

CSME 2012 Technical Sessions
Engineering Information and Technology Complex (EITC)
75A Chancellors Circle, University of Manitoba
Winnipeg, Manitoba

June 4, 2012 (Monday)

8:45-9:00	Conference opening/Welcome
9:00-10:00	Keynote Speech Soft Active Materials-When Mechanics Meets Chemistry Professor Zhigang Suo, Harvard University Location: E3-270
10:20-12:00	Session MA1 ó CSME Symposium on Fluid Dynamics and Applications Part I: Boundary-Layer Flows Location: E2-110 Chair: Gregory Kopp and Mark Tachie
	Preliminary Study of Boundary Layer with Freestream Turbulence (1569545141) Xiaohua Wu ¹ ; Parviz Moin ² ¹ Royal Military College, Canada; ² Stanford University, USA
	Flow and Turbulence Characteristics of Open Channel Flow Over a Mobile Bed (1569577979) Prashanth Reddy Hanmaiahgari; Vesselina Roussinova; Ram Balachandar; Tirupati Boliseti University of Windsor, Canada
	Wall Heating Effects in Low Reynolds Number Channel Flows (1569577945) Ahmed Elatar; Kamran Siddiqui University of Western Ontario, Canada
	Turbulence in a Channel with 3D Roughness on One Wall (1569573717) Godwin F.K. Tay; David C.S. Kuhn; Mark F. Tachie University of Manitoba, Canada
	RANS/LES Analysis of Turbulent Impinging Jet with Large Stand-off Distance (1569577819) Mehrdad Shademan; Ronald M. Barron; Ram Balachandar University of Windsor, Canada
10:20-12:00	Session MA2 – CSME Symposium on Fluid Dynamics and Applications Part II: Heating, Ventilation and Air Conditioning (HVAC) Location: E2-160 Chair: Mikhail Koupriyanov and Brad Tully
	An Experimental Study of Plane Free Jet From a Vertical Slot Diffuser (1569577881) Ebenezer E. Essel ¹ ; Mark F. Tachie ¹ ; Martin Agelin-Chaab ² ; Mikhail Koupriyanov ³ ; Brad Tully ³ ¹ University of Manitoba, Canada; ² University of Ontario Institute of Technology, Canada; ³ Price Industries Limited, Canada
	Numerical Modeling of a Displacement Diffuser Using an Improved Momentum Method (1569595369) Iman Fatemi ¹ ; Bing-Chen Wang ¹ ; Shahin Nasserri Oskouie ¹ ; Mikhail Koupriyanov ² ; Brad Tully ² ¹ University of Manitoba, Canada; ² Price Industries Limited, Canada
	Numerical Study of the Velocity Field in a Room Ventilated by a Ceiling Mounted Slot Diffuser (1569589917) Shahin Nasserri Oskouie ¹ ; Bing-Chen Wang ¹ ; Iman Fatemi ¹ ; Mikhail Koupriyanov ² ; Brad Tully ² ¹ University of Manitoba, Canada; ² Price Industries Limited, Canada
	Experimental Study on Air Heating Through a Cross-Flow Minichannel Heat Exchanger (1569554279) Shahram Fotowat; Amir Fartaj; Mohammed Ismail; Md Abdul Quaiyum; Serena Askar University of Windsor, Canada
	A Numerical Study Of The Effect Of Blind Opening On The Heat Transfer Over A Simple Inner And Outer-Recessed Window-Plane Blind System (1569573931) Almounir Alkhazmi ¹ ; Patrick H. Oosthuizen ¹ ; Abdulrahim Kalendar ² ¹ Queen's University, Canada; ² College of Technological Studies, Kuwait

