iNaCoMM2021 Schedule

December 09, 2021 (Thursday)

09:00 – 10:00	On-spot registration
10:00 – 10:30	Inauguration
10:30 – 11:30	Inaugural Talk: Dr. Unnikrishnan Nair, Director, Human Space Flight Center, ISRO
	Topic: Gaganyan: Challenges and Opportunities
11:30 – 12:00	High Tea
12:00 – 13:00	Session 1: Synthesis of Mechanism [Paper ID: 90, 105, 111, 142]
13:00 – 14:00	Lunch Break
14:00 – 14:45	Plenary Talk 1: Dr. Giuseppe Carbone, University of Calabria, Italy
	Topic: Rehabilitation Robotics
14:45 – 16:00	Session 2: Mechanism for Space Applications [Paper ID: 20, 34, 48, 62, 126]
16:00 – 16:15	Tea break
16:15 – 17:15	Session 3: Mechanism for Biomedical Applications [Paper ID: 96, 97, 133, 144]
17:15 - 18:30	Poster Session [Paper ID: 10, 19, 22, 28, 53, 74, 90, 140, 143]

December 10, 2021 (Friday)

10:00 – 10:45	Prof. B.M. Belgaumkar Memorial lecture *by* Prof. P. Chandramoulli, IIT Madras
	Topic: Tracked Vehicle Multi-Body Dynamics: An overview
10:45 – 11:30	Prof. K. Lakshminarayana Memorial lecture *by* Prof. Anirban Guha, IIT Bombay
	Topic: Tensegrity Mechanisms
11:30 – 11:45	Tea break
11:45 – 13:00	Session 4A: Robotics/Manipulators [Paper ID: 9, 49, 51, 59, 69, 89]
	Session 4B: Gear Box Modeling [Paper ID: 33, 67, 106, 124, 137, 145]
13:00 – 14:00	Lunch Break
14:00 – 14:45	Plenary Talk 2: Prof. M.F. Wani, NIT Srinagar
	Topic: Application of Tribology in Machines
14:45 – 15:15	Plenary Talk 3: Prof. P.M. Pathak, IIT Roorkee
	Topic: Soft Robotics
15:15 – 15:30	Tea break
15:30 – 16:45	Session 5: Robotics/Manipulators [Paper ID: 103, 104, 115, 116, 119]
16:45 – 17:15	Session 6A: Mechanism for Agricultural Applications [Paper ID: 7, 122, 123]
	Session 6B: Condition Monitoring [Paper ID: 66, 68, 138]
17:30 – 17:45	**Start-up Presentation:** FlexMotion Technologies, Team SML, IITB
17:45 – 18:15	**SMDC**
18:15- onwards	**AMM GBM**

December 11, 2021 (Saturday)

10:00 – 10:45	Plenary Talk 4: Prof. Ashutosh Tiwari, Director, Institute of Advanced Materials, IAAM, Sweden
	Topic: Emerging global trends in advanced materials research for achieving the net zero goals
10:45 - 11:00	Tea Break
11:00 – 11:45	Plenary Talk 5: Prof. Chongdu Cho, Inha University, South Korea
	Topic: Bio-medical Engineering and Applications
11:45 – 13:15	Session 7A: Mechanism [Paper ID: 4, 41, 63, 110, 127, 139]
	Session 7B: Composites [Paper ID: 46, 61, 64, 100, 136, 141]
13:15 – 14:00	Lunch Break
14:00 – 15:15	Session 8: Mechanism and Misc. [Paper ID: 50, 55, 81, 113, 146]
15:15 – 15:45	Valedictory Function

iNaCoMM2021 Session Details

Day-1

Session 1: Synthesis of Mechanism

09 December 2021   **1200 – 1300**

90	Suraj K. Mishra and C. S. Kumar Dynamic modelling a 6-DOF compliant flexure based Stewart micromanipulator
105	S. B. Lavanya, and G. R. Jayanth Modeling and Optimal Design of Bridge-type Displacement Amplifier
111	Priyabrata Maharana and G. K. Ananthasuresh Analysis of Connected Shallow Arches under a Load from a Moving Rigid Wedge
142	Saurav K. Dutta, B. S. Reddy, and Santosha K. Dwivedy Design of a Novel Mechanism for Actuation of a Bistable Buckled Beam

Session 2: Mechanisms for Space Applications

09 December 2021   **1445 – 1600**

20	Parth K. Kamaliya and S. H. Upadhyay Fold-line mechanics for ultra-thin membrane in gossamer space structure
34	Hemant Sharma and S. H. Upadhyay Geometrical Analyses and Packaging Behavior of Fold-able Cylinders with Bellows Pattern
48	V. Sri P. RaviChand, Divesh Soni, Sanjay Gorur, G. Sarwar, Shamrao, B. L. Narayana, S Narendra, B.P. Nagaraj, H N S. Kumar Evaluation of dynamic system characteristics of payload cover mechanism for spacecraft applications
62	Akshay A. Pachpor, Jayant P. Modak and Prashant B. Maheshwary Formulation of Approximate Generalized Generated Database Model for Low-Speed Gear Box Developed Based on Double Crank Inversion for a Four Bar Chain
126	Nazeer Ahmad, R Ranganath, D Poomani and Ashitava Ghosal Vibration isolation characteristic of a modified Gough-Stewart platform with the top platform filled with damping particles

