

Session-Wise List of Papers					
Time	Paper No	Title of the paper	List of Authors	Affiliation	Country
December 18 2018					
Session 2A: Actuators and Sensors Chair: Prof. M. S. Bobji Co-chair: Prof. S. Deepak					
Invited Talk: A Macro-Micro Manipulator: Planar Laser Cutting Machine by Prof Can Dede					
11:30-11:45	21	Harvesting Energy from Chaotic Vibration	Jin Xie, Jian-Qi Zhang and Zhaohui Liu	Southwest Jiaotong University	China
11:45-12:00	26	Modelling of Piezoelectric Energy Harvester for Medical Applications using Intelligent Optimization Techniques	Mangaiyarkarasi Padmanaaban and Lakshmi P	Anna University	India
12:00-12:15	84	A Novel Initially-retracting Electrothermal Microactuator	Dhananjay Yadav and G K Ananthasuresh	Indian Institute of Science	India
12:15-12:30	54	Simultaneous Control of Passive Stiffness Characteristics and Position with Elastically Constrained Underactuated Mechanism	Takeshi Tawada, Nobuyuki Iwatsuki and Ikuma Ikeda	School of Engineering, Tokyo Institute of Technology	Japan
Session 2B: Robotics 1 Chair: Prof. Amaresh Co-chair: Prof. S. Chiddarwar					
Invited Talk by Dr Shital					
11:30-11:45	58	Dynamic analysis of a legged lander system	Umesh Singh, Prof. Ashitava Ghoshal and Dr. Manish Trikha	Indian Space Research Organisation	India
11:45-12:00	112	Development of a Climbing Robot Based on Multi-Suction Cups Mounted on Timing Belt Mechanism	Ravindra Singh Bisht, P M Pathak and Soraj Kumar Panigrahi	IIT Roorkee	India
12:00-12:15	134	Motion control of Omnidirectional Mobile Robot Using Bond Graph and Flatness Based Controller	Saumya R Sahoo and Shital S Chiddarwar	Visvesvaraya National Institute of Technology, Nagpur	India
12:15-12:30	46	Slip Detection for Planetary Rover using Naive Bayes Machine Learning Classifier	Kartik Sah, Shamrao G, Shankara A and Keshava Murthy K A	UR Rao Satellite Centre	India
Session 2C: Assitive Devices 1 Chair: Prof. S. Srinivasan Co-chair: Prof. M. Varma					
Invited Talk: Robotics to Restore and Retrain Human Movements by Prof Sunil K Agarwal					
11:30-11:45	86	Development of a Powered Assistive Device for Patients with Lower Limb Muscle Weakness	Shishir Shah and Abhishek Gupta	IIT Bombay	India
11:45-12:00	123	Soft Hand Exoskeleton for Adaptive Grasping using a Novel Differential Mechanism	Ajay Bajaj, Vishal Jain, Prabhat Kumar, Anupam Saxena and Aynur Unal	IIT Kanpur	India
12:00-12:15	128	A New Sitting-type Lower-Limb Rehabilitation Robot based on a Spatial Parallel Kinematic Machine	Jayant Kumar Mohanta, Santhakumar Mohan, Phillipe Wenger and Christine Chevallereau	Indian Institute of Technology Indore	India
12:15-12:30	131	Design of single degree-of-freedom mechanisms for hand neurorehabilitation	Aravind Nehrujee, Sandeep Guguloth, Reetha Janetsurekha, Selvaraj Samuelkamaleshkumar, Sujatha Srinivasan and Sivakumar Balasubramanian	Christian Medical College, Vellore; Indian Institute of Technology Madras, Chennai	India
Session 3 (Flash Talks) Chair: Prof. A. Ghosal					
12:35-12:40	11	Cable Driven Parallel Robot with Big Interference-Free Workspace	Vincentius Adiyanto Handoyo, Adlina Taufik Syamlan, Latifah Nurahmi, Bambang Pramujati, Mohamad Nasyir Tamara and Unggul Wasiwitono	Institut Teknologi Sepuluh Nopember	Indonesia
