

**Programme at a glance**

**Pre-Conference Workshop on 7th December from 11 AM to 6 PM at CAE Lab in MAE Department.**

Time	8 Dec (Mon) – Day 1		9 Dec (Tue) – Day 2			10 Dec (Wed) – Day 3				
08:00 – 08:45	Registration <i>Reception Desk, CCE</i>		SMDC Displays & Poster Session							
08:45 – 09:00	Inauguration (Kindly be seated by 8:40 AM)		<i>Foyer, CCE</i>							
09:00 – 09:30	<i>Auditorium I</i>		Invited Talk 3	Prof. Vineet Vashista, IIT Gandhinagar		Technical Session 6 (TS6)	A. Control and Dynamics II	B. Exoskeletons		
09:30 – 10:00	Tea Break and Networking <i>Ground Floor, CCE</i>		Invited Talk 4	Dr. Kiran Akella, DRDO, India			<i>Seminar Room 1</i>	<i>Seminar Room 4</i>		
10:00 – 10:30	B. M. Belgaumkar Memorial Lecture	Prof. Prasanna S. Gandhi, IIT Bombay		Technical Session 3 (TS3)	A. Linkages	Technical Session 7 (TS7)	A. Dynamics and Tribology	B. UAV/MAV		
10:30 – 11:00		<i>Auditorium I</i>			<i>Seminar Room 1</i>		<i>Seminar Room 4</i>	<i>Seminar Room 1</i>	<i>Seminar Room 4</i>	
11:00 – 11:30	High Tea		Tea Break and Networking			Tea Break and Networking				
11:30 – 12:00	Invited Talk 1	Prof. Sreenath Balakrishnan, IIT Goa		K. Lakshminarayana Memorial Lecture	Prof. Dibakar Sen, IISc Bangalore		iNaCoMM2025 Panel Discussion			
12:00 – 12:30	<i>Auditorium I</i>		<i>Auditorium I</i>		<i>Seminar Room 4</i>					
12:30 – 13:00	Technical Session 1 (TS1)	A. Compliant Mechanisms I*	B. Robotics and AI/ML	Photo Session in Auditorium II			Valedictory Session			
		<i>Seminar Room 1</i>	<i>Seminar Room 4</i>	SMDC Displays & Poster Session			<i>Seminar Room 4</i>			
13:00 – 14:00	Lunch <i>Ground floor, Guest House</i>		Lunch <i>Ground floor, Guest House</i>			Lunch <i>Ground floor, Guest House</i>				
14:00 – 14:30	Ashok Midha Memorial Lecture	Prof. Just Herder, TU Delft		Technical Session 4 (TS4)	A. Control and Dynamics I	B. Mechanics				
14:30 – 15:00		<i>Auditorium I</i>			<i>Seminar Room 1</i>		<i>Seminar Room 4</i>			
15:00 – 15:30	Tea Break and Networking		Tea Break and Networking							
15:30 – 16:00	Invited Talk 2	Dr. Umesh Gandhi, Toyota Research Institute North America (TRINA)		Technical Session 5 (TS5)	A. Robotics and Dynamics	B. Devices				
16:00 – 16:30	Technical Session 2 (TS2)	A. Compliant Mechanisms II*	B. Manipulators							
16:30 – 17:00		<i>Seminar Room 1</i>	<i>Seminar Room 4</i>							
17:00 – 17:30	<i>Seminar Room 1</i>		<i>Seminar Room 4</i>							
17:30 – 18:00	Tea Break and Networking		Tea Break and Networking							
18:00 – 18:30	Cultural Event (Kuchipudi Performance)		AMM GBM							
18:30 – 19:00										
19:00 Onwards	Dinner <i>Ground floor, Guest House</i>		Gala Dinner <i>Fountain-side, Guest House</i>							

\* Special sessions dedicated to the memory of Prof. Ashok Midha

**Paper IDs in the order of presentation**

Session	TS1 Day 1, 12:00–13:00	TS2 Day 1, 16:00–17:30	TS3 Day 2, 10:00–11:00	TS4 Day 2, 14:00–15:00	TS5 Day 2, 15:30–17:30	TS6 Day 3, 09:00–10:00	TS7 Day 3, 10:00–11:00	POSTER SESSION Day 2, 12:30–13:00
A	38, 72, 118, 50	20, 113, 57, 103, 56, 121	37, 88, 111, 33	17, 21, 100	109, 87, 35, 36, 61, 105, 39, 12	79, 44, 125	82, 95, 101, 115	18, 77, 97, 131
B	10, 94, 75, 90	99, 102, 22, 32, 86, 96	34, 51, 63, 13	16, 59, 46, 64	62, 114, 60, 31, 52, 30, 89, 81	7, 74, 84, 106	41, 70, 98, 110	