Session 3: Mechanisms for Biomedical Applications

09 December 2021   **1615 – 1715**

96	Udit S. Parihar, Shreyas M. Patel, Suril V. Shah, Kaushal A. Desai, and Ankita Chugh Design of Jaw Rehabilitation Device for patients with TMJ Disorder
97	Aarush Gupta, Sandeep K Prajapati, Suril V. Shah, and Ankita Chugh Design, Development and Characterization of Jaw Biting Force Measuring Device for Assessment of the Masticatory System
133	Nilavjyoti Sarmah and Shyamanta M. Hazarika Kinematic Synthesis and Design of a Five Fingered Hand Exoskeleton
144	Raj D. S I, Prajwal Gurunath, Prajwal Kamath, Ninad S M, and Chandrashekara C V, Dynamic Characteristics of Human Hand-Arm System – Analytical and Simulation approaches

Poster Session

09 December 2021   **1715 – 1830**

10	Manikandan Hariharan, Vijyananda Kaup and Harish Babu A Methodology for the Structural Enumeration of Cam Modulated Linkages
19	Aniruddha Nayak, Vivek Gupte and Pravin Singru Studying the Effects of Varying Link-lengths in Double Lambda Mechanism and its Application to Rover Sus-pension Design
22	Vikas Rastogi, Sanjay H Upadhyay, Sammir Sakhare, and Kripa S. Singh Rigidization Mechanism for Double Layered Inflatable Circular Torus Structure
28	Darren A. Dsouza, Ankur Jaiswal and H. P. Jawale Positional Error Estimation of Five-Bar Mechanism under the Influence of Tolerances
53	Saurabh Chaudhary, Virendra Kumar and Soumen Sen An Optimization-Based Design of Open Chain Manipulator Arm: Incorporating Dimensional Uncertainty
74	Nilabro Saha, R. lochana G. Chittawadigi, and Subir K. Saha MechAnalyzer: Gear Meshing Visualization for Effective Teaching and Learning
140	Shivdayal Patel and Tanuja Sheorey Design and Development of Double Air Suction Resuscitation Device using Scotch Yoke Mechanism
143	C. Bharadwaj B V, K Abiram, Harish K, and Vivek S, Chandrashekara C V Dynamic analysis of MCF-7 using tensegrity model

Day-2

Session 4A: Robotics/Manipulators

10 December 2021   **1145 – 1300**

9	Monalisa Sharma and Shubhashis Sanyal Design of Pneumatically Actuated Soft Robotic Gripper for Gripping Cylindrical Objects of Varying Diameters
49	Kaustav Ghar, Bhaskar Guin, Nipu Modak and Tarun K. Naskar Optimum Blended Trajectory Generation of ABB SCARA Robot to Minimize Travel Time and Jerk with Dynamic Motion Analysis
51	Amanpreet Singh and Jitendra P. Khatait Tension Adjustment in Cable-Driven Robots used for MIS
59	Rajashekhar V S and Debasish Ghose Kinematic and Dynamic Analysis of a Six-Bar Aerial Gripper Mechanism
69	Ramachandra K and Sourav Rakshit Estimation of internal joint forces and resisting torques for impact of walking robot model
89	Suraj K. Mishra and C. S. Kumar Design Exploration of Stewart Platform

Session 4B: Gears Box Modeling

10 December 2021   **1145 – 1300**

33	Vikash Kumar, Subrata Mukherjee, and Somnath Sarangi Nonlinear Distribution of the Gearbox Dynamic Model including Tooth Cracks
67	Surinder Kumar and Rajesh Kumar Classification of worm gearbox fault using Dendogram Support Vector Machine.
106	R. P. Sekar, R. Ravivarman and Gadi Anil Effect of Balanced sliding velocity and slide to roll ratio on surface wear in symmetric profile modified high contact ratio spur gears.
124	Sabyasachi Dash, Praneet N. Chakravarthula, Safvan Palathingal Design of bistable arch-profiles by using bilateral relationship and shape optimization
137	Deepak Nigwa , Dinesh K. Pasi , Manoj Chouksey Modelling and Simulation of Car Suspension with Lin-ear and Nonlinear Spring
145	Pranay A Meka, Harshad Rokhade, Kiran K. Mannur, Sangamesh G. Ganiger and Chandrashekara C V Parametric Sensitivity Analysis of Structure Stability: Mathematical Formulation and Analysis

