

**4th INTERNATIONAL CONFERENCE ON
CHANGEABLE, AGILE, RECONFIGURABLE AND VIRTUAL PRODUCTION (CARV 2011)
2 – 5 October 2011, Montreal, Canada**

PROGRAM

Sunday October 2, 2011	
17:30 – 19:30	EARLY BIRD REGISTRATION and WELCOME RECEPTION (Salons 4&5)

Monday October 3, 2011	
08:00 – 12:00	REGISTRATION (Ballroom West Foyer)
08:30 – 10:15	PLENARY SESSION (Ballroom West) Chairperson: Professor Waguih EIMaraghy <i>Intelligent Manufacturing Systems Centre, University of Windsor</i> OPENING & WELCOME Professor Michael Zaeh and Professor Hoda EIMaraghy KEYNOTE PAPERS Change in Manufacturing – Research and Industrial Challenges <i>H. EIMaraghy, T. AlGeddawy, A. Azab, W. EIMaraghy (Canada)</i> Adaptive Job Control in the Cognitive Factory <i>M. F. Zaeh, M. Ostgathe, F. Geiger, G. Reinhart (Germany)</i> Mass Customisation as a Competitive Factor for Sustainability <i>A. Bernard, J. Daaboul, F. Laroche, C. Da Cunha (France)</i>
10:15 – 10:45	COFFEE BREAK (Ballroom West Foyer)

Monday October 3, 2011 (Cont'd)