Track Assigned	Paper #	Title	Authors
TS1A Compliant Mechanisms I	38	Revisiting the Mechanical Advantage of Compliant Mechanisms	Vishwanath Ravindran; G. K. Ananthasuresh
	72	From Shallow to Deep: Bistable Arches with Discrete Elastic Rod theory	Bhangale Rohit Yogaraj; Susarla Satya Sai Krishna Bhanu; Rajat Goswami; Safvan Palathingal
	118	Topology optimization with quad element-based material mask approach for close to binary structures and compliant mechanisms	Prabhat Kumar; Anupam Saxena
	50	Synthesis of Compliant Mechanisms using the Beam Constraint Model	Lubaid Nisar; G. K. Ananthasuresh
TS1B Robotics and AI/ML	10	Effect of EEG Electrode Optimization via Multicollinearity Analysis and Physio-Psychological Influencers on Regression Model's Training Performance	Preetam Kumar Khuntia; P.V. Manivannan
	94	Geometrical Parameters Prediction of a Large Scale Planar Cable Driven Parallel Robot for Printing Applications using Convolutional Neural Networks	Bharath Raja Bhoopal Pedapudi; Pushparaj ManiPathak
	75	Generative Design and Modeling of a Knee Exoskeleton for Load-Carriage Assistance	Love Kumar Pathak; Sushant Kumar; Jyotindra Narayan
	90	Decomposed Physics-Informed Neural Architecture for Learning Inverse Robot Dynamics	Sinaya Naik; Jyotindra Narayan
TS2A Compliant Mechanisms II	20	An Analytical Study on the Effect of User-specifications for a Compliant Mechanism on the Feasibility Space Obtained from its Spring-Lever Model	N. Narahari; G. K. Ananthasuresh
	113	TO-biSPAs: Topology optimization of bidirectional soft pneumatic actuators	Swagatam Islam Sarkar; Prabhat Kumar
	57	Delineating kinematic and elastic components in the displacement advantage of joint-free compliant four-bar mechanisms	Raghavendra Katragadda; Pratyush Debata; G. K. Ananthasuresh
	103	On simultaneous use of negative and positive masks in topology optimization	Chilambwe Malama; Anupam Saxena
	56	Exploring the appearance of hinges in compliant mechanism designs using topological derivatives	Vageesh Singh Baghel; G. K. Ananthasuresh
	121	Topology optimization of compliant mechanisms using robust approach: A comparative study with quadrilateral elements	Swagatam Islam Sarkar; Prabhat Kumar
TS2B Manipulators	99	From Tree to Box: Demonstration of Vision-Based Robotic System for Fruit Harvesting and Packaging	Waqar Farooq Ganai; Mehvish Zahoor Reshi; Shayiq Maqbool; Wasil Waheed; Majid Hameed Koul
	102	Biomimetic Elephant Robot with Tendon-Driven Continuum Trunk and Flapping Ears	Divij Yadav; Nirjhar Das; Rickraj Kundu; Priyam Adhikary; Harsh Suresh Malodia; Debanik Roy; Madhu Vadali
	22	Design, Development and Motion Control of a Wall-climbing Robot with Manipulator for Spray-Painting of Ferrous Structures	Ravindra Singh Bisht; Rajan Sahai; Sameer Yadav; Dinesh Kumar; Shivam Kashyap; Soraj Kumar Panigrahi
	32	Motion Mapping between Kinematically Dissimilar Master and Slave Manipulator Arms	Prabhjot Kaur Bhatia; Gaurav Bhutani; S. Panda; D. C. Kar
	86	Constant orientation singularity-surface of the 3-RRR planar parallel manipulator	Anirban Nag
	96	Task-Based Configuration Selection of a Reconfigurable Manipulator for Non-Surgical Assistance	Shreyas M. Patel; Ashish Singla; Ekta Singla