10:20-12:00 Session MA3 – CCToMM Symposium on Mechanisms, Machines, and Mechatronics	
Location: E2-320	Chair: M. John D. Hayes and Paul Labossiere
Characterization of a 2DOF HSLDS Vibration Isolator (1569572275) Thai Tran; Gianmarc Coppola; Kefu Liu Lakehead University, Canada	
Atlas Mecanum Wheel Jacobian Empirical Validation (1569572291) Rahman Ahmad; M. John D. Hayes; Robert G. Langlois Carleton University, Canada	
Passive Dynamic Biped Walking: Walking Machine Design and Gait Measurement (1569590251) Derek Koop; Qiong Wu University of Manitoba, Canada	
Atlas Motion Platform: Full-Scale Prototype (1569577991) M. John D. Hayes; Robert G. Langlois Carleton University, Canada	
Planar Lift and Slide Micro-Conveyor with Optical Control (1569577815) Neil Ellerington; Ted Hubbard; Marek Kujath Dalhousie University, Canada	
10:20-12:00 Session MA4 – Solid Mechanics, Dynamics and Finite Element Methods-I	
Location: E2-350	Chair: Yunhua Luo
The Use of a Co-rotational Finite-element in the Analysis of a Guyed Transmission Tower (1569561917) Yang Liu ¹ ; N. Rattanawangcharoen ¹ ; J. Kell ² ¹ University of Manitoba, Canada; ² Manitoba Hydro, Canada	
Forced Vibration Analysis of Transmission Lines: A Finite Element Approach (1569554291) Oumar R. Barry ¹ ; Jean W. Zu ¹ ; Donatus C. D. Oguamanam ² ; Der C. Lin ² ¹ University of Toronto, Canada; ² Ryerson University, Canada	
Experimental Study of Grease Lubricated Point Contact (1569579031) Augustine W.H. Wong ¹ ; Habib S. Benabdallah ¹ ; David F. James ² ¹ Royal Military College of Canada, Canada; ² University of Toronto, Canada	
Validation of DIC as an Effective Tool for Composite Tubular Braid Characterization (1569572251) Cheeun K. Leung; Garrett Melenka; David S. Nobes; Jason P. Carey University of Alberta, Canada	
Finite Element Material Modeling of UHMWPE: Rigid Body Vs Deformable Body Modeling (1569572245) Sean O'Brien ¹ ; Yunhua Luo ² ; Martin Petrak ¹ ; Eric Bohm ¹ ; Qiong Wu ² ; Jan-M Brandt ¹ ¹ Concordia Joint Replacement Group, Canada; ² University of Manitoba, Canada	

<p>13:30-15:10 Session MP1 – Symposium on Advanced Energy Systems-I Location: E2-110 Chair: Xianguo Li</p>
<p>Core-Flooding Experiment for the Bio-Conversion of Coal Into Methane (1569572277) Anil Stephen; David Nobes; Sushanta K. Mitra University of Alberta, Canada</p>
<p>Towards High Penetration of Wind Energy Through Repurposing Batteries of Plug-in Electric Vehicles (1569581043) Shahab Shokrzadeh; Eric L. Bibeau University of Manitoba, Canada</p>
<p>Cavitation Modeling for Fuel Flow in Injectors Under High-pressure Injection (1569572253) Kaushik Saha; Ehab Abu-Ramadan; Xianguo Li University of Waterloo, Canada</p>
<p>Wood Chips to Stirling Engine: A Study on Fast Pyrolysis Liquid Properties and Combustion (1569601807) Milad Zarghami; Tom Tzanetakis; Sina Moloodi; Umer Khan; Murray J. Thomson University of Toronto, Canada</p>
<p>Theoretical Investigation on Producing Work by Applying Different Refrigerants in Typical Power Cycle (1569576371) Amin Yahyaie Islamic Azad University, Iran</p>
<p>13:30-15:10 Session MP2 – The 1st Symposium on Advanced Road Vehicles-I Location: E2-125 Chair: Ebrahim Esmailzadeh</p>
<p>Design Synthesis of Articulated Heavy Vehicles with Active Safety Systems Using a Parallel Computation Technique (1569571907) Md. Manjurul Islam; Yuping He University of Ontario Institute of Technology, Canada</p>
<p>Dynamic Performance Enhancement of Small Size Racing Car (1569571721) Fereydoon Diba; Ahmad Barari; Ebrahim Esmailzadeh University of Ontario Institute of Technology, Canada</p>
<p>Largest Lyapunov Exponent as a New Indicator to Investigate the Effects of Driving Conditions on the Vehicle Stability Properties (1569571425) Sobhan Sadri; Qiong Wu University of Manitoba, Canada</p>
<p>Lateral Stability Improvement of Car-Trailer Systems Using Active Trailer Braking Control (1569575587) Tao Sun; Ebrahim Esmailzadeh; Jine Ren; Yuping He University of Ontario Institute of Technology, Canada</p>
<p>Fuzzy Control System Design for Automatic Path Control of a Rotating Car (1569572265) Avesta Goodarzi¹; Ebrahim Esmailzadeh²; Amir Khajepour¹; F. Aghajani³ ¹University of Waterloo, Canada; ²University of Ontario Institute of Technology, Canada; ³Iran University of Science and Technology, Iran</p>