	Salon Drummond West	Salon Drummond East	Salon Drummond Center
10:45 – 12:25	Manufacturing Systems Paradigms	Product / Production Development and Co-Development	Enterprise and knowledge management
	Session 1.1 Manufacturing system design, planning, operation, and control <i>Chair: Prof. S.T. Newman</i>	Session 2.1 Co-Evolution of Products, Processes and Manufacturing Systems <i>Chair: Prof. A. Bernard</i>	Session 3.1 Manufacture and Organizational Structures <i>Chair: Prof. M. F. Zaeh</i>
10:45 – 11:05	A Transition in Production and Planning for a Changeable Micro Manufacturing System <i>B. Röhlrig, J. P. Wulfsberg (Germany)</i>	From Dedicated to Platform-Based Co-Development of Products and Manufacturing Systems <i>M.T. Michaelis, H. Johannesson (Sweden)</i>	A Novel Tool for Assessing and Improving Make-to-Order and Assemble-to-Order Production Systems <i>M. Koho, S. Torvinen (Finland)</i>
11:05 – 11:25	Integrating Ability Limitations into Assembly System Design <i>G. Reinhart, J.F. Egbers (Germany)</i>	Nature Inspired Co-evolution in the Manufacturing World of Artefacts <i>T. AlGeddawy, H. ElMaraghy (Canada)</i>	Reference Planning Processes for Series Production <i>N. Macke, S. Rulhoff, J. Stjepandic (Germany)</i>
11:25 – 11:45	Linnaean and Cladistic Classifications of Manufacturing Systems <i>J. Baldwin, C. Rose-Anderssen, K. Ridgway (UK)</i>	Networked product and production development for lithium-ion batteries <i>A. Kampker, B. Franzkoch, C. Nowacki, (Germany)</i>	The effect of manufacturing response time on mitigating the demand risk and facility disruption <i>I. Niroomand, M.B. Baygi, O.Kuzgunkaya, A.A.Bulgak (Canada)</i>
11:45 – 12:05	Selection Catalogue of Kinematic Configuration for Pick and Place Application <i>K. Chandrasekaran, A. Djuric, W. ElMaraghy (Canada)</i>	Requirements Management as a Success Factor for Simultaneous Engineering <i>G. Reinhart, J.F. Meis (Germany)</i>	Operator Scheduling Under the Lean Manufacturing Principles in Over-Size Product Manufacturing Facilities <i>K. Ertogral, A. Akgunduz (Canada)</i>
12:05 – 12:25	Using formal methods to model hybrid manufacturing processes <i>A. Nassehi, S.T. Newman, V. Dhokia, Z. Zhu, R.I. Asrai (UK)</i>	From product architecture to assembly sequence: a method to develop conceptual Design for Assembly based on interface analysis <i>C. Favi, M. Germani (Italy)</i>	A Planning Approach for In-plant Milk Run Processes to Optimize Material Provision in Assembly Systems <i>M. Droste, J. Deuse (Germany)</i>
12:30 – 14:30	LUNCH (Salons 4&5)		
	Salon Drummond West	Salon Drummond East	Salon Drummond Center
14:30 – 16:10	Manufacturing Systems Paradigms	Product / Production Development and Co-Development	Enterprise and knowledge management
	Session 1.2 Manufacturing system design, planning, operation, and control <i>Chair: Prof. Z. J. Pasek</i>	Session 2.2 Variant-Oriented Modelling and Management of Variation <i>Chair: Prof. W. ElMaraghy</i>	Session 3.2 Transformation and Change Management <i>Chair: Prof. J. Baldwin</i>
14:30 – 14:50	Considering Reconfigurability Characteristics in Production System Design <i>C. Rösiö (Sweden)</i>	Bottom-Up Component Oriented FE-Modelling of Machine Tools <i>A. Dadalau, A. Verl (Germany)</i>	Cladistic Classification of Ancient Manufacturing Forms and Technologies <i>C. Rose-Anderssen, J. Baldwin, K. Ridgway (UK)</i>
14:50 – 15:10	Ontology-driven Requirements Elicitation in Product Configuration Systems <i>H. Wicaksono, V. Schubert, S. Rogalski, Y. Ait Laydi, J. Ovcharova (Germany)</i>	Assessment of the product based time expanding effect <i>H. Jander, B. Spanner-Ulmer. (Germany)</i>	Real-time capable Production Planning and Control in the Order Management of built-to-order Companies <i>G. Schuh, T. Brosze, S. Kompa, C. Meier (Germany)</i>
15:10 – 15:30	New Methods to Create Variants of 3-D Simulation Models of Manufacturing Systems <i>R. Wischniewski, J. Rossmann, O. Stern (Germany)</i>	Feature-based component description for functional graded parts <i>F. Bauer, D. Dettmer, J. Gausemeier (Germany)</i>	Cross-company coordination in Built-to-Order Production Networks in Machinery and Equipment Industry <i>V. Stich, C. Schmidt, C. Meier, S. Cuber, S. Kompa (Germany)</i>
15:30 – 15:50	Product variety, flexibility and energy use in hot rolling mills <i>J. Storck (Sweden)</i>	Towards a Feature-Based and Fine-Grain Product Repository for Heterogeneous Computer-Aided Systems <i>M. M. Uddin, Y.-S. Ma (Canada)</i>	Type-Oriented Factory Planning with Solution Space Management <i>A. Kampker, B. Franzkoch, R. Hilchner (Germany)</i>
15:50 – 16:10	Lost Value Mapping – A Fast Method to Track Lost Value in a Production Flow <i>P. Pawlewski, Z. J. Pasek (Poland)</i>	Sustainable System Risk Analysis: A Triple Bottom Line Approach <i>Z. Ali-Qureshi, W. ElMaraghy (Canada)</i>	Optimum Restoration of the Shared Pallets Distribution Among Factories and Warehouses <i>T. Matsuura, S. Wada, K. Numata (Japan)</i>
Enjoy The evening in Montréal			

