

MECHATRONICS 2018 - Reinventing Mechatronics

19-21 September 2018 University of Strathclyde, Glasgow, UK

18:30-20:30pm 18th, Sept, 2018 - Welcome Drink Reception and Registration (Venue to be confirmed)

Wednesday 19 September 2018

Time:												
13:00	13:30	Welcome Speech										
13:30	14:30	Plenary 01 (To Be Confirmed)										
14:30	15:00	Coffee Break and Refreshment										
15:00	17:00	<p style="text-align: center;">Session 01 – What is Mechatronics and future mechatronics?</p> <table border="0"> <tr> <td>David Bradley, David Russell, Peter Hehenberger, Stephen Watt, Christopher Milne & Jorge Azorin-Lopez</td> <td>Mechatronics and The Cloud</td> </tr> <tr> <td>David Russell</td> <td>Mechatronics and the Internet of Things: A Solution or a Problem</td> </tr> <tr> <td>Edward Simpson, David Bradley & Peter Hehenberger</td> <td>Innovation and Failure in Mechatronics Design Education</td> </tr> <tr> <td>Martin Edin Grimheden & Elias Flening</td> <td>Many Mechatronics: A discursive model of Mechatronics' definitions</td> </tr> <tr> <td>Martin Edin Grimheden & Sulaymon Eshkabilov</td> <td>Development and Introduction of Mechatronics program in the example of five Uzbek universities</td> </tr> </table>	David Bradley, David Russell, Peter Hehenberger, Stephen Watt, Christopher Milne & Jorge Azorin-Lopez	Mechatronics and The Cloud	David Russell	Mechatronics and the Internet of Things: A Solution or a Problem	Edward Simpson, David Bradley & Peter Hehenberger	Innovation and Failure in Mechatronics Design Education	Martin Edin Grimheden & Elias Flening	Many Mechatronics: A discursive model of Mechatronics' definitions	Martin Edin Grimheden & Sulaymon Eshkabilov	Development and Introduction of Mechatronics program in the example of five Uzbek universities
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Thursday 20 September 2018

09:00	11:00	Special Session What is the Future of Mechatronics in Manufacturing?	
11:00	11:30	Coffee Break and Refreshments	
11:30	12:30	<p>Plenary 02 Reinventing Mechatronics for Extreme Environments</p> <p>Mr. Stephen Sanders, Director - Strategic Remote Operations</p> <p>Oxford Technologies Ltd</p>	
12:30	14:00	Buffet Lunch	
		Session 02 - Medical Systems (Room 4)	Session 03 - Simulation & Modelling (Room 5)
		Alireza Abouhossein, Uriel Martinez-Hernandez, Mohammed I. Awad, David Bradley & Abbas A. Dehghani-Sanij	Human-activity-centered measurement system: challenges from laboratory to the real environment in assistive gait wearable robotics
			Jieren Ke, Xing Luo, Mark Dooner & Jihong Wang
			A Mixed NN-numerical and Physical Modelling Approach for Compressed Air Energy Storage System Analysis

14:00	15:00	Derya Yilmaz & Abbas Dehghani-Sanij	A review of assistive robotic exoskeletons and mobility disorders in children to establish requirements of such devices for paediatric population	Georges Tod, Klaas Gadeyne, Jan Goos, Ahmed Abdallah & Maarten Witters	Towards Robust Hybrid Electric Vehicle Computational Design Synthesis
		Imran Mahmood, Uriel Martinez-Hernandez & Abbas A. Dehghani-Sanij	Gait Dynamic Stability Analysis for simulated Ankle-foot impairments and Bipedal robotics applications	Mark Dooner & Jihong Wang	Surface Charge Modelling and Simulation of the Magnetic Field in a Novel Magnetized Scroll Air Expander