Track Assigned	Paper #	Title	Authors
TS3A Linkages	37	Exploration of Intersecting Inflection Circles for Straight-line Crank Rocker Mechanism Synthesis	P. B. Shiwalkar; Mohan Nagrurkar; J. P. Modak; Marco Ceccarelli
	88	Coupler Curves of Rack-Pinion Five-Link Mechanism	Surya Pratap Rathour; Rama Krishna K; Prayagadhvaj Yadav
	111	Validation of collision-free spheres of Stewart-Gough platforms for constant orientations using the Application Programming Interface of a CAD software	Bibekananda Patra; Rajeevlochana G. Chittawadigi; Sandipan Bandyopadhyay
	33	Effect of Manufacturing and Assembly Tolerances on the Transmission Design of an MIS Robot	Amanpreet Singh; Jitendra P. Khatait
TS3B Cable Driven Systems	34	Characterization of Mechanism for Tension Adjustment in Tendon-Driven Medical/Surgical Robots	Amanpreet Singh; Jitendra P. Khatait
	51	Anthropomorphic Robotic Fingers Driven by Cable Pulling and Twisted String Actuation: Design and Experimental Evaluation	Bidipta Rana; Bhivraj Suthar
	63	Development of Rotary to Linear Transmission Using Wire Rope	Subrat; Jitendra Prasad Khatait
	13	Serpentine Synergy: A Drive Mechanism for Dual-Mode Soft Continuum Manipulator and Snake Robot	Rajashekhar V S; Aravinth Rajesh; Muhammad Imam Anugrahadi Athaillah; Gowdham Prabhakar
TS4A Control & Dynamics I	17	Influence of the direction of rotation on the dynamics of a system of two coupled rotors with cantilevered disks	A.L. Kozlov; M.Y. Temis; N.P. Petrukina
	21	Enhancing Multi-axle Electric Truck Suspension Performance using PID and Fuzzy Controllers	Mayank Khaparde; Shankar Krishnapillai; Piyush Shakyra
	100	Dynamic Modeling and Control of a 7-DOF Pipeline Inspection Robot under Holonomic Constraints	S. Haribabu; Pushparaj Mani Pathak
TS4B Mechanics	16	Analysis of Belleville springs for load-deflection	Ripusudan Agrawal; G.K. Ananthasuresh
	59	Bob The Bistable Arch Builder	Om Godse; Safvan Palathingal
	46	Computing the Centre of Elasticity in Planar Frames	Vishwanath Ravindran; G. K. Ananthasuresh
	64	Shape Design of Compliant Mechanisms Using Statically Indeterminate Trusses	Deepak Kumar Gupta; G K Ananthasuresh

Track Assigned	Paper #	Title	Authors
TS5A Robotics and Dynamics	109	Five-bar Mechanism as a Chess Playing Robot Using Vision and Stockfish AI	Nandhith Karthikeyan; Dinesh Challagolla; Ravi Kumar V.; Rajeevlochana G. Chittawadigi
	87	Design and Analysis of an Auto-lifting Mechanism (ALM) for an Automated Vertical Farming	Priyanka Verma; Kalpana Kashyap; Ekta Singla
	35	GearWhег: A gear-driven wheel-to-leg reconfigurable mechanism for terrain adaptive mobility	Vishal Garg; A. Padmaprabhan; Mervin Joe Thomas
	36	Stability Analysis of Lunar Rover for Roll-down from Ramp	Amit Kamboj; Gaurav Sharma; Arun Kumar Gupta; Abhishek Kumar; K. Balaji
	61	Modeling, Simulation, and Experimental Evaluation of a Compliant Articulated Leg for Hopping	Pramod Pal; Shishir Kolathaya; Ashitava Ghosal
	105	Collaborative Outdoor Terrain Mapping via Real-Time Multi-Robot SLAM	Aashish Sahu; Ritesh Suresh Ashtkar; Karri Surya Venkata Sreedath; Leela Krishna Vemulapalli; R Prasanth Kumar
	39	Studies on Acceleration and Transition of Gait in a Shape Memory Alloy Actuated Quadrupedal Robot	Teja Vittanala; D. Rashmi
	12	Manipulability Maximization of Branched Chain Robotic Manipulators	Ankur Deka; Basireddy Sandeep Reddy
TS5B Devices	62	Design of Flexure Based Laser Beam Steering Device	Rupesh Kumar; Ashish Paman; Subrat; Jitendra Prasad Khatait
	114	Design of Mechanical XOR Gate and Half-Adder Using Pinned-pinned Shallow Bistable Arches	Anurag Prakash; Mohamed Irshaath M; Priyabrata Maharana; G K Ananthasuresh
	60	Fabrication and Analysis of Linear Soft Vacuum Actuator	Dhruba Jyoti Das; Sachindra Mahto
	31	A Low Cost and Lightweight Passive Snare Gripper for Industrial Robots: Design, Integration, and Performance Analysis	Rampal Singh; Keyur D. Joshi; Pratik Pancholi; Shuja Ahmed
	52	Mathematical Modelling and Correlation of Dual Gimbal Antenna Mechanism with Dynamic Testing	D Manoj Reddy; Pavan Ravichand; Vijay Shankar Rai; Anoop Kumar Srivastava; K Balaji; Abhishek Kumar; A Shankara
	30	A Tunable Snap-through Mechanical Relief Valve	Michael John Bosco; Paul Gilmore; Gurmeet Singh; Umesh Gandhi; G. K. Ananthasuresh
	89	Layout and Design of snap-through-arch arrays for dynamic offloading footwear	Rohit Narayan; Sanjay Sharma; Pavan Belehalli; G. K. Ananthasuresh
81	Towards Haptic Based STEM Learning - A Basic Functional Prototype	Burhan Showkat; Majid H Koul; Shahkar A Nahvi; Babar Ahmad	