REGISTRATION (Salon Drummond Foyer)			
08:00 – 12:00	Salon Drummond West	Salon Drummond East	Salon Drummond Center
8:30 – 10:10	Manufacturing Systems Paradigms	Product / Production Development and Co-Development	Global Competitiveness and Sustainability
	Session 1.3 Changeability, flexibility, Re-Configurability And their metrics Chair: Prof. Luc Laperriere	Session 2.3 Product, Process and Systems Modelling, Prototyping and Development Chair: Prof. M. F. Zaeh	Session 3.3 Drivers, Enablers, Strategies and Indices Chair: Prof. P. Schönsleben
08:30 – 08:50	A survey on changeability of machine tools <i>P. Hollstein; H. Lasi; H.-G. Kemper (Germany)</i>	Construction of a Digital Facebow <i>E. Solaberrieta, A. Arias, O. Etxaniz, R. Minguéz (Spain)</i>	An Asian Perspective on Global Sourcing <i>C. Schneider, G. Finke, A. Sproed, R. Alard, P. Schönsleben (Switzerland)</i>
08:50 – 09:10	Quantifying the Effect of Enterprise Strategic Flexibility <i>A. Arafa, W. ElMaraghy (Canada)</i>	Evaluation of RFID Technology Application in Production of Fiber-Reinforced Plastics <i>T. R. Philipp, G. Reinhart (Germany)</i>	Strategic Evaluation of Technology Chains for Producing Companies <i>G. Reinhart, S. Schindler (Germany)</i>
09:10 – 09:30	Decision Making During Design and Reconfiguration of Modular Assembly Lines <i>K. Tracht, S. Hogreve (Germany)</i>	Selecting Virtual Reality Tools in relation with their use context <i>R. G. J. Damgrave, D. Lutters, J. P. Thalen (Netherland)</i>	Strategic Impact of Global Production – How to Find the Success Measures <i>H. Bürstner (Germany)</i>
09:30 – 09:50	Development of manufacturing process chains considering uncertainty <i>S.O. Schmitt, J. Avemann, P. Groche (Germany)</i>	A Framework Enabling Data Integration for Virtual Production <i>R. Reinhard, T. Meisen, T. Beer, D. Schillberg, S. Jeschke (Germany)</i>	Co-opetition as a facilitator of manufacturing competitiveness: opportunities and threats <i>F. Ehrenmann, M. Reiss (Germany)</i>
09:50 – 10:10	Optimal Sequencing of Machining Operations for Changeable Manufacturing <i>A. Azab, A. H. Gomaa (Canada)</i>	A Foundation for Integrating Hand Held Mobile Devices in a Computer Aided Manufacturing Environment <i>R. Hedrick, J. Urbanic (Canada)</i>	Enabling Competitive Design of Next Generation Reconfigurable Manufacturing Enterprises <i>T. Masood, R.H. Weston (UK)</i>
COFFEE BREAK (Salon Drummond Foyer)			
10:10 – 10:40	Salon Drummond West	Salon Drummond East	Salon Drummond Center
10:40 – 12:20	Manufacturing Systems Paradigms	Product / Production Development and Co-Development	Global Competitiveness and Sustainability
	Session 1.4 Changeability, flexibility, Re-Configurability and their metrics Chair: Prof. Luc Laperriere	Session 2.4 Product, Process and Systems Modelling, Prototyping and Development Chair: Prof. A.D. Spence	Session 3.4 Economic Sustainability for Manufacturing systems and Products Chair: Prof. S. Torvinen
10:40 – 11:00	Manufacturing Concepts of the Future – Upcoming Technologies Solving Upcoming Challenges <i>R. Hadar, A. Bilberg (Denmark)</i>	Refining Process Logic From CNC Part Programmes for Integrated STEP-NC Compliant Manufacturing <i>X. Zhang, A. Nassehi, V. G. Dhokia, S. T. Newman (UK)</i>	Integrated Environmental and Economic Assessment of Production Systems <i>A. Sproedt, J. Plehn, C. Schneider, P. Schönsleben (Switzerland)</i>
11:00 – 11:20	Analysis of Reconfigurable 2DOF Machinery for Intelligent Manufacturing Systems <i>A. Djuric; W. ElMaraghy (Canada)</i>	A System for Providing Visual Feedback of Machine Faults <i>K. Hughes, G. Szkilnyk, B. Surgenor (Canada)</i>	Towards Sustainable Development and Sustainable Production in Finnish Manufacturing Industry <i>M. Koho, .M. Tapaninaho, S. Torvinen (Finland)</i>
11:20 – 11:40	Mobile Systems for Machining Large Work Pieces <i>R. Neugebauer, U. Pribner, H. Rentzsch, S. Ihlenfeldt, D. Hoffmann (Germany)</i>	Flexible Tool-path Generation for Variable Geometry <i>D.A. Sawula, Y.P. Lin, R.V. Fleisig, A.D. Spence (Canada)</i>	Employee Participation in the Implementation of Lean Production Systems <i>U. Dombrowski; T. Mielke; S. Schulze (Germany)</i>
11:40 – 12:00	Methodology for Flexibility Measurement in Semi-automatic Production <i>S. Rogalski, H. Wicaksono (Germany)</i>	An Experimental Study to Determine Geometric and Dimensional Accuracy Impact Factors for Fused Deposition <i>S. Saqib, J. Urbanic (Canada)</i>	Challenges Facing Manufacturing to Move towards a Green Society with Clean Energy Vehicles <i>M. Nakano (Japan)</i>
12:00 – 12:20	Automatic Configuration (Plug & Produce) of Robot Systems – Data-Interpretation and Exchange <i>G. Reinhart, S. Krug (Germany)</i>	An innovative cross wedge rolling performing operation for warm forging <i>H. Kache, R. Nickel, B.-A. Behrens (Germany)</i>	Qualitative Growth and Sustainability in Organizations – An Overview <i>B. Seeberg, M. Monauni (Germany)</i>
LUNCH (Salons 4&5)			
12:30 – 14:30			