12:40-12:45	12	Stiffness distribution of 3-RPS parallel manipulator based on the base-and-platform configuration	Rath Kautsar, Latifah Nurahmi, Aida Annisa and Ranjan Jha	Institut Teknologi Sepuluh Nopember	Indonesia
12:45-12:50	80	Fabrication of micro compliant mechanisms using micro-stereo lithography	Ratnesh Bafna, Abhijit Tanksale and Prasanna Gandhi	IIT Bombay	India
12:50-12:55	23	New design of precise petal-type deployable space antenna	Victor Bujakas	The P.N. Lebedev Physical Institute, of Russian Academy of Science	Russia

Session 5A: Robotics 2 Chair: Prof. S. Bandyopadhyay Co-chair: Prof. V. Sahoo					
15:30-15:45	13	A geometric method for non-singular path-planning in the constant-orientation workspace of a Stewart platform manipulator	Prem Kumar Prasad and Sandipan Bandyopadhyay	Indian Institute of Technology Madras	India
15:45:16:00	47	Forward Kinematics of Cable-driven Continuum Robot Using Optimization Method	Ashwin K P and Ashitava Ghosal	Indian Institute of Science	India
16:00-16:15	7	Multi Operation Modes of 4-CRU Parallel Mechanism for 3D-Printing Building	Pradiktio Putrayudanto, Latifah Nurahmi and Guowu Wei	Institut Teknologi Sepuluh Nopember	Indonesia
16:15-16:30	55	Design, Development and Testing of an Ornithopter	Mihir Mogra, Ninad Sayare and Gaurav Puppala	College of Engineering, Pune	India
16:30-16:45	27	A Modular End Effector for Sample Collection from Extraterrestrial Terrain	Rippudaman Singh, Abhinandan Kapoor, Gaurav Sharma, Abhishek Kumar, A. Shankara and Keshavamurthy K.A	VIT	India
16:45-17:00	49	An Efficient Methodology to Determine the Usability of Exoskeleton to Control a Serial Manipulator	Arun K, Abijith P Nair, Venkatesh K, Srinivas Patnaik and Rajeevlochana Chittawadigi	Amrita School of Engineering Bangalore	India
17:00-17:15	45	Vision based grasp planning based on grasp quality metrics and its hardware implementation	Roshan Kumar Hota, Aditya Negi and C. S. Kumar	IIT Kharagpur	India
17:15-17:30	75	Quasi-Static Analysis of Tendon Driven Large Deformable 2D Multi-Segment Continuum Robot	Sabari Nathan, Satyaki Bhattacharjee and Subhasis Bhaumik	Indian Institute of Engineering Science and Technology	India
Session 5B: Gearing and Transmissions Chair: Prof. T. Zielinska Co-chair: Prof. K. Ramakrishna					
15:30-15:45	5	Load Sharing and Stress Analysis of Harmonic Drive with the Novel Split Cam SWG	Vineet Sahoo, Bhabani Sankar Mahanto and Rathindranath Maiti	NIT Andhra Pradesh	India
15:45:16:00	14	A review on dynamic balancing and link shape synthesis of planar mechanisms	Sajjan Bajija, Kailash Chaudhary and Himanshu Chaudhary	MBM Jodhpur	India
16:00-16:15	16	Canonical Decomposition of the Instantaneous Kinematics of Darboux Frame	Rama Krishna K	Indian Institute of Technology Delhi	India
12:00-12:15	78	Investigation on hydrodynamic characteristics of textured meso scale gas bearing	Nilesh Hingawe and Skylab Bhore	Motilal Nehru National Institute of Technology, Allahabad	India
16:30-16:45	31	Contact Analysis of a Gear Pair Using Linear Complementarity	Mangesh Pathak, Sourav Rakshit and Manish Gautam	Motilal Nehru National Institute of Technology, Allahabad	India
