

Author Program Mechatronics 2010 ETH Zurich 28. June - 30. June			
MONDAY, 28. June 2010			
Day 1			
08.00 - 08.30	Coffee, Registration		
08.30 - 09.00	Welcome Prof. K. Wegener / Prof. H. Wild / Prof. P. Moore Auditorium HG E 3		
09.00 - 10.00	Opening Lecture / Prof. K. Warwick / Cyborg Experiments Auditorium HG E 3		
10.00 - 11.00	Coffee Break		
11.00 - 11.30	Bio-, Medical-Mechatronics I Session Chair Dr. Deasún Ó Conchúir Room HG E 23	Robotic and Autonomous Vehicles I Session Chair Prof. Kevin Warwick Room HG E 22	Machine Tools, Manufacturing Processes, Precision Machining and Machinery I Session Chair Prof. David Russel Room HG E 21
11.30 - 13.10	Relationship Between Extension and Pressure in Compression Bandages Used in Leg Ulcers For the Control of Interface Pressure <i>Jawad Al Khaburi, Abbas A. Dehghani-Sanij, E Andrea Nelson, and Jerry Hutchinson</i>	Service Modules for Hospital Robots <i>Tamas Szecsi, A.S.M. Majahidul Haque, Kabir Al Mamun, Muhammad K. Hasan and Md. Anwarul Islam</i>	Micro(Electro Discharge Machining Process Optimization by Integration of Measurement, Actuation and Flushing <i>Andreas Schubert and Henning Zeidler</i>
	Comparison Between Sub-Bandage Interface Computed and Measured Pressures When Bandages are Applied to a Mannequin Leg <i>Jawad Al Khaburi, Abbas A. Dehghani-Sanij, E Andrea Nelson, and Jerry Hutchinson</i>	Feasibility Study on a Collaborative Robot with Omni-wheels <i>Z. M. Bi, Lihui Wang</i>	Iterative Learning Control of the Electro-Discharge Machining Process <i>Ivan Furlan and Silvano Balemi</i>
	Development of Flexible Contact Sensor Array for Contact Force Identification during Colonoscopy <i>Debao Zhou, Peter Walls, Gordon Kuhnley, Alex Houck, Aaron Statko and Richard Lindeke</i>	A Feasibility Study of Using Piezoelectric Actuators in Control of UAVs <i>Ilhan Tuzcu, Tuan D. A. Le, and Jose J. Granda</i>	Mechatronic Models for Evaluation of Reconfigurable Machine Tool Designs <i>Thomas Lorenzer, Sascha Weikert, and Konrad Wegener</i>
	Automated Cystoscopic Surveillance System with Automated Endoscopic Image Mosaicing <i>W. Jong Yoon, Matthew A. Brown, and Eric J. Seibel</i>	Autonomous Trajectory Planning for a Two-Link Robotic Arm using a Monocular Eye-in-Hand Webcam <i>Sallehuddin M. Haris, Shahed Shojaeipour, Muhammad K. Zakaria and Yusoff Ali</i>	A Novel Device for Meter Disk Diagnostics <i>M. Karkoub, M-G. Her and J-C. Huang</i>
13.10 - 14.15	Lunch		
14.15 - 15.15	Keynote Lecture 1 / Prof. R. Siegwart / Design and Navigation of Wheeled, Walking, Flying and Swimming Robots Auditorium HG E 3		
15.15 - 16.30	Mechatronic Education I Session Chair Dr. Sascha Weikert Room HG E 23	Novel Mechatronic Systems (sensors/actuators and embedded control) I Session Chair Prof. Konrad Wegener Room HG E 22	System Modeling: Tools, Analysis and Simulation I Session Chair Prof. Roland Kasper Room HG E 21
	Whither Mechatronics? <i>David Russell, David Bradley</i>	Novel ANN Based-Sensorless Speed Estimation of DC Motor Control (Mechatronics Approach) <i>Abdulkader Joukhadar, Ahmad Ammar Naassani</i>	Analysis of Object Grasping Using Hand Model Based on Force Vector Group in Dynamics Space <i>Hiroshi Hashimoto, Akinari Sasaki, Sho Yakata, Yasuhiro Ohyama, and Naoki Amano</i>
	Turning a concept into a marketable system <i>Roger White, David Bradley</i>	Meniscus Control and Optimization of Electrodes in Electrostatically Driven Integrated Terminal Inkjet Head <i>Ahsan Rahman, Adnan Ali, Khalid Rahman, Saleem Khan, Yang-Hoi Doh, Dong-Soo Kim and Kyung-Hyun Choi</i>	Vibration damping of belt-driven rotary platforms through motion command optimization <i>Giovanni Incerti</i>