<p>13:30-15:10 Session MP3 – Engineering Analysis and Design Location: E2-320 Chair: Il-Yong Kim</p>
<p>Modular Discretization for a Morphing Wingtip (1569559543) Joshua Morley; Kamran Behdinin University of Toronto, Canada</p>
<p>Thermal Optimization of an Electric Vehicle Battery Cooling Plate with Multiple Curved Channels (1569571427) Ben W. Banks; Il-Yong Kim Queen's University, Canada</p>
<p>Feasibility Assessment of a Cost-Effective Type-Specific Small Aircraft Flight Simulator (1569572327) Suzanne Swaine; Jonathan Plumpton; Jamie Leveille; Robert Langlois Carleton University, Canada</p>
<p>Optimal Structural Design of Complicated Mechanical Products Based on Data Mining and Multi-Level Partitioning Strategy (1569576489) Xing Han; Jing Tao Hubei Polytechnic University, P.R. China</p>
<p>Driving Essential Tolerance for Manufacturing Minimum Flow with New Material: A Numerical Approach (1569577345) Sina Heydari; Mohsen Kahrom Ferdowsi University of Mashhad, Iran</p>
<p>13:30-15:10 Session MP4 – Solid Mechanics, Dynamics and Finite Element Methods–II Location: E2-350 Chair: Yogendra Nath</p>
<p>Experimental Study on Nonlinear Vibration of Cylindrical Shells (1569556081) Ajay Kumar¹; Badri P. Patel¹; Yogendra Nath² Indian Institute of Technology Delhi, India; University of Toronto, Canada</p>
<p>Buckling Criteria of FGM Beams Using Reproducing Kernel Particle Method (1569577877) Mohammad Taghi Ahmadian¹; Ahmad Barari²; Reza Saljooghi¹ ¹Sharif University of Technology, Iran; ²University of Ontario Institute of Technology, Canada</p>
<p>Modeling and Simulation of Passive Dynamic Walking (1569577351) Derek Koop; Qiong Wu University of Manitoba, Canada</p>
<p>Dynamic Modeling of a Single-Flexible-Link Spatial Manipulator Using Curvature-Based Finite Element Method (1569567921) Mehrdad Farid¹; William L. Cleghorn² ¹Shiraz University, Iran; ²University of Toronto, Canada</p>
<p>Kinematic and Static Analysis of a New Parallel Tensegrity Mechanism (1569574357) Bahman Nouri Rahmat Abadi; Mehrdad Farid; Mojtaba Mahzoon Shiraz University, Iran</p>

