Program in Short

Wednesday 25th of May, 2011

9:00-18:00	**Registration**
9:00-15:00	**Joint Industry-Research Networking and Matchmaking Meeting** **Technical Visits** **Fastems Oy Ab:** http://www.fastems.com/ **Avant Tecno Oy:** http://www.avanttecno.com/ **Katsa Oy:** http://www.katsa.fi/ **Agco Sisu Power Oy:** http://www.agcosisupower.com/ **TUT/Department of Production Engineering:** http://www.tut.fi/tte **VTT Technical Research Centre of Finland:** http://www.vtt.fi/
15:00-17:30	**Opening Ceremony** *Location: Studio* **Plenary Session** *Chair: Prof. Reijo Tuokko, Tampere University of Technology, Finland* *Location: Studio* **Keynote 1:** Challenges of Manufacturing in the Future - *Prof. Paul H. Andersson, Tampere University of Technology, Finland* **Keynote 2:** Lean Product and Process Development for Competitive Enterprises - *Prof. F. Frank Chen, University of Texas at San Antonio, USA* **Keynote 3:** Novel industrial robot systems for manufacturing in Japan - *Prof. Tamio Arai, The University of Tokyo, Japan*
18:00-20:00	**IEEE ISAM 2011 Reception** *Chair: Prof. Reijo Tuokko, Dr. Minna Lanz, Tampere University of Technology, Finland* *Location: Restaurant Fuuga, Tampere Hall*

Thursday 26th of May, 2011

8:30-9:20	**Keynote Plenary Session** *Chair: Prof. Tamio Arai, The University of Tokyo, Japan* *Location: Studio* **Keynote 4:** Concrete and Fiber of the Toyota Production System - *Richard P. Alloo, Toyota Motor Engineering and Manufacturing North America, Inc., US*		
9:20-9:40	Coffee Break		
9:40-11:00	Session 1A1: Micro and Macro Assembly and Manufacturing Processes: CNC *Chair: Prof. Paul H. Andersson, Tampere University of Technology* *Location: Studio* **ID:111** Member Stiffnesses and Interface Contact Characteristics of Bolted Joints, *Zhaohui Yang* **ID:147** An error compensation method for	Session 1B1: Competitive and Sustainable Production and Systems: Towards Sustainable Systems *Chair: Prof. Esko Niemi, Aalto University* *Location: Sonaatti 1* **ID: 132** Improving accuracy of aging CNC machines without physical changes, *Kimmo Mäkelä* **ID:189** Implementation of Energy-Related Aspects into Model-Based Design of	Session 1C1: Digital Manufacturing: Utilization of Knowledge and Information Systems *Chair: Dr. Tero Juuti, Tampere University of Technology* *Location: Sonaatti 2* **ID:181** Presenting capabilities of resources and resource combinations to support production system adaptation, *Eeva Järvenpää* **ID:192** User-Centric