Challenges in Mechatronics Education for Mechanical Engineering Students <i>Vincent H. Chan</i>	Improving Force Measurements in Multimodal Robotic Contour Following Tasks Using Acceleration Sensors <i>Heiko Koch, Alexander König, Alexandra Weigl-Seitz, and Karl Kleinmann</i>	Efficient and reconfigurable engine and product development with 3D parametric design <i>Gerhard Witwer, Stefan Diemedder, and Christian Rudig</i>	
16.35 - 17.05	Coffee Break		
17.05 - 18.05	Prestige Lecture / Prof. R. Isermann / Mechatronic Developments for Automobiles Auditorium HG E 3		
18.05 - 18.35			
18.35 - 19.30			
19.30 - 22.30			

Day 2				TUESDAY, 29. June 2010			
09.00 - 18.00				Visit to Pilatus for accompanying persons			
08.00 - 08.30							
08.30 - 09.00				Coffee, Registration			
09.00 - 10.00				Keynote Lecture 2 / Prof. R. Kasper / The Mechatronic Way to Mobility Auditorium HG E 3			
10.00 - 11.00	Calibration, Measurement and Inspection I Session Chair Prof. Oliver Zirn Room HG E 23		Mechatronics Education II Session Chair Prof. David Bradley Room HG E 22		System Modeling: Tools, Analysis and Simulation II Session Chair Prof. Silvano Balemi Room HG E 21		
	Application of mechatronic means for precision measurements <i>Vytautas Giniotis, Mindaugas Rybokas, and Domantas Brucas</i>		The Development of an Autonomous Mobile Robot as an Educational Tool for Mechatronics <i>Lovro Kušćer, Janez Diaci</i>		Hybrid, Approximate Models of Distributed-Parameter Systems <i>Cezary Orlikowski, Rafal Hein</i>		
	An Application of Laser Speckle Techniques to Surface Characterization Mechatronics 2010 Conference Proceedings <i>J. Lettner, B. G. Zagar</i>		Project-Oriented Learning - a Way to Competent Mechatronics Engineers <i>Peter Butala, Rok Vrabič, and Ivan Vengust</i>		Conceptual Design Tool for the development of a heating zone of an industrial Annealing Simulator <i>Martin Follmer, Peter Hehenberger, Richard Geirhofer, Michael Haslmayr, Klaus Zeman</i>		
	A Vision System for IPMC Characterization to be used for Feedback Control <i>Suhaila M. Yusuf, Abbas A. Dehghani-Sani, Robert C. Richardson</i>						
11.00 - 11.30				Coffee Break			
11.30 - 13.10	Robotic and Autonomous Vehicles II Session Chair Dr. Abbas Dehghani Room HG E 23		Automotive Applications I Session Chair Prof. Rolf Isermann Room HG E 22		Machine Tools, Manufacturing Processes, Precision Machining and Machinery II Session Chair Prof. Oliver Zirn Room HG E 21		
	Path planning and path control for a track guided autonomous electric vehicle <i>Stephan Schmidt and Roland Kasper</i>		The use of elastic polymers in a large deflection, piezo-based actuator concept for active engine mounts <i>Martin Zornemann and Roland Kasper</i>		Bilinear Model Predictive Control of Plasma Keyhole Pipe Welding Process <i>Kun Qian and YuMing Zhang</i>		
	Incorporating Deliberative and Reactive Components into the Control System of the Inspection Robots Group <i>Wawrzyniec Pan I, and Wojciech Moczulski</i>		Track estimation for multi-axle steered truck-trailer vehicles <i>Robert Huber, Jens Jäkel, Sebastian Wagner, and Stephan Zipser</i>		Reference Trajectory Generation for an Atomic Force Microscope <i>Ivan Furlan and Silvano Balemi</i>		