Session 5: Robotics/Manipulators

10 December 2021   **1530 – 1645**

103	Garima Bhandari, Pushparaj M. Pathak , Jung-Min Yang Bond Graph Modelling and Simulation of Pneumatic Soft Actuator
104	K.S. Vikrant and G.R. Jayanth A Diamagnetically Levitated Actuator Capable of Independent In-plane and Out-of-Plane Positioning
115	Pratik Prajapati and Vineet Vashista Motion Planning and Control of Two Quadcopters with Cable-suspended Point Mass Payload
116	Sudhanva Bhata, and Ananthasuresh G. K. Control of multiple ferro-bots for steady motion using an array of electromagnets
119	Vipin Pachouri and Pushparaj M. Pathak Dynamic Modeling of Planar Multi-Section Tendon Driven Continuum Manipulator (TDCM) Using "Euler-Lagrange Formulation"

Session 6A: Mechanisms for Agricultural Applications

10 December 2021   **1645 – 1715**

7	Abhishek Kar and Dibakar Sen Studies on Coupler Curves of a 4-Bar Mechanism with One Rolling Pair Adjacent to the Ground
122	Deepak Mahapatra and Jagpal S. Bal Design and development of multi-crop fibre extracting machine
123	Deepak Mahapatra ,Vikky Kumhar and Manoj Verma Design modification in transplanting mechanism of a manual rice transplanter for improved performance

Session 6B: Condition Monitoring

10 December 2021   **1645 – 1715**

66	Shivanku Chauhan and Mohd. Z. Ansari Role of Profile Parameters on the Sensitivity of Cantilever Sensor: A Numerical Analysis
68	Govind Vashishtha and Rajesh Kumar Feature selection based on Gaussian ant lion optimizer for fault identification in centrifugal pump
138	Neel Satwara and V N Patel Vibration Monitoring of Defective Shaft Bearing System

Day-3

Session 7A: Mechanism

11 December 2021   **1200 – 1300**

004	Ankur Gupta, Satyendra K. Prajapati and Sujoy Mukherjee Position Control Using a Physics-Based Model for Biomimetic Underwater Propulsor Actuated by IPMC
041	Faisal Hussain and Sanjay Ingole A review on frequency domain analysis approach for parametric identification of nonlinear joints
063	Diwakar Gurung, C.S. Kumar, and Vishwanath Nagarajan Robust path following control of Autonomous Underwater Vehicle using combined time delay estimation and backstepping method
110	B.N Arya and G. R. Jayanth Design and Analysis of a Miniaturized Atomic Force Microscope Scan Head
127	J. C. Atwal, M. R. Pattnayak, R. K. Pandey, Pranabesh Ganai, Ashok Atulkar, Vivek Bhardwaj and Niharika Gupta Mechanisms responsible for performance improvements of pocketed and textured lubricated interfaces
139	Bittu Kumar Singh, Tanuja Sheorey, and Vijay Kumar Gupta Design of mechanisms for Actuating piezoelectric based sector micro-pump

Session 7B: Composites

11 December 2021   **1200 – 1300**

46	Surendra Kumar, Saurabh Mishra, and Amit Kumar Effect of interface on elastic properties and vibration characteristics of CNT-reinforced composites
61	Bhandarkar Vivek and Tandon Puneet A Review on Recent Techniques and Current Challeng-es in identifying defects in Additively Manufactured Metal Components
64	Anand Prakash Mall and Puneet Tandon Design and Development of Heterogeneous Porous Scaffold - A Review
100	Bikram S. Solanki, Prakhar Khemka, Harpreet Singh, Tanuja Sheorey Fabrication and characterization of aluminum oxide based polypropylene filaments
136	Roopendra K. Pathak, Shivdayal Patel, Vijay K. Gupta Ballistic impact behavior of 3D hybrid composite laminates
141	Murlidhar Patel and Shivdayal Patel Numerical Analysis on Hexagonal Honeycomb Sandwich Structure under Air Blast Loading

Session 8: Mechanisms and Miscellaneous

11 December 2021   **1400 – 1515**

50	Koushik Kabiraj and Sourav Rakshit A New Method for Solving Simultaneous Impact Problems in Constrained Multibody Systems
55	S. M. Gondane, P. N. Belkhode, M. P. Joshi, P. B. Maheshwary and J. P. Modak Experimental Data Based Model of Fracture of Adhesive Joint for a Link of Mechanism made from Bamboo
81	Rajendra K. Arya , Ratnesha Bafna, Ujwal Pawar, Prasanna Gandhi Mechatronics and algorithms for analysis and control of the laser beam spot size for 3D-microprinting machine
113	N S S Sanjeevi and Vineet Vashista Effect of Passive Springs on Taskspace Stiffness of a Cable-Driven Serial Chain Manipulator
146	Robin Sharma, P. Ganai, V. Pare H. Kanchwala and S J Srihari Validation of a steering system mathematical model via test rig measurements