16:45-17:00	43	Enumeration of Displacement Graphs of Epicyclic Gear Trains for a given Rotation Graph Using an Algorithm Involving Building of Kinematic Units	Shanmukhasundaram V R, Daseswara Rao Yendluri and Srinivasa Prakash Regalla	BITS Pilani	India
17:00-17:15	129	Initial Tooth Contacts and Stresses in Flex-gear Cup on Assembling the Conventional Involute Toothed Gear Set and Cam in Harmonic Drive	Vineet Sahoo and Rathindranath Maiti	NIT Jamshedpur, IIT Kharagpur	India
17:15- 17:30	135	Innovative low cost stair climbing mechanism	Girish S. Modak	Pune Vidhyarthi Griha's College of Engineering and Technology	India
Session 5C: Mechanisms Chair: Prof. A. Saxena Co-chair: Prof. R. Rzedkowski					
15:30-15:45	40	Textile DOBBY Mechanism synthesized as a Mechanical D Flip-Flop	Chitta Amarnath and Ankit Mehta	IIT Dharwad and Cummins College of Engineering, Pune	India
15:45:16:00	41	Design of Oblique Leaf-spring Suspension Mechanism for Heavy Vehicles	Jingshan Zhao, Hongwei Song and Zhang Yun	Tsinghua University	China

16:00-16:15	33	A Model-View-Controller based Software Approach for the Interactive Design of Planar Mechanisms	Burkhard Corves, Mathias Huesing and Mario Müller	IGMR, RWTH Aachen University	Germany
16:15-16:30	18	MechAnalyzer: Software to Teach Kinematics Concepts Related to Cams, Gears and Instantaneous Center	Dikshithaa R, Siddhant Jain, Janani Swaminathan, Rajeevlochana Chittawadigi and Subir Saha	Amrita School of Engineering Bangalore	India
16:30-16:45	81	Analytical relations for the cross-coupling in a serial-kinematic positioning stage	Tim Joseph and V. Kartik	IIT Bombay	India
16:45-17:00	60	Development and Demonstration of a Wheat Harvester for Small Farms of India	Harsh Modi and Vineet Vashista	Indian Institute of Technology Gandhinagar	India
17:00-17:15	88	Effect of Operating Conditions and Geometric Parameters on Coupled Wing-Fuselage model of UAV of High Aspect Ratio Wing	Sumit Agrawal and V. Kartik	IIT Bombay	India
17:15-17:30	25	Hold Down and Steering Mechanism for Lunar Terrain Spectroscopy	Kartik Sah, Abhinandan Kapoor, Gaurav Sharma, Abhishek Kumar, A. Shankara and Keshavamurthy K.A	Indian Space Research Organisation	India
December 19 2018					
Session 8A: Assistive Devices 2 Chair: Prof. S. Agrawal Co-chair: Prof. S. Mohan					
Invited Talk by Prof Sujatha					
11:30-11:45	38	Synthesis and analysis of Jansen's leg based mechanism for gait rehabilitation	Mohan Varma D. S.	VIT University	India
11:45-12:00	106	Modelling and Design of a Multi Finger Exoskeleton for Post Stroke Rehabilitation of Hand Motion	Devendra Ghodki, Cs Kumar, Manjunatha Mahadevappa and Abhishek Sharma	Indian Institute of Technology Kharagpur	India
12:00-12:15	132	A Review on Working Principles of Various Ankle Foot Orthoses (AFO) Used to Treat Drop Foot Disease	Prashanth R Kubasad, Somasekhara Rao Todeti and Yogeesh D Kamat	National Institute of Technology Karnataka, Surathkal	India
12:15-12:30	133	Kinematic and Dynamic Analyses of Lower Body Exoskeleton Mechanism Using Adams	Shubham Kawale and M Sreekumar	Iitdm Kancheepuram Chennai	India
Session 8B: Walking Robots Chair: Prof. A. Mallik Co-chair: Prof. L. Nurahmi					
Invited Talk: Stable gait generation and analysis for bipedal robot locomotion by Dr A P Sudheer					