	Multivariable Control of Vertical Take-off and Landing Quad-thrust Aerial Robot <i>Roman Czyba, Grzegorz J. Szafranski</i>		Design of an Adaptive Road Speed Limiter <i>Ken Rotter, Sandeep Valoakaran Sebastian</i>		Ballistic performance of robotized GMA surfaced cermet Ni+WC deposits of armor units <i>Andrzej Klimpel, Krzysztof Luksa</i>		
Energetics of passivity based running with high compliance series elastic actuation <i>C. David Remy, Keith Buffinton, and Roland Siegwart</i>		Design of a Mechatronics Manufacturing System <i>Masoud Mofjtahed, Charlie Churchill, Amandeep Arora, Abhishek Mehra</i>		Thermal Compensation using Three-Dimensional Physical Machine Tool Models <i>Josef Mayr, Markus Ess, Sascha Weikert and Konrad Wegener</i>			
13.10 - 14.15				Buffet Lunch			
14.15 - 15.15				Keynote Lecture 3 / Prof. A. Preumont / Active Optics of Extremely Large Telescopes: A Challenge to Precision Mechatronics Auditorium HG E 3			
15.15 - 16.30	Novel Mechatronic Systems (sensors/actuators and embedded control) II Session Chair Prof. Philip Moore Room HG E 23		Robotic and Autonomous Vehicles III Session Chair Dr. Cedric Pradalier Room HG E 22		Active Control I Session Chair Prof. André Preumont Room HG E 21		
	Making of state space models of piezo-mechanical systems with exact impedance mapping and strain output signals <i>Reimund Neugebauer, Welf-Guntram Drossel, Kenny Pögel, and Burkhard Kranz</i>		Autonomous robot for welding line following for gas storage spheres inspection <i>Jun Okamoto Jr., Valdir Grassi Jr., Paulo Faria Santos Amaral, Benedito Geraldo Miglio Pinto, Daniel Pipo, Gustavo Pinto Pires and Marcus Vinicius Maciel Martins</i>		Active damping of self excited vibrations on a centerless grinding machine by means of a piezoelectric damper <i>Florian Fässler, Friedhelm Altpeter</i>		
	Model-based Position Control of Shape Memory Alloy Actuators <i>Neugebauer, Reimund; Pögel, Kenny; Bucht, André; Drossel, Welf-Guntram</i>		The quadruped ALoF and a step towards real world haptic terrain classification <i>Mark A. Hoepflinger, C. David Remy, Marco Hutter, and Roland Siegwart</i>		Control of chaotic vibrations using the principle of autoparametric resonances <i>Roland Anderegg and Lukas Recher</i>		
The automatic inspection system of roller bearings' defects using computer methods of processing and image analysis <i>T. Wojcicki, P. Czajka, and T. Giesko</i>		Relative Localisation using Optical Motor Sensors on LEGO Mindstorm NXT Robotic Platform <i>Michael Johnson, Martin J. Hayes</i>		Integration of Control Effort Aspect into Strategy Design and Comparison <i>Jérémie Monnin</i>			
16.35 - 17.05				Coffee Break			
17.05 - 18.05	Space and Underwater Applications I Session Chair Prof. Ken Rotter Room HG E 23		Machine Tools, Manufacturing Processes, Precision Machining and Machinery III Session Chair Prof. Jacques Giovanola Room HG E 22		Nano- and Micro-Mechatronics I Session Chair Prof. Philip Moore Room HG 21		
	Kinematic Modeling of Underwater Vehicle-Manipulator Systems By Use of Screw Theory Methods <i>Carlos R. Rocha and Altamir Dias</i>		Efficient mechatronic evaluation of machine tool designs using model reduction <i>P. Maglie, R. Carbinj, S. Weikert, K. Wegener</i>		Simulation and Experimental Validation of Bond Strength of a Surface Mount Chip Capacitor <i>C. I. Rizescu, G. Ionascu, A. Sandu2, D. Rizescu, and L. Bagatu</i>		
Drive for Swimming Robot <i>Teodor S. Akinfiev, Jean G. Fontaine, Andrey A. Apalkov, Manuel A. Armada</i>		Robot Technology in Hybrid Assembly Approche for precise Manufacturing of Microproducts <i>Kostadin Gr. Kostadinov</i>		Electromagnetically Actuated Valveless Micropump in Polymer-Technology <i>Martin Heinisch, Erwin K. Reichel, and Bernhard Jakoby</i>			