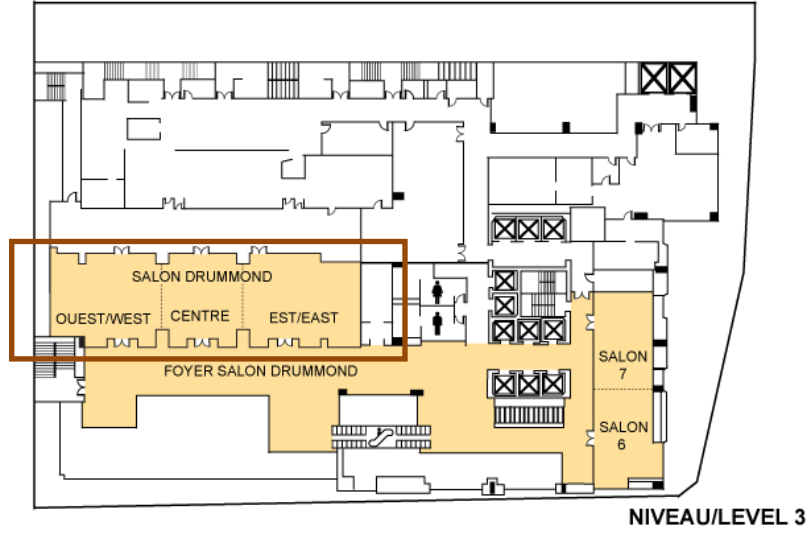
Tuesday October 4, 2011 (Cont'd)

	Salon Drummond West	Salon Drummond East	Salon Drummond Center
14:30 – 16:10	Manufacturing Systems Paradigms	Product / Production Development and Co-Development	Global Competitiveness and Sustainability
	Session 1.5 Adaptability and Emergence Chair: Prof. M. Onori	Session 2.5 Product, Process and Systems Modelling, Prototyping and Development Chair: Prof. Onur Kuzgunkaya	Session 3.5 Managing Complexity of Products, Processes and Manufacturing Systems Chair: Prof. Egon Mueller
14:30 – 14:50	Enhanced Survivability- a Framework of Self-Healing Mechanisms' Installation Using Axiomatic Design <i>D.T. Matt (Italy)</i>	System Dynamic Models and Real-time Simulation of Complex Material Flow Systems <i>S. Hoher, P. Schindler, S. Göttlich, V. Schleper, S. Röck (Germany)</i>	Enabling Car Body Customization through Automotive Framing Systems Design <i>A. Al-Zaher, W. ElMaraghy, Z. J. Pasek (Canada)</i>
14:50 – 15:10	Dealing with the unpredictable: An Evolvable Robotic Assembly Cell <i>M. Onori, P. Neves, H. Akillioglu, A. Maffei, A. Hofmann, N. Siltala (Sweden)</i>	Early identification of manufacturing process influences on product failure behaviour <i>S. Bracke, S. Haller (Germany)</i>	Parts and Assembly Equipment Complexity Dependency Matrix <i>S. N. Samy, H. ElMaraghy (Canada)</i>
15:10 – 15:30	The Manufacturing Adaptability Scorecard - a tool to analyze the benefit of autonomous production processes <i>C. Fohrholz, Norbert Gronau (Germany)</i>	The aspects of energy in the Body in White process regarding product development and production planning <i>M. Schacht, R. Schulte, F. Mantwill (Germany)</i>	Analysis of Market Demand Parameters for the Evaluation of Flexibility in Forming Technology <i>J. Avemann, S.O. Schmitt, T. Ederer, U. Lorenz, P. Groche (Germany)</i>
15:30 – 15:50	Framework for Distributed Manufacturing Systems <i>H. Nylund, K. Salminen, P. H. Andersson (Finland)</i>	Parametric Internal Matrix Structures for Components Built by Fused Deposition Modelling <i>L. Villalpando J. Urbanic (Canada)</i>	A Method for Multi-Scale Modeling of Production Systems <i>M. Neumann, C. Constantinescu, E. Westkämper (Germany)</i>
15:50 – 16:10	Conception and evaluation of an age-differentiated task analysis and screening method <i>Keil, M.; Spanner-Ulmer, B. (Germany)</i>	Efficient analysis, handling and use of customer complaints <i>T. Effey, R. Schmitt (Germany)</i>	A Modeling Approach to Analyze Redundancy in Manufacturing Systems <i>K. Windt, M.-T. Hütt, M. Meyer (Germany)</i>
16:10 – 19:30	FREE TIME		
19:30 – 22:30	CONFERENCE BANQUET (Ballroom West)		