11:30-11:45	20	Modelling the effects of linear and torsional spring based	Rajbeer Singh Anand, Neeta Kanekar and Anirban Guha	IIT Bombay	India
11:45-12:00	30	Kinematic Modelling of Walking Mechanism	Dishant Kavathia and Jatin Dave	Nirma University	India
12:00-12:15	72	A Neurodynamic Approach to Stabilization of a 10 DOF Biped Mechanism Using Reinforcement Learning	Aditya Kameswara Rao Nandula, Sudhir Raj, A. K. Deb and C. S. Kumar	Indian Institute of Technology Kharagpur	India
12:15-12:30	102	Dynamic Modelling of a Passive Flexible Link Biped for a Symmetric Periodic Gait	Saptarshi Jana and Abhishek Gupta	Indian Institute of Technology Bombay	India
Session 8C: Modelling and Simulation Chair: Prof. M. Ceccarelli Co-chair: Prof. S. Rakshit					
Invited Talk: Operation Mode Analysis of 4-CRU Parallel Mechanism for 3D Printing Building Based on Algebraic Geometry by Prof Latifah					
11:30-11:45	124	Angle-Bound Smoothing with Applications in Kinematics	Josep M Porta, Soheil Sarabandi and Federico Thomas	Universitat Politècnica de Catalunya	Spain
11:45-12:00	42	A simple two-state hysteresis model for frictional bolted lap joints	Saurabh Biswas and Anindya Chatterjee	IIT Kanpur	India
17:00-17:15	74	Human centric optimal design of biomimetic exosuit for loaded walking: A simulation study	Karthick Ganesan and Abhishek Gupta	Indian Institute of Technology Bombay	India
12:15-12:30	57	A Numerical Algorithm to Reconstruct the Missing Points from the Membrane Wings of a Bat via the Computerized Motion Capture System	Sudeep Kumar Singh and Jing-Shan Zhao	Tsinghua University	China

Session 9 (Flash Talks) Chair: Prof. Sudheer A. P.					
12:35-12:40	92	Comparative Analysis of the Speed Coupling and Torque Coupling Hybrid Modes of a Parallel Hybrid Electric Mini Truck	Parth Joshi and V. Kartik	IIT Bombay	India
12:40-12:45	97	Dimensional synthesis of Delta manipulator using Genetic Algorithm based multi-objective optimisation	Anil Patidar, Sasanka S Sinha and Sudipto Mukherjee	Indian Institute of Technology Delhi	India
12:45-12:50	108	Modelling and Analysis of 3-PSS Parallel Kinematic Mechanism	Mervin Joe Thomas, Sudheer A P, Joy M L and Gaurav Mallick	National Institute of Technology Calicut	India
12:50-12:55	127	Dynamics of Mistuned Bladed Discs on Shaft: A Numerical and Experimental Analysis	Romuald Rzadkowski, Leszek Kubitz, Michal Maziarz, Pawel Troka and Ryszard Szczepanik	Institute of Fluid Flow Machinery, Polish Academy of Sciences, Gdansk	Poland
Session 11A: Robotics 3 Chair: Prof. B. Corves Co-chair: Prof. V. Vikas					
15:30-15:45	8	Manipulator design for a haptic system with improved performance	Mehmet Veysel Sekendiz, Ibrahimcan Gorgulu, Mehmet Gorkem Karabulut, Gokhan Kiper and Mehmet Ismet Can Dede	Izmir Institute of Technology	Turkey
15:45:16:00	34	Design issues for a flying-walking robot	Marco Ceccarelli, Daniele Cafolla, Matteo Russo and Giuseppe Carbone	University of Cassino	Italy
16:00-16:15	35	Indoor Robot Navigation and Mapping using Sensory Fusion	Teresa Zielinska and Giorgio Ballestin	Warsaw Univ. of Technology	Poland
16:15-16:30	120	Under Actuated control of Serial Manipulator	Aditya Jain, Rajesh Kumar, Indra Narayan Kar and Subir Kumar Saha	Indian Institute of Technology Delhi	India