18.05 - 18.35							
18.35 - 19.30							
19.30 - 22.30				Conference Diner			

Day 3				WEDNESDAY, 30. June 2010			
08.00 - 08.30							
08.30 - 09.00				Coffee, Registration			
09.00 - 10.00				Keynote Lecture 4 / Dr. J. Hamann / System Design for Machine Tool Auditorium HG E 3			
10.00 - 11.00	Calibration, Measurement and Inspection II Session Chair Prof. Silvano Balemi Room HG E 23		Novel Mechatronic Systems (sensors/actuators and embedded control) III Session Chair Prof. Harald Wild Room HG E 22		System Modeling: Tools, Analysis and Simulation III Session Chair Dr. Xiu Tian Yan Room HG E 21		
	A Finger Pose Measuring Method for Hand User Interface of Object Shape Design <i>Akinori Sasaki, Hiroshi Hashimoto Sho Yokota, Yasuhiro Ohyama, and Naoki Amano</i>		Hydraulic Switching Control of Resonant Drives <i>Helmut Kogler and Rudolf Scheidl</i>		State Space Control Extension for Robot Manipulators by TCP Acceleration Feedback <i>Myriam Gessner, Christian Preiser, Sascha Weikert, Oliver Zirn</i>		
	Statistical Analysis of the Effect of Temperature on RFID Tag Readability <i>Gokarna Aryal, Kiran Chanda, Lash Mapa</i>		A High Performance Restrictor for an Adaptive Gas Spring Damper System <i>Frank Bärecke, Muhammed Abed Al-Wahab and Roland Kasper</i>		Simulation of Multi-robot Cooperative Systems programming based on a three environment definition <i>Tonetto C. P., Rocha C. R. and Dias A.</i>		
	Development of mechatronic means for raster and coded scales measurement <i>Vytautas Giniotis, Pranas Kuzas</i>						
11.00 - 11.30				Coffee Break			
11.30 - 13.10	System Modeling: Tools, Analysis and Simulation IV Session Chair Prof. Rolf Isermann Room HG E 23		Novel Mechatronic Systems (sensors/actuators and embedded control) IV Session Chair Dr. Daniel Toal Room HG E 22		Machine Tools, Manufacturing Processes, Precision Machining and Machinery IV Session Chair Prof. Konrad Wegener Room HG E 21		
	Modelling of Mechatronic Systems with Distributed Parameter Components <i>Cezary Orlikowski, Rafal Hein</i>		A concept for a modular and highly integrated torque sensor for drive units of a humanoid robot <i>A. Albers, C. Sander, M. Fritsch, J. Ottnad</i>		Process Control for Ultrasonic Hole-Drilling in Hard Brittle Materials <i>Kossi Agbeviade, Emmanuel Deghilage, David Hoover, Elia Deschoux, Jacques Giovanola and Daniel Kremer</i>		
	Industry Case Study: Novel Distributed Real Time Control System for a Target Motion Simulator <i>Martin Kaegi, Angelo Coviello, Dominik Gunsch, Robin Hauser, Walter Rindlisbacher, Peter Woeltli, Christoph Wegmüller</i>		Combined Partial Sliding Mode and Linear Control of Double Underactuated Disks <i>M.S. Rahimi Moosavi, M. Khaghani and G.R. Vossoughi</i>		Process-integrated measurement on machine tools by means of a laser sensor <i>Steffen Schreiber, Matthias Klaus, Christine Schöne, Ralph Stelzer</i>		
	Adaptive database for universal data source access in industrial environments for ADM <i>Manfred Benesch, Hellmuth Kubin, Klaus Kabitzsch</i>		Characterisation of Shape Memory Alloys to be used for a Robotic Hand <i>Jawad Daudpota, Abbas A. Dehghani-Sanj</i>		Integration of Vision Technology and Radio Frequency Identification (RFID) in a Manufacturing Environment <i>Lash Mapa, Fred D Turek, Sai Kiran Camsarapalli</i>		