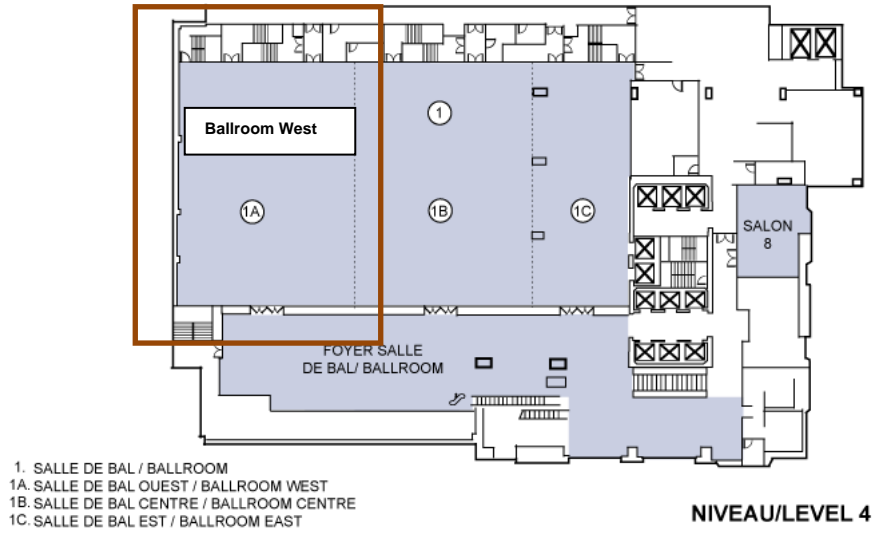
	Salon Drummond West	Salon Drummond East	Salon Drummond Center
8:30 –10:10	Enterprise and knowledge management	Product / Production Development and Co-Development	Global Competitiveness and Sustainability
	Session 1.6 Transformation and Change Management <i>Chair: Prof. J. Urbanic</i>	Session 2.6 Enablers of Change <i>Chair: Prof. Hoda ElMaraghy</i>	Session 3.6 Production & Co-operation within Global Network <i>Chair: Prof. A. Bernard</i>
08:30 – 08:50	A Consortium Leveraged Learning Network <i>V. Townsend, J. Urbanic (Canada)</i>	Change Management as an Enabler of Employee Knowledge Integration into the Design of Planning Procedures <i>K. Tracht, F. Weiker, L. Funke, L. (Germany)</i>	Ensuring Human Safety with Offline Simulation and Real-time Workspace Surveillance for Welding of Assemblies <i>C. Thomas, F. Busch, B. Kühlenkoetter, J. Deuse (Germany)</i>
08:50 – 09:10	Extension of Value Stream Design for the Simulation of Autonomous Production Systems <i>H. Theuer (Germany)</i>	Methodology for the Support of Reconfiguration Processes in the Automotive Body Shop <i>G. Reinhart, F. Meling (Germany)</i>	Adaptive, Location-based Shop Floor Control <i>G. Reinhart, M. Niehues, M. Ostgathe (Germany)</i>
09:10 – 09:30	Building Blocks in an Experimental and Digital Factory <i>E. Müller, S. Horbach (Germany)</i>	<i>Gripper with Integrated Three-Dimensional Force Detection</i> <i>K. Tracht, S. Hogreve, F. Borchers (Germany)</i>	Relocation in Production networks of a Multi-National-Enterprise <i>P. Ponton, M. Jaehne, E. Mueller (Germany)</i>
09:30 – 09:50	A new Approach to Simulation in Production Management <i>S. Lass (Germany)</i>	Change-Beneficial Process Architectures and the Human as a Change Enabler <i>D. Gossmann; C. Wagner, T. Klemke; P. Nyhuis (Germany)</i>	Influence of the European Emissions Trading Scheme on MRO Provider of the Civil Aviation Industry <i>K. Tracht, L. Funke, F. Weikert (Germany)</i>
09:50 – 10:10	Impact of Machine-Driven Capacity Constellations on Performance and Dynamics of Job-Shop Systems <i>C. Toonen, D. Lappe, R.V. Donner, B. Scholz-Reiter (Germany)</i>	Synchronisation of Distributed Configuration Tools using Feature Models <i>C. Brecher, A. Karlberger, W. Herfs (Germany)</i>	Adaptive and Selective Assembling of Microscope Objectives <i>K.-P. Zocher (Germany)</i>
10:10 – 10:40	COFFEE BREAK (Salon Drummond Foyer)		
	Salon Drummond West	Salon Drummond East	Salon Drummond Center
