

NaCoMM 2011 Program at a glance

30-Nov-11

8.00-9.00	9.00-10.00	10.00-10.30	10.30-12.00	12.00-12.15	12.15-13.00	13.00-14.00	14.00-15.30	15.30-16.00	16.00-17.30	18.15-20.15
Registration	Inauguration	Tea	Workshop Session-1	Break	Workshop Session-2	Lunch	Workshop Session-3	Tea	Workshop Session-4	Cultural event

01-Dec-11

09.00 -09.45	Keynote 1	
09.45 -10.00	Tea Break	
10.00 -11.30	A-1 Mechanisms 1	B-1 Machine Elements 1
11.30 -11.45	Group Photograph	
11.45 -13.00	A-2 Mechanisms 2	B-2 Parallel Manipulators 1
13.00 -14.00	Lunch	
14.00 -14.45	Keynote 2	
14.45 -16.00	A-3 Dynamics and Control	B-3 Design of Machines 1
16.00 -16.15	Tea Break	
16.15 -16.30	Tech Talk : B&R Automation	
16.30 -18.00	A-4 Compliant Mechanisms	B-4 Robotics 1
19.30 -22.00	Tech Talk : Autodesk Banquet Dinner	

02-Dec-11

09.00 -09.45	Keynote 3	
09.45 -10.00	Tea Break	
10.00 -11.30	SMDC* Demo	
11.30 -11.45	Break	
11.45 -13.00	Poster Session	
13.00 -14.00	Lunch	
14.00-15.30	A-5 Machine Elements 2	B-5 Robotics 2
15.30-15.45	Tea Break	
15.45-16.45	A-6 Design of Machines 2	B-6 Parallel Manipulators 2
16.45-17.15	Valedictory	
17.30-18.30	AMM GBM	

A,B: session codes

*Students Mechanism Design Contest

Venue for events

Registration	Reception Desk, IC&SR Building
Workshop	Auditorium, IC &SR Building
Session A	Auditorium, IC&SR Building
Session B	Hall 3, IC&SR Building
Poster	Ground Floor Lobby, IC&SR Building
SMDC Demo	Hall 2 & Ground Floor Lobby, IC&SR Building
AMM GBM	Auditorium, IC&SR Building
Lunch	AC Dining Hall, IC&SR Building
Cultural Event	Central Lecture Theatre (CLT)
Banquet Dinner	Asiana Hotel, Semmenchery, Chennai
Tech Talk	B&R Automation – IC&SR Auditorium Autodesk –Asiana Hotel

Program Schedule

Nov 30, 2011

Registration	08.00-09.00
Venue: Reception Desk, IC&SR Building	
Inauguration	09.00-10.00
Venue: IC&SR Auditorium	
Tea Break	10.00-10.30
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Kinematics Workshop	Univ.-Prof. Dr. Manfred L. Husty
	Professor of Geometry and CAD
	University of Innsbruck, Austria
Topics to be addressed:	
1. Basics from Algebraic Geometry and Kinematics: ideals, affine and projective varieties, standard bases (e.g. Groebner), elimination, dimension and primary decomposition, and, forward and inverse kinematics of serial and parallel robots using the algebraic approach, singularities.	
2. Applications to special robots: Analysis of 3-UPU (SNU and TSAI) manipulators, inverse kinematics of general 6R-serial robots and over-constrained 6R linkages.	
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Workshop Session-1	10.30-12.00
Venue: IC&SR Auditorium	
Break	12.00-12.15
Workshop Session-2	12.15-13.00
Venue: IC&SR Auditorium	
Lunch	13.00-14.00
Venue: AC Dining Hall, IC&SR Building	
Workshop Session-3	14.00-15.30
Venue: IC&SR Auditorium	
Tea Break	15.30-16.00
Workshop Session-4	16.00-17.30
Venue: IC&SR Auditorium	
Cultural Event	18.15-20.15
Venue: Central Lecture Theatre	
Carnatic Guitar Recital: Vanipriya J, V.S. Raghavan and Sunil Kumar	
Kucipudi Dance Recital: Kalpana Jayanti and group	