15:00	15:30	Coffee Break and Refreshments			
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15:30	17:00	Session 04 - Vehicles & Drones (Room 4)		Session 04 - Vehicles & Drones (Room 5)	
		Hongzhao Zhou, Andrew Plummer & David Cleaver	Distributed Actuation of Tensegrity Structures for Morphing Aircraft wings	Seth Simpson & Seng Chong	Model based system engineering of a Flight Simulator System based on a Stewart Platform with the use of SYSML diagrams
		Markus Pichler-Scheder, Reinhard Ritter, Christian Lindinger, Robert Amerstorfer and Roland Edelbauer	Robust On-Line Polynomial Path Planning for Agricultural Vehicles in Greenland Farming	Yves Lemmens, Marco Grottoli & Anne van der Heide	A human-in-the-loop simulation platform for the validation of advanced driver assistance systems
		Omar Rashed, Mohamed Abdellatif, Sameh Shabaan & Abdulaziz Morgan	Online Ocean Current Estimation and Mapping for Autonomous Underwater Vehicle	Matthias Konz, David Kastelan & Joachim Rudolph	Practical Challenges of Fully-Actuated Tricopter Control

19:30	22:00	Conference Dinner (Venue to be confirmed)			
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Friday 21 September					
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09:00	10:00	Session 05 - Sensors & Actuators (Room 4)		Session 05 - Sensors & Actuators (Room 5)	
		Ghazi Qaryouti and Tariq Younes	Practical Investigation of an Ultrasonic Encoder	Sergey Sokolov, Andrey Boguslavsky & Nikolay Beklemishev	Unified Modular Vision Systems for Mobile Robots
		Immanuel Voigt, Welf-Guntram Drossel, André Bucht, Stefan Winkler & Ralf Werner	Latent heat storages with shape memory alloy thermal switch for thermal error compensation on linear direct drive	Vanraj, Sukhdeep Singh Dhami & B S Pabla	Gear fault classification using Vibration and Acoustic Sensor Fusion: A Case Study
		Scott Brady & Xiu Yan	An engineering design tool capable of nurturing the development of new mechatronic actuators	Keith A Lorenz, Laura M Justham & Michael R Jackson	Industrial Vision Based Process Monitoring for Laser Cladding

10:00	10:30	Coffee Break and Refreshments			
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10:30	11:30	Session 06 - Manufacturing (Room 4)		Session 07 - Control (Room 5)	
		Abdullah Mohammed & Lihui Wang	A framework for human-robot collaborative assembly	Frederik Debrouwere & Mark Versteyhe	Closed Loop Shaping for Robust PID Design using Sequential Convex Second Order Cone Programming
		Albert Pötsch & Andreas Springer	From the Sensor to the Cloud: On the Deployment of Wireless Low Power Wide Area Networks for Industrial Communication	Sina Mohammadrezaei Nodeh, Mohammad Soltanshah, Mohammad Hasan Ghasemi & Xuping Zhang	Combination of interval Type 2 Fuzzy Logic and High Order Sliding Mode Control for Robotic Manipulators with Parametric Uncertainties and Perturbations

		Daniel Spescha, Sascha Weikert & Konrad Wegener	Simulation of the dynamic behaviour of machine tools	Frederik Debrouwere, Mark Versteyhe & Stijn Debruyne	Including the Stribeck friction curve in optimal path following motions
11:30	11:45	Break			
11:45	12:45	Johanna Kubenke, Philip Roh & Andreas Kunz	Assessing the Efficiency of Information Retrieval from the Digital Shadow at the Shoop Floor using IT Assistive Systems	Sang D Lee & Seul Jung	Synchronized Control of a Dual Control Moment Gyroscope in Scissored Pair Configuration
		Steffen Ihlenfeldt, Jens Müller, Marcel Merx & Christoph Peukert	A Novel Concept for Highly Dynamic Over-Actuated Lightweight Machine Tools	Jorge Solis, Christoffer Karlsson & Ann-Louise Lindborg	Vision-based detection and positioning target for mobile robotic devices
		Thomas McMaster & Xiu Yan	Development of a heat flow code to simulate production of a functionally graded material robotic gripper using the additive manufacture process	Hyun W. Kim & Seul Jung	Torque Evaluation of a Small Control Moment Gyroscope with Scissored Pair Configuration
13:00	13:30	MECHATRONICS 2018 Close. Enjoy your stay in Glasgow and have a safe journey home			