10:40 – 12:20	Factory and Manufacturing Systems Control	Manufacturing Systems Paradigms	Global Competitiveness and Sustainability
	Session 1.7 Knowledge Management and Learning <i>Chair: Dr. S.N. Samy</i>	Session 2.7 Adaptability and Emergence <i>Chair: Prof. A. Azab</i>	Session 3.7 Dynamic Global Manufacturing Capacity and Capabilities <i>Chair: Dr. T. AlGeddawy</i>
10:40 – 11:00	Training concept and structure of the Learning Factory advanced Industrial Engineering <i>M. Dinkelmann, P. Riffelmacher, E. Westkämper (Germany)</i>	Adaptive Process Chain Optimisation of Manufacturing Systems <i>B. Denkena, J. Henjes, L. E. Lorenzen (Germany)</i>	Shifting Bottlenecks in Production Control <i>G. Schuh, T. Potente, S. Fuchs (Germany)</i>
11:00 – 11:20	Production pilot for co-operation in factory development <i>D. Chen, T. Kjellberg, R. Svensson, G. Sivard (Sweden)</i>	Mapping the Task Time Performance of Human-Centred Assembly Systems <i>R. Folgado, E. Henriques, P. Peças (Portugal)</i>	Product Variety Management in Design and Manufacturing: Challenges and Strategies <i>T. AlGeddawy, H. ElMaraghy (Canada)</i>
11:20 – 11:40	Surrogate Modelling as an Enabler for Self Optimisation for Production Processes <i>U. Reisinger, M. Beckers, G. Buchholz, K. Willms, J. Lose, J. Perge, R. Schmitt (Germany)</i>	Early Alert Cockpits for Changeable Manufacturing Systems <i>D. Spath, S. Gerlach, O. Scholtz, M. Hämmerle, T. Krause (Portugal)</i>	Capability Assessment and Valuation of the Implementation of Lean Production Methods <i>G. Lanza, A. Jondral, J. Book (Germany)</i>
11:40 – 12:00	Supporting Project Execution for Adaptable Production Systems using a flexible software tool <i>E. Müller, U. Wagner (Germany)Application</i>	Human-centred Model for Application of Lean Production Systems in Networks <i>Y. Uygun; N. Straub (Germany)</i>	Partner Selection in Innovation Alliance <i>X. Chen, R. Riedel, E. Müller (Germany)</i>
12:00 – 12:20	Protocols for Standardising of Processes and Data in Digital Manufacturing <i>J. Schallow, K. Magenheimer, J. Deuse, G. Reinhart (Germany)</i>	A reconfiguration concept to enable versatile production in the automotive factories <i>S. U. Minhas, U. Berger (Germany)</i>	Simulation Based Detailed Planning for Agile Manufacturing <i>B. Denkena, L.-E. Lorenzen, M. Krüger, J. Schmidt (Germany)</i>
12:20-1:00	CLOSING SESSION Salon Drummond West		

Sheraton Centre, Montreal Venue Layout

Session Venue



Banquet Venue



Lunch Venue

