AT-240	Ionic Liquids as Additives For Green Manufacturing – A Review	C2
10.	NCORM/2020/AT-242	Optimum Insulation Thickness for Building Walls	C2
11.	NCORM/2020/AT-243	Thermodynamic analysis of R134a, R12 and R1234ze in vapour compression refrigeration system	C2
12.	NCORM/2020/AT-246	CFD analysis on Effect of Fin Shape on the Thermodynamics Performance of Finned Tube Heat Exchangers	C2
13.	NCORM/2020/AT-270	Exhaust gas Recirculation System	C2
14.	NCORM/2020/AT-271	Aerodynamic characteristics of airfoil	C2
15.	NCORM/2020/AT-274	Investigation of Si <sub>3</sub> N <sub>4</sub> /ZrO <sub>2</sub> Reinforcements on the Microstructure And Mechanical Properties of Aluminium Hybrid Composites	C2
16.	NCORM/2020/AT-275	Effects of Various Chemical Treatments on Natural Fiber Reinforced Composites	C2
17.	NCORM/2020/AT-282	Thermo Acoustic Refrigeration	C2

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**PAPER PRESENTATION SCHEDULE**

**SESSION SLOT: D1**

**DATE: 04/03/2020**

**TIME: 2:00-3:30 PM**

**VENUE: AUDITORIUM FET**

<b>Sl. No.</b>	<b>Paper ID</b>	<b>Paper Title</b>	<b>Session Slot</b>
1.	NCORM/2020/RT-21	Kinematics and Development of the Stewart Platform Using Flexible Joints	D1
2.	NCORM/2020/RT-28	Multi-finger Robotic Arm Gripper	D1
3.	NCORM/2020/RT-23	Design and Development of Mecanum Wheel Robot	D1
4.	NCORM/2020/RT-273	Application of CRITIC and ROV method for robot selection problem	D1
5.	NCORM/2020/MT-23	Security Challenges Faced in IoT and Proposed Solutions	D1
6.	NCORM/2020/MT-281	Automated Waste Segregator	D1
7.	NCORM/2020/AT-223	Cost-Effective FDM based PLA/ABS 3-D Printer	D1
8.	NCORM/2020/AT-214	Effect of Cage Materials on Life of Ball Bearing	D1
9.	NCORM/2020/AT-212	Comparative Study of Detection of Isomorphism of Epi-cyclic Gear Trains	D1
10.	NCORM/2020/AT-27	Hybrid Composites for Roofing Tiles	D1
11.	NCORM/2020/AT-233	Optimum utilization of plates for flame cutting applications	D1
12.	NCORM/2020/AT-26	Context of industrial 4.0 with its futuristic aspects	D1
13.	NCORM/2020/MT-216	Deformation Due to Aerodynamic Loading of a Wind Turbine Blade by Performing a Steady-State-1 Way FSI (Fluid-Structure Interaction) Analysis	D1
14.	NCORM/2020/AT-217	Concern Resolution Process for In-house Manufacturing to resolve stud broken failure in Compressor hose	D1
15.	NCORM/2020/AT-273	Piston Failures and Maintenance	D1
16.	NCORM/2020/AT-285	Expired Volini as an alternative to existing corrosion inhibitors	D1
17.	NCORM/2020/MT-29	Use of Artificial Intelligence in Health Care in India: Challenging the Legal Limits	D1
18.	NCORM/2020/ATSC1-226	Artificial Intelligence and Law- An Analytical Study	D1

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**PAPER PRESENTATION SCHEDULE**

**SESSION SLOT: d2**

**DATE: 04/03/2020**

**TIME: 2:00-3:30 PM**

**VENUE: FET COMMITTEE ROOM 1ST FLOOR**

<b>Sl. No.</b>	<b>Paper ID</b>	<b>Paper Title</b>	<b>Session Slot</b>
1.	NCORM/2020/RT-22	Challenges and Solutions for Cloud Robotics Management in Smart Manufacturing Environment - A Short Review	D2
2.	NCORM/2020/RT-210	Gesture Control Based Car With Pickup Arm	D2
3.	NCORM/2020/RT-26	Computer Aided Modeling of Multi Finger Robotic Gripper	D2
4.	NCORM/2020/MT-29	Use of Artificial Intelligence in Health Care in India: Challenging the Legal Limits	D2
5.	NCORM/2020/MT-25	Design and Implementation of Vision based Autonomous Navigation Algorithms using Raspberry Pi Initio and mBot Robots	D2
6.	NCORM/2020/MT-216	Deformation due to aerodynamic loading of a wind turbine blade by performing a steady-state-1 way FSI (fluid-structure interaction) analysis.	D2
7.	NCORM/2020/AT-225	Energy simulation of a moderate building using Energy Plus: Analysis the performance of the building in a different wall condition in a Delhi climate	D2
8.	NCORM/2020/AT-224	A Case Study of Potential of Solar Energy in a Restaurant	D2
9.	NCORM/2020/AT-235	Analysing Issues Related to Adoption of Cellular Manufacturing Practices in Sports Industry	D2
10.	NCORM/2020/AT-215	Analysing the Enablers and Barriers of ISO 14001	D2
11.	NCORM/2020/AT-211	Integration of Phase Change Materials for Thermal Regulation and Cooling Load Abatement of Buildings in Typical Indian Conditions	D2
12.	NCORM/2020/AT-25	Fault diagnosis of rolling contact bearing	D2
13.	NCORM/2020/AT-210	Identifying the Barriers to Industry 4.0 in INDIA	D2
14.	NCORM/2020/AT-29	Improvement in mechanical properties and quality of FDM (3D printer) fabricated part	D2
15.	NCORM/2020/AT-276	FSW of dissimilar aluminium alloys	D2
16.	NCORM/2020/AT-277	Optimization of Economic Order Quantity Using Genetic Algorithm	D2
17.	NCORM/2020/AT-280	TRIZ : Theory of inventive problem solving	D2
18.	NCORM/2020/AT-281	Friction stir processing – a review	D2