Track Assigned	Paper #	Title	Authors
TS6A Control & Dynamics II	79	A Human-in-the-Loop Control Framework for Knee Exoskeleton: Enhancing Safety and Flexibility	Sushant Kumar; Jyotindra Narayan; Mohamed Abbas
	44	Safety-based vibration control in and underactuated crane	Ankur Deka; Basireddy Sandeep Reddy
	125	Development of a Lab-Scale Mechatronic Test Rig to Evaluate Active Disturbance Rejection Control in Uncertain Dynamic Environments	Shoaib H. Peerzada; Mehak Majeed; Shahkar Ahmad Nahvi; Mohammad Abid Bazaz; Majid Hameed Koul
TS6B Exoskeletons	7	Synthesis of Four-bar Mechanisms for Mechanically Assisted Gait Rehabilitation	D. S. Mohan Varma; Aakash Rao; Shubham Kumar; Saksham Agarwal; Siddharth Keshre; B. V. Clinton Wilson
	74	Experimental Validation of a Passive Upper Limb Exoskeleton for Baggage Handling	Venkatesh R Kulkarni; Shital S Chiddarwar
	84	Pelvis-Anchored Portable Mechanism for Passive Energy Storage and Release While Walking	Sahil Chaudhari; Arpeet Dhal; Teja Krishna Mamidi; Vineet Vashista
	106	Design and analysis of adjustable self-powered finger exoskeleton mechanisms for rehabilitation	Rajkumar Gothandaraman; Sreekumar Muthuswamy
TS7A Dynamics and Tribology	82	Study On the Docking Contact Dynamics Between Two Spacecraft Using an Active Capture System	Manaswi Priya; D Manoj Reddy; Abhinav Puri; K Balaji; M Venkata Ramana; Vijay Shankar Rai; Sam Noble
	95	Tribological Performance of Coatings for Railway Applications: Mineral versus Oxide	Kushan D. S.; Shreedhar Sahoo; Mayank Kumar; Vikranth Racherla
	101	Influence of Bionic Texture on the Thermal Performance of Brake Disc	Jayant Tomer; Niharika Gupta
	115	Experimental study of load-bearing capacity of safety thread used in traditional Moku for Toddy tree climbing	Lalsingh Devsoth; Raju Peta; Raja Shekar; Venkatesham B; Ashok Kumar Pandey
TS7B UAV/MAV	41	Enhanced RRT Algorithm for AUVs Path Planning in 3D Static Environments	Nikita Srivastava; Kajal Kumari; Nitu Kumari; Rahul Prajapati; Prases K. Mohanty
	70	Modeling and Dynamic Analysis of a Hydro Jet Powered Unmanned Aerial Vehicle	Lochan Bhaskaruni; Bhivraj Suthar
	98	Design and Development of a Cost-Effective Unmanned Surface Vehicle (USV) for Inland Water Quality Assessment	Dwivedula Narasimha Sri Sourabh; Vinayak Maharshi; M.Balakumaran; Himabindu Allaka
	110	Flap like a bat: Soft pneumatic wings for biomimetic ornithopters	Besetty Satyanarayana Pardhu; Sirivelu Akhilesh; Bammidi Abhilash; Prabhat Kumar
Poster Session	18	Kinematic Analysis of Soft Robotic Manipulators based on Jacobian Matrix Approach	Aditya Dharkar; Shubhashis Sanyal
	77	Comparative Analysis of Experimental and Simulated Response for PI Speed Control and Parameter Estimation of Interplanetary Rover Actuator	Vevina Shreya Cutinho; Navneeth S. R.
	97	A Wind-Aware 3D Path Planning Framework for UAV-based Medical Delivery with Higher-Order Polynomial Trajectory Smoothing	Paidi Kanchana; Aditya Dharkar; Snehil Sanyal; Shubhashis Sanyal
	131	Towards an AI-Based Approach for Conceptual Design Synthesis of Multistate Mechanical Devices	Somasekhara Rao Todeti; Anurag Kumar