	Model-based Design of a Laboratory Annealing Simulator <i>Peter Hehenberger, Martin Follmer, Richard Geirhofer, Leopold Stegellner, Andreas Pumberger, Klaus Zeman</i>		On the Design and Manufacturing of a Biped Actuated by Shape Memory Alloys <i>Amin Tohidi, Majid M. Moghaddam and Alireza Hadi</i>		Development of desktop size metal hammering system by use of liner motor -Basic concept of hammering force control - <i>Hidetake Tanaka, Yuta Kondo, Kazuhisa Yanagi, and Naoki Asakawa</i>		
13.10 - 14.15				Lunch			
14.15 - 15.15				Keynote Lecture 5 / Prof. T. Fukuda / Mechatronics -Past, Present and Future- Auditorium HG E 3			
15.15 - 16.30	Renewable Energy / Product Design I Session Chair Prof. Harald Wild Room HG E 23		Robotic and Autonomous Vehicles IV Session Chair Prof. Rudolf Scheidl Room HG E 22		System Modeling: Tools, Analysis and Simulation V Session Chair Dr. Jens Hamann Room HG E 21		
	Distributed Cooperative Control Approach for Smart Manufacturing in the Smart Grid <i>Vittal V. Prabhu</i>		Wireless Localization for Mobile Robots via Particle Filter and Sensor Fusion <i>Cheng-Chung Hsu, Syh-Shiuh Yeh, and Pau-La Hsu</i>		The Kinematic Constraints Method and Its Use in Collision Avoidance of Robot Manipulators <i>Carlos R. Rocha, Cristiane P. Tonetto and Altamir Dias</i>		
	A concept for the Exchange of Engineering Data during Mechatronics Design Processes for Manufacturing Systems for the Automotive Industry <i>Malte Prässer, Philip Moore, Chi-Biu Wong and Ulrich Schmidt</i>		Dynamic walking stability of the Tulip robot by means of the extrapolated center of mass <i>Winkel M. Bouwman, Gijs van Oort, Edwin C. Dertien, Jan F. Broenink and Ra aella Carloni</i>		Ray tracing simulations of the IR-emission of a Fabry-Perot-based thin film structure for NDIR gas sensors <i>Johann Mayrwöger, Wolfgang Reichl, Christian Krutzler, Bernhard Jakoby</i>		
	A High Altitude Wind Energy Project Including Parafoil Controller Design <i>Hammad Ahmad, Daniel Toal, Colm O'Gairbhith, and Joseph Coleman</i>		Stability Analysis of Piecewise Linear Oscillator for Humanoid Robot Locomotion <i>Zaier Riadh</i>		Numeric chaining of design process information for mechatronic products <i>Frey E., Gomes S. and Xiu-Tian Yan</i>		
16.35 - 17.05				Coffee Break			
17.05 - 18.05	Bio-, Medical-Mechatronics II Session Chair Dr. Deasún Ó Conchúir Room HG E 23		Robotic and Autonomous Vehicles V Session Chair Prof. Harald Wild Room HG E 22		Design for Sustainability, Recycling Technology I Session Chair Prof. Konrad Wegener Room HG E 21		
	The Effect of Sensor Thickness and Length on the Interface Pressure Measurement Induced by Medical Compression Bandages <i>Jowad Al Khaburi, Abbas A. Dehghani-Sanj, E Andrea Nelson and Jerry Hutchinson</i>		Realisation of a Prototype Climbing Robot and Implementation of a Multi-Modal Adaptive Control Scheme <i>Sean A. Jacobs and Dr. Abbas A. Dehghani-Sanj</i>		Sustainability Issues within Mechatronics Pt I – Issues and Context <i>John Millbank and David Bradley</i>		
	Mechatronic Hand-Based Grasp and VR Implementation <i>Alvaro J. Uribe, João M. Rosário, and Oscar F. Avilés</i>		Static Collision Safety Analysis of Semi Active Compliant Robot for Safe Human Robot Interaction <i>Muhammad Rehan Ahmed, Ivan Kalaykov</i>		Sustainability Issues within Mechatronics Pt II – Technological Impact <i>John Millbank and David Bradley</i>		
18.05 - 18.35				Closing			
18.35 - 19.30				Prof. K. Wegener / Prof. H. Wild / Dr. Xiu Tian Yan Auditorium HG E 3			
19.30 - 22.30				Guided Sight Seeing Tour, Zurich			