	multi-axis machining based on the actual contour measurement, *Xuewei Li* **ID:194** Dynamic Stabilization of Technological Systems for Processing Edge Cutting Through the Local Metastability, *Marten Madissoo* **ID:224** Milling Estimation Study, Assuming Estimation of Cutting Force, *Virginija Gyliene*	Processes and Process Chains, *Sven Goller* **ID:209** Analysis of Learning Pallets in Flexible Scheduling by Closed Queue Network, *Afshin Mehrsai*	Development Of Simulation Based Manufacturing Operation Planning And Scheduling System, *Juhani Heilala* **ID:233** Assessing the cost of robust capacity allocation for serving dynamic customer demand, *Thomas Makuschewitz*
11:00-11:20	Coffee Break		
11:20-12:40	Session 1A2: Micro and Macro Assembly and Manufacturing Processes: Miniaturized Robotics and Assembly Systems *Chair: Mr. Riku Heikkilä, Tampere University of Technology* *Location: Studio* **ID:102** Fuzzy Logic based Ultrasonic Gripper Design for Handling Small Parts, *Thomas Kirchmeier* **ID:122** Micro Robot for Rotary Desktop Assembly Line, *Philipp Kobel* **ID:216** Pollution Monitoring Sensor for a Micro-Factory, *Miroslav Kral*	Session 1B2: Competitive and Sustainable Production and Systems: Sustainable System Units and Systems *Chair: Dr. Mikko Koho, Tampere University of Technology* *Location: Sonaatti 1* **ID:130** The Effect of Short-term Planning Delays in Multi-Item Production-Inventory Systems, *prof. Esko Niemi* **ID:156** Limitations in Modeling Autonomous Logistic Processes - Challenges and Solutions in Business Process Modeling, *Daniel Rippel* **ID:195** Ambient Intelligence Based Monitoring And Energy Efficiency Optimisation System, *Juhani Heilala*	Session 1C2: Digital Manufacturing: Merging the Real and Virtual Environments *Chair: Mr. Hasse Nylund, Tampere University of Technology* *Location: Sonaatti 2* **ID:141** Development of production cells with regard to physical and cognitive automation - A decade of evolution, *Sandra Mattsson* **ID:177** Triple Stereo Vision System for Safety Monitoring of Human-Robot Collaboration in Cellular Manufacturing, *prof. Tamio Arai* **ID:231** On the integration of skilled robot motions for productivity in manufacturing, *Klas Nilsson* **ID:235** Dynamic Operation Environment – Towards Intelligent Adaptive Production Systems, *Pasi Luostarinen*
12:40-13:40	Lunch Break		
13:40-15:00	Session 1A3: Micro and Macro Assembly and Manufacturing Processes: Gears and Bearings *Chair: Prof. Michael Yu Wang, The Chinese University of Hong Kong* *Location: Studio* **ID:133** A Zero Wear Assembly of a Hydrodynamic Bearing and a Rolling Bearing, *Dun Lui*	Special Session 1B3: Evolvable Production Systems *Chair: Mr. Antonio Maffei, KTH Royal Institute of Technology* *Location: Sonaatti 1* **ID:184** Evolvable Production Systems: a new business environment, *Antonio Maffei* **ID:203** Where EPS meets Complexity Science, *Luis Ribeiro*	Session 1C3: Digital Manufacturing: Modelling and Measurement aspects *Chair: Prof. Heikki Tikka, Tampere University of Technology* *Location: Sonaatti 2* **ID:95** Process Planning Based on Feature Recognition Method, *Fernando Garcia* **ID:183** Efficiency

	ID:135 Theoretical Method to Reduce the Non-repetitive Run- out (NRRO) of Angular Contact Ball Bearings, *ZhaoHui Yang* **ID:172** Finite Element Simulation of an Analogy Process for the Fine Blanking of Helical Gears, *Martin Zimmermann*	**ID:165** Evolvable Production Systems and Impacts on Production Planning, *Hakan Akillioglu*	Improvement in Generation of a Contact State Graph by Eliminating Unnecessary Elements, *Sung Jo Kwak* **ID:186** A Central Axis and Radius Estimation Method for Torus Object Modeling, *Kyeongdae Yoo*
15:00-15:20	Coffee Break		
15:20-16:40	Session 1A4: Micro and Macro Assembly and Manufacturing Processes: Advances in Material Science *Chair: Mr. Jorma Vihinen, Tampere University of Technology* *Location: Studio* **ID:155** Innovative Developments For Automated Magnet Handling And Bonding Of Rare Earth Magnets, *Jan Tremel* **ID:160** A New Method for Glass-Fiber Reinforced Composites Manufacturing: Automated Fiber Placement with In-situ UV Curing, *Dilimulati Abulizi* **ID:227** Machining of a Hollow Shaft Made of b-Titanium Ti-10V-2Fe-3Al, *Christian Machai*	Special Session 1B4: Micro and Macro Assembly and Manufacturing Processes: Microfactories *Chair: Prof. Kensuke Tsuchiya, The University of Tokyo* *Location: Sonaatti 1* **ID:97** microFLEX - A New Concept to Address the Needs for Adaptable Meso and Micro Assembly Lines, *Andreas Hofmann* **ID:173** Modular Microfactory System for Gas Sensor Assembly, *Niko Siltala* **ID:220** Evolvable Micro Production Systems: Specific Needs and Differences to Macro, *Andreas Hofmann*	Session 1C4: Digital Manufacturing: Advances in sheet metal products' manufacturing *Chair: Mr. Juhani Heilala, VTT Technical Research Centre of Finland* *Location: Sonaatti 2* **ID:99** DFMA-Aspects of sheet metal product in case of low-cost strategy, *Merja Huhtala* **ID:143** Observations of Applying DFM(A) in MW Mechanics and Sheet Metal Work, *Mika Lohtander* **ID:207** Feature Precedence Graphs as an Approach for the Forming Operations Planning of Integral Sheet Metal Parts, *Oliver J. Weitzmann*
16:40-17:40	Research Forum and Networking Event *Location: Lobby 1st floor, Studio*		
19:30-22:30	Banquette Juvenes Restaurant Ziberia Itäinenkatu 9 33210 Tampere		