Program Schedule

Dec 01, 2011

Keynote 1

09.00-09.45

Venue: IC&SR Auditorium

B. M. Belgaumkar Memorial Lecture

An Object-oriented Framework for SE(3) Motion Planning in Multibody Systems

Professor Dr.-Ing. Andrés Kecskeméthy

Chair of Mechanics and Robotics
University of Duisburg-Essen, Germany

Tea Break

9.45-10.00

A-1: Mechanisms 1

10.00 -11.30

Chair : Marco Ceccarelli

Venue: IC&SR Auditorium

10.00-10.15	General Method of Optimization Kinematic Synthesis of Planar Lever Mechanisms Based on its Structural Properties by Example of the Eight-Link Mechanism <i>Nickolay N. Krokmal and Oleg N. Krokmal</i>
10.15-10.30	Evaluation of the Polycentric Above Knee Prosthesis <i>S.S. Chauhan and S.C. Bhaduri</i>
10.30-10.45	An Optimization Approach for Path Synthesis of Four-bar Grashof Mechanisms <i>Ahmed Saeed Mohsen Alhazz and Jonnalagadda Srinivas</i>
10.45-11.00	Link Geometry Synthesis for Prescribed Inertia <i>Yoganand Garimella and Dibakar Sen</i>
11.00-11.15	Design Optimization of Toggle Mechanism by Mathematical Model <i>Narendra Arun Akhadkar</i>
11.15-11.30	A Reliability Based Robust Multi-objective Optimal Synthesis of Linkage Mechanisms Considering Tolerances <i>P. V. Chowdary, Gurunathan Saravana Kumar, and Palaniappan Ramu</i>

Program Schedule

Dec 01, 2011

B-1: Machine Elements 1		10.00 -11.30
Chair : N. Siva Prasad		Venue: Hall 3, IC&SR Building
10.00-10.15	On the Anti-Loosening Characteristics of M16 Threaded Fasteners under Vibratory Conditions <i>Bikash Panja and Santanu Das</i>	
10.15-10.30	Application of Neural Network in Condition Monitoring of Ball Bearings <i>Atul Andhare, Tejas Lakhe, Tejas Umbarkar, and Vishal Vadabhat</i>	
10.30-10.45	Experimental Study on Micro-Textured Thrust Pad Bearing <i>Ismail Syed, Veeraraju Vanapalli, and Mihir Sarangi</i>	
10.45-11.00	Natural Frequencies of Bending and Torsion Stiff Composite Conical Shells with Delamination <i>Sudip Dey and Amit Karmakar</i>	
11.00-11.15	Vibration based Fatigue Damage Assessment of Cantilever Beams <i>A. S. Sekhar and Harish Chandra</i>	
11.15-11.30	Identification of Unbalance and Looseness in Rotor Bearing Systems using Neural Networks <i>Mudireddy Chandra Sekhar Reddy and A.S. Sekhar</i>	
Group Photograph		11.30-11.45
A-2: Mechanisms 2		11.45 -13.00
Chair : Andrés Kecskeméthy		Venue: IC&SR Auditorium
11.45-12.00	A Nonlinear Elastic Transmission for Variable-Stiffness-Actuation: Objective and Design <i>Soumen Sen and Antonio Bicchi</i>	
12.00-12.15	Analysis of Positional Error due to Joint Clearances in Four Bar Mechanism <i>Hemant Jawale and H Thorat</i>	
12.15-12.30	Curvature Based Mobility Analysis and Form Closure of Smooth Planar Curves with Multiple Contacts <i>Rama Krishna K and Dibakar Sen</i>	
12.30-12.45	A Framework for Analysis and Dynamic Visualisation of Mechanisms <i>Arjun Nagarajan and Sandipan Bandyopadhyay</i>	
12.45-13.00	A History of TMM in Italy <i>Marco Ceccarelli</i>	