16:30-16:45	22	Parameter Estimation & Calibration of Parallel Mechanism based Robots	Tanvi Verma, Gaurav Bhutani, T A Dwarakanath and Dinesh Biswas	Indira Gandhi Delhi Technical University for Women, New Delhi	India
16:45-17:00	10	A Continuously Variable Transmission System Designed for Human-Robot Interfaces	Emir Mobedi and Mehmet Ismet Can Dede	Izmir Institute of Technology	Turkey
Session 11B: Compliant Mechanisms Chair: Prof. A. Midha Co-chair: Prof. N. Wang					
15:30-15:45	119	Nonlinear behavior of planar compliant tensegrity mechanism with variable free-lengths	Vishesh Vikas, Miranda Tanouye and Tyler Rhodes	University of Alabama	United States
15:45:16:00	94	A passive universal grasping mechanism based on an everting shell	Mytra V. S. Balakuntala, Safvan Palathingal and G. K. Ananthasuresh	Indian Institute of Science, Bengaluru	India
16:00-16:15	115	Multi-patch isogeometric analysis of planar compliant mechanisms	Sagar Bodkhe and G.K. Ananthasuresh	Indian Institute of Science, Bengaluru	India
16:15-16:30	111	A Mechanical OR Gate using Pinned-pinned Bistable Arches	Deepayan Banik, Safvan Palathingal, Gondi Kondaiah Ananthasuresh and Amitabha Ghosh	Indian Institute of Engineering Science and Technology, Shibpur	India
16:30-16:45	117	Design and development of a contact-aided compliant flapping wing for micro-air vehicle	Masruddin Shaik, Raunak Singh Rana, Deepak Kumar Patel and Narayana Reddy Annem	IIT-Guwahati	India
16:45-17:00	122	Ranking multiple static balancing solutions on the basis of friction overcoming effort	Sunil Kumar Singh and Sangamesh R. Deepak	IIT-Dharwad	India
17:00-17:15	66	Design of Passive Compliant Constant-Force Mechanism	Nianfeng Wang, Jianliang Zhang and Xianmin Zhang	Guangdong Key Laboratory of Precision Equipment and Manufacturing Technology	China
Session 11C: Dynamics Chair: Prof. A. Ghosh Co-chair: Prof. Zhanh Yun					
15:30-15:45	37	The Kinematics and Dynamics of Engine Start Systems	Madhu Raghavan, Norman Bucknor and Vatche Donikian	General Motors R&D	United States
15:45:16:00	77	Damping of Wind Induced Galloping Oscillations of Solar Trackers	Ninad Watwe and Kartik V	Mahindra Susten	India

16:00-16:15	91	Simulation of Small Rigid Particle Transportation due to Inclined Linear Vibratory Conveyor	Pranav Lad and V. Kartik	Indian Institute of Technology Bombay	India
16:15-16:30	114	Optimization of Parameters of Tuned Viscous Dampers for Broadband Vibration Attenuation	Sanjay Gupta, A S Kiran Kumar and Kartik V	Space Applications Center	India
16:30-16:45	64	Forward dynamics of the double-wishbone suspension mechanism using the embedded Lagrangian formulation	Vyankatesh Ashtekar and Sandipan Bandyopadhyay	Indian Institute of Technology Madras	India
16:45-17:00	17	Multibody modelling of direct and cross-axis seat to head transmissibility of the seated human body supported with backrest and exposed to vertical vibrations	Raj Desai, Anirban Guha and Seshu Pasumarthy	IIT Bombay	India
17:00-17:15	95	Influence of Electromagnetic Railgun Parameters on the Dynamic Response of Rail	Krishna Prasad, Venkatraman Kartik and Kusumkant Dhote	IIT Bombay	India