Friday 27th of May, 2011

8:30-9:20	**Keynote Plenary Session** *Chair: Prof. Reijo Tuokko, Tampere University of Technology, Finland* *Location: Studio* **Keynote 5:** Implementing Sustainable Manufacturing for Innovation at Product, Process and Systems Levels – *Prof. I.S. Jawahir, University of Kentucky, US*
9:20-9:40	Coffee Break

9:40-11:00	Session 2A1: Micro and Macro Assembly and Manufacturing Processes: Process Improvement *Chair: Dr. Raúl Suárez, Universitat Politècnica de Catalunya* *Location: Studio* **ID:107** Development of Permanent Lubrication Using Grease on the Slide in the Machine Tool for Economical and Eco-friendly, *Ikuo Tanabe* **ID:148** Fluid-Structure Interations (FSI) on Static Characteristics of Hydrostatic Guideways, *Jun Zhang* **ID:151** Modal analysis of machine tools during working process by matrix perturbation method, *Haitao Li*	Special Session 2B1: Robot-based Automation of Nanohandling Processes I *Chair: Mr. Daniel Jasper, University of Oldenburg* *Location: Sonaatti 1* **ID:129** 3-Dimensional Electrokinetic Tweezing for Micro and Nano Assembly, *Roland Probst* **ID:161** Assembly of a novel MEMS-based 3D vibrating micro-scale co-ordinate measuring machine probe using desktop factory automation, *James D Claverley* **ID:182** Automated robot-based separation and palletizing of microcomponents, *Daniel Jasper*	Session 2C1: Micro and Macro Assembly and Manufacturing Processes: CNC *Chair: Mr. Andreas Hofmann, Karlsruhe Institute of Technology* *Location: Sonaatti 2* **ID:157** Dynamic Transmission Error Analysis for A CNC Machine Tool Based on Built-In Encoders, *Dilimulati Abulizi* **ID:167** Measuring mechanical properties of micro structures using micro manipulator with low rigidity, *Kensuke Tsuchiya* **ID:170** Multiple-axis Synchronization Evaluation for CNC Machine Tool Based on Sensorless Measurement, *Lin Jing* **ID:219** Failure prediction by means of cepstral analysis and coherence function between thrust force and torque signals, *Jaroslava Janekova*
11:00-11:20	Coffee Break		
11:20-12:40	Session 2A2: Micro and Macro Assembly and Manufacturing Processes: Intelligent Robotics *Chair: Dr. Klas Nilsson, Lund Institute of Technology* *Location: Studio* **ID:137** Including virtual constraints in motion planning for anthropomorphic hands, *Raúl Súarez* **ID:166** View-based Programming with Reinforcement Learning for Robotic Manipulation, *Yusuke Maeda* **ID:178** Towards Robot Systems for Small Batch Manufacturing, *Martijn Rooker* **ID:138** Importance Sampling based on Adaptive Principal Component Analysis, *Raúl Súarez*	Special Session 2B2: Robot-based Automation of Nanohandling Processes II *Chair: Mr. Daniel Jasper, University of Oldenburg* *Location: Sonaatti 1* **ID:100** Determination of Lattice Parameters of SCS Nanobeam in Process of Tensile Testing Using MEMS Actuator, *Hongjiang Zeng* **ID:127** Microrobotic Platform for Making, Manipulating and Breaking Individual Paper Fiber Bonds, *Pooya Saketi* **ID:202** Automated Handling and Assembly of Customizable AFM-Tips, *Daniel Jasper*	Session 2C2: Micro and Macro Assembly and Manufacturing Processes: Measurements and Control *Chair: Dr. Felix Kahleyß, Technische Universität Dortmund* *Location: Sonaatti 2* **ID:105** A New Measuring Method for Circular Motion Accuracy of NC Machine Tools Based on Dual-frequency Laser Interferometer, *Shanzhi Tang* **ID:190** Scanner test pattern for evaluation of beam manipulation accuracy, *Jorma Vihinen* **ID:193** A Dual Side Electroluminescence Measurement System for Manufacturing Epiwafers, *HyungTae Kim*
12:40-13:40	Lunch Break		
13:40-	Session 2A3: Micro and	Special Session 2B3: Micro	Session 2C3: Competitive and