Program Schedule

Dec 01, 2011

B-2: Parallel Manipulators 1		11.45 -13.00
Chair : Manfred L. Husty		Venue: Hall 3, IC&SR Building
11.45-12.00	Novel Design Solution to High Precision 3 axes Translational Parallel Mechanism <i>T A Dwarkanath and Gaurav Bhutani</i>	
12.00-12.15	Kinematic Analysis of a 3-UPU Parallel Manipulator Using Exponential Rotation Matrices <i>Gokhan Kiper and Eres Söylemez</i>	
12.15-12.30	Singularity Analysis of Closed-loop Mechanisms and Parallel Manipulator <i>Vinu K. S and Ashitava Ghosal</i>	
12.30-12.45	Forward and Inverse Kinematics of a Hybrid Series-parallel Manipulator <i>Sachit Rao and Jagannath Raju</i>	
12.45-13.00	A Complete Kinematic Analysis of the 3-RPS Parallel Manipulator <i>Josef Schadlbauer, Manfred Husty, and Dominic R. Walter</i>	
Lunch		13.00-14.00
		Venue: AC Dining Hall, IC&SR Building
Keynote 2		14.00-14.45
		Venue: IC&SR Auditorium

K. Lakshminarayana Memorial Lecture

From Equations to Embodiments -3 Case Studies

Professor Ashitava Ghosal

Department of Mechanical Engineering & CPDM
Indian Institute of Science, Bangalore, India

Program Schedule

Dec 01, 2011

A-3: Dynamics and Control		14.45 -15.45
Chair : P.M.Pathak		Venue: IC&SR Auditorium
14.45-15.00	Deployment Dynamics and Latch-Up Shock Estimation of Large Antenna Hold Down Mechanism <i>Lakshmi Narayana Burra, B.P. Nagaraj, G.Nagesh, and C.D. Sridhara</i>	
15.00-15.15	Control and Stability Analysis of a Walking Knee-less Biped with Torso <i>Abdul Jaleel, Tripuraneni Varun, and Arun D. Mahindrakar</i>	
15.15-15.30	Symbolic Computation and Simulation of a Spatial Pendulum <i>Vinay Gupta and Subir K. Saha</i>	
15.30-15.45	Design and Development of Novel Two Axis Servo Control Mechanism <i>Chinmay Dharmadhikary, Mrinmay Atre, Aniruddha Katti, Shubham Shambharkar, and Shailaja Kurode</i>	
B-3: Design of Machines 1		14.45 -16.00
Chair : Dibakar Sen		Venue: Hall 3, IC&SR Building
14.45-15.00	Design of Bed for Bedridden Patients: Analysis and Synthesis of Mechanisms <i>Atul Andhare, Anil Onkar, and Pramod Padole</i>	
15.00-15.15	Development of Post Harvest Food Processing machine <i>Kazi Syed Zakiuddin and J.P. Modak</i>	
15.15-15.30	User Centric Designed Mechanism for Stairs-Climbing Wheelchair (Manual) <i>Shanu Sharma, Shatrupa Thakurta Roy, and J Ramkumar</i>	
15.30-15.45	Investigation of Autonomous Oscillating Linkages <i>Willi Rehwald and Kurt Luck</i>	
15.45-16.00	Adjustable Hand-cranked Tricycle for Mobility Disabled <i>Aditya Soni, Ramanathan Muthuganapathy, and Sandipan Bandyopadhyay</i>	
Tea Break		16.00-16.15
Tech Talk : B&R Automation		16.15-16.30
		Venue: IC&SR Auditorium