15:00	Macro Assembly and Manufacturing Processes: Robotics and Production *Chair: Dr. Martijn Rooker, PROFACTOR GmbH* *Location: Studio* **ID:205** Cost Modelling for Micro Manufacturing Logistics when using a Grid of Equiplets, *Erik Puik* **ID:223** 3D-Assembly of Molded Interconnect Devices with Standard SMD Pick & Place Machines Using an Active Multi Axis Workpiece Carrier, *Michael Pfeffer* **ID:230** Manufacturing of micro-structured parts for mass production purposes, *Stephan Eilbracht*	and Macro Assembly and Manufacturing Processes: Collaborative Robotics *Chair: Mr. Niko Siltala, Tampere University of Technology* *Location: Sonaatti 1* **ID:124** Safety of Collaborative Industrial Robots, *Björn Matthias* **ID:204** A Flexible Robotic Gripper for Automation of Assembly Tasks, *Timothy Vittor* **ID:208** Requirements on Flexible Robot Systems for Small Parts Assembly, *Mikael Hedelind* **ID:211** A Robot Concept for Scalable, Flexible Assembly Automation, *Mikael Hedelind*	Sustainable Production and Systems: Aspects of Sustainability *Chair: Dr. Timo Lehtonen, Tampere University of Technology* *Location: Sonaatti 2* **ID:180** Enforcing employees participation in the factory planning process, *Riechel Christoph* **ID:187** Objectives, enablers and challenges of sustainable development and sustainable manufacturing: Views and opinions of Spanish companies, *Mikko Koho* **ID:236** Life Cycle Simulation (LCS) Approach to the Manufacturing Process Design for Sustainable Manufacturing, *Khir Harun*
15:00-15:20	Coffee Break		
15:20-16:30	Session 2A4: Micro and Macro Assembly and Manufacturing Processes: Robotics and Assembly Systems *Chair: Mr. Timo Prusi, Tampere University of Technology* *Location: Studio* **ID:150** Control of automatic assembly platform for a large unit based on equivalent parallel, *Jinhua Zhang* **ID:153** Research on dual-driving synchronous control system modeling of gantry-type machine tools with travelling bridge, *Yuxia Li* **ID:174** Modular Control System for Reconfigurable Robot Applications, *Markus Janßen*	Session 2B4: Competitive and Sustainable Production and Systems: New Sustainable Environments *Chair: Mr. Kai Salminen, Tampere University of Technology* *Location: Sonaatti 1* **ID:106** Combining Facility Layout Redesign and Dynamic Routing for Job-shop Assembly Operations, *Lihui Wang* **ID:117** A Prototype of Modeling and Simulation for Sustainable Machining, *Guodong Shao* **ID:234** Introduction of a Competitive and Sustainable Research Environment, *Ari Ranta* **ID:206** Towards learning Pallets Applied in Pull control job-open shop, *Afshin Mehrsai*	
16:30-17:00	Closing Session *Location: Studio*		