Program Schedule

Dec 01, 2011

A-4: Compliant Mechanisms		16.30 -18.00
Chair : Prasanna Gandhi		Venue: IC&SR Auditorium
16.30-16.45	An SMA-actuated, Compact, Compliant Ring-actuator with Uniform Deformation <i>Puneet Singh and G.K. Ananthasuresh</i>	
16.45-17.00	A Compliant End-effector to Limit the Force in Tele-operated Tissue-cutting <i>Santosh D. B. Bhargav, Shanthanu Chakravarthy, and G. K. Ananthasuresh</i>	
17.00-17.15	An Online Interactive Computer Program for Pragmatic Design of Compliant Mechanisms <i>Ranu Kundu, C. V. Aravind, Sudarshan Hegde, and G. K. Ananthasuresh</i>	
17.15-17.30	Design of Force-amplifying Compliant Mechanism for Resonant Accelerometers <i>Shyamsananth Madhavan, and G. K. Ananthasuresh</i>	
17.30-17.45	Development of a Meso-scale Dual-axis Steel Accelerometer with Hall-effect Sensors <i>Sambuddha Khan, P. Muddukrishna, and G. K. Ananthasuresh</i>	
17.45-18.00	Development of Double Parallelogram Flexure Mechanism via Assembly Route <i>Prasanna Gandhi, Vaibhav Soni, and Kaustubh Sonawale</i>	
B-4: Robotics 1		16.30 -18.00
Chair : Asokan Thondiyath		Venue: Hall 3, IC&SR Building
16.30-16.45	Performance Evaluation of Wheeled Rover by Analysis and Test <i>Gaurav Sharma, Srividhya.G, Shamrao , K. Balaji, G. Nagseh, and C.D. Sridhara</i>	
16.45-17.00	Neural Network-based Coordinated Motion Planning of Multiple Mobile Robots <i>Nirmal Hui</i>	
17.00-17.15	Dynamically Stable Gait Planning of a Three-Legged Vertical Surface Climbing Robot <i>Tarun K. Hazra and Nirmal Hui</i>	
17.15-17.30	Trajectory Planning of Dual Arm Free Flying Space Robot using Polynomial Approach <i>Rishikesh Rathi and P. M. Pathak</i>	
17.30-17.45	A Unique Path Tracking Method of a Rectangular Robot <i>Dilip Kumar Biswas, Subhasish Bhaumik, and Jyotirmoy Saha</i>	
17.45-18.00	Boombot: Low Friction Coefficient Stair Climbing Robot Using Rotating Boom and Weight Redistribution <i>Sartaj Singh and Ramachandra K.</i>	
Tech Talk by Autodesk Banquet Dinner		Venue: Asiana Hotel, 19.30-22.00

Program Schedule

Dec 02, 2011

Keynote 3

09.00-09.45

Venue: IC&SR Auditorium

Workspace Evaluation for Analysis and Synthesis of Manipulators

Professor Marco Ceccarelli

President, IFToMM

LARM: Laboratory of Robotics and Mechatronics, DiMSAT,

University of Cassino, Via Di Biasio, Cassino (Fr), Italy,

Tea Break

09.45-10.00

Students Mechanism Design Contest

10.00-11.30

Venue: Hall 2 and Ground Floor Lobby, IC&SR Building

Tea Break

11.30-11.45

Poster Session

11.45-13.00

Venue: Ground Floor Lobby, IC&SR Building

Lunch

13.00-14.00

Venue: AC Dining Hall, IC&SR Building

Program Schedule

Dec 02, 2011

A-5: Machine Elements 2		14.00 -15.30
Chair : S. Senthilvelan		Venue: IC&SR Auditorium
14.00-14.15	Stability Analysis of a Spinning and Processing Viscoelastic Rotor Model Under the Effect of Tensile Centrifugal Force <i>S Bose, A Nandi, and S Neogy</i>	
14.15-14.30	Design of a Flexural Joint using Finite Element Method <i>Abdullah Aamir Hayat, Adnan Akhlaq, and M. Naushad Alam</i>	
14.30-14.45	Prediction of Theoretical Wear in High Contact Ratio Spur Gear Drive <i>Rama Thirumurugan and G. Muthuveerappan</i>	
14.45-15.00	Stability Analysis of Rotors Using Three-dimensional Finite Elements and HRZ Mass Lumping Scheme <i>Smitadhi Ganguly, Arghya Nandi, and Sumanta Neogy</i>	
15.00-15.15	Frictional Dissipation at a Small Crack Under Multiaxial Periodic Stresses <i>Prasun Jana and Anindya Chatterjee</i>	
15.15-15.30	Dedundum Optimization of Asymmetric Spur Gear <i>Prateek Kumar, Saroj Mandal and Senthilvelan Selvaraj</i>	
B-5: Robotics 2		14.00 -15.30
Chair : T.A. Dwarakanath		Venue: Hall 3, IC&SR Building
14.00-14.15	Recursive Robot Dynamics in RoboAnalyzer <i>C.G. Rajeevlochana, Amit Jain, Suril V. Shah, and Subir K. Saha</i>	
14.15-14.30	Modeling and Analysis of Three Degree of Freedom Micropositioning Stage <i>Jonnalagadda Srinivas and Uppada Sudhakar</i>	
14.30-14.45	Biomimetic Design and Development of a Prosthetic Hand: Prototype 1.0 <i>Nayan M. Kakoty and Shyamanta M. Hazarika</i>	
14.45-15.00	Shape Optimization of Revolute Single Link Flexible Robotic Manipulator for Vibration Suppression <i>Sachindra Mahto</i>	
15.00-15.15	Design and Evaluation of Handover Movement Informing Receiver of Weight Load <i>Takafumi Matsumaru</i>	
15.15-15.30	An Improved Dynamic Modeling of a 3-RPS Parallel Manipulator Using the Concept of DeNOC Matrices <i>Elahe Yoosefi and Ali Rahmani Hanzaki</i>	
Tea Break		15.30-15.45

Program Schedule

Dec 02, 2011

A-6: Design of Machines 2

15.45 -16.45

Chair : Subir Kumar Saha

Venue: IC&SR Auditorium

15.45-16.00	Development and Performance Evaluation of a Light Weight Power Tiller <i>Subrata Kr Mandal and Atanu Maity</i>
16.00-16.15	Design of Multiside Tipper Tilting Mechanism <i>Hemant Gaikwad and Nilesh Awate</i>
16.15-16.30	Kinematic Analysis of Link System used in Collapsible type In-vessel Handling Machine <i>Sanjeev Kumar, Jose Varghese, R Vijayashree, S Raghupathy, P Chellapandi, and S C Chetal</i>
16.30-16.45	Innovative Application of Kinetics for Low-Cost Vehicle Speed Control System using Linear Cable and Open-Coil spring <i>Keerthivasan R.</i>

B-6: Parallel Manipulators 2

15.45 -16.45

Chair : Ashitava Ghosal

Venue: Hall 3, IC&SR Building

15.45-16.00	Task Space Trajectory Planning Among Cooperating Robots through Mirror Motions <i>T A Dwarakanath, Gaurav Bhutani, and Puneet Srivastava</i>
16.00-16.15	Test Results with a Binary Actuated Parallel Manipulator <i>Tao Li, Hao Gu, Conghui Liang, Giuseppe Carbone, Marco Ceccarelli, Christian Löchte, and Annika Raatz</i>
16.15-16.30	Dual-loop Control for Backlash Correction in Trajectory Tracking of a Planar 3-RRR Manipulator <i>Abhishek Agarwal, Chaman Nasa, and Sandipan Bandyopadhyay</i>
16.30-16.45	Trajectory-tracking Control of Semi-regular Stewart Platform Manipulator <i>Sadiq Mohamed and Sandipan Bandyopadhyay</i>

Valedictory

16.45-17.15

Venue : IC&SR Auditorium

AMM GBM

17.30-18.30

Venue: IC&SR Auditorium