<p>15:30-17:10 Session ME1 – Biomechanics-I Location: E2-110 Chair: LePing Li</p>
<p>A Finite Element Model with Improved Material Biofidelity for Brain Injury Analysis (1569557373) Zhaoyang Liang; Yunhua Luo University of Manitoba, Canada</p>
<p>Deformation Prediction of Biological Cells in Cell Injection Experiment Using Support Vector Machine Modeling (1569573405) Ali A. Abbasi¹; Ahmad Barari²; Mohammad Taghi Ahmadian¹ ¹Sharif University of Technology, Iran; ²University of Ontario Institute of Technology, Canada</p>
<p>Effect of Depth-dependent Cartilage Properties on Cartilage-bone Interface Mechanics (1569553915) Yaghoub Dabiri; Leping Li University of Calgary, Canada</p>
<p>Development of DXA-based Patient Specific Finite Element Model for Longitudinal Monitoring of Osteoporotic Fracture Risk (1569567561) Zannatul Ferdous; Yunhua Luo; Qiang Zhang; William D. Leslie University of Manitoba, Canada</p>
<p>Numerical Simulation of Abdominal Aortic Aneurysm Rupture (1569577237) Richard J. Lozowy; David C.S. Kuhn; April J. Boyd; Gordon P. Kulbisky University of Manitoba, Canada</p>
<p>15:30-17:10 Session ME2 – Modeling and Simulation of Design, Manufacturing and Healthcare Systems-I Location: E2-125 Chair: Qingjin Peng</p>
<p>Solving No-Wait Flow Shop Problem with Sequence Dependent Setup Times (1569567175) Hamed Samarghandi; Tarek Y. ElMekkawy University of Manitoba, Canada</p>
<p>Effective Simulation Modeling for Healthcare Improvement (1569573271) Qingjin Peng; Y. Zhao; A. Kaushal; E. Weldon; T. Strome; M. Zhang; A. Chochinov University of Manitoba, Canada</p>
<p>The Application of Best Practices Within Health Care Scheduling Research to a Discrete Event Simulation of Canadian Military Phase II Flight Training (1569578493) Vern Greenway Canadian Forces School of Aerospace Studies, Canada</p>
<p>Facilities Planning and Modeling for Healthcare Systems: A Review (1569577845) Hamid Afshari; Qingjin Peng University of Manitoba, Canada</p>
<p>15:30-17:10 Session ME3 – General Location: E2-320 Chair: David Naylor</p>
<p>Using Solar Troughs for Heat Applications in Cold Climates (1569577809) Faezeh Mosallat¹; Eric L. Bibeau¹; Tom Molinski² ¹University of Manitoba, Canada; ²Manitoba Hydro, Canada</p>
<p>Feasibility Study of Residential Tri-generation System Based on LiCl-H₂O Adsorption Chiller (1569577965) Navid Ekrami; Zannatul M. Hasib; Seth B. Dworkin; Alan S. Fung; David Naylor Ryerson University, Canada</p>
<p>A Typical Meteorological Year Generation for Sokoto, Nigeria (1569573435) Olayinka S. Ohunakin¹; Muyiwa S. Adaramola²; Olanrewaju M. Oyewola³; Richard L. Fagbenle³ ¹Covenant University, Nigeria; ²Norwegian University of Science and Technology, Norway; ³University of Ibadan, Nigeria</p>
<p>Oil and Gas Production and the Environment: Current Trends in Canada and the United States of America (1569577353) James K. Arthur; Baafour Nyantekyi-Kwakye; Kwadwo P. Owusu University of Manitoba, Canada</p>
<p>Design and Fabrication Testing Machine to Measure the Wear Rate of the Material (1569569097) Amal E. Nassar; Eman E. Nassar Higher Technological Institute, Egypt</p>

June 5, 2012 (Tuesday)

9:00-10:00	Keynote Speech Roughness Effects on Wall-Bounded Turbulent Flows Professor Karen A. Flack, United States Naval Academy Location: E3-270
10:20-12:00	Session TA1 ó CSME Symposium on Fluid Dynamics and Applications Part III: Aerodynamics Location: E2-110 Chair: Xiaohua Wu and Bing-Chen Wang
	The Wake of a Freely Flying European Starling (1569573289) Adam J. Kirchhefer ¹ ; Gregory A. Kopp ¹ ; Roi Gurka ² ¹ University of Western Ontario, Canada; ² Ben-Gurion University, Israel
	Flow Around a Finite Circular Cylinder with a Splitter Plate (1569567529) Adeola Igbalajobi; John F. McClean; David Sumner; Donald J. Bergstrom University of Saskatchewan, Canada
	Two-Dimensional Circular Cylinders in Tandem At Moderate Reynolds Numbers (1569578595) Ali Wakil; Sheldon I. Green University of British Columbia, Canada
	A Comparative Computational Study of Ducted Vertical-Axis Wind Turbines (1569571879) Pooya Ahmadi; Marius Paraschivoiu Concordia University, Canada
	Proper Orthogonal Decomposition of Flow Around a S1223 Airfoil (1569577769) Sintia Bejatovic ¹ ; Lynne Kincaid ² ; James K. Arthur ² ; Mark F. Tachie ² ¹ Queen's University, Canada; ² University of Manitoba, Canada
10:20-12:00	Session TA2 ó Thermal-Fluids Engineering (Part I) Location: E2-160 Chair: Patrick H. Oosthuizen and David Kuhn
	Thermal-Hydraulic-Mechanics Responses of Steam Injection in Heavy Oil Reservoir Simulation (1569553229) Feng Sun; Shi-feng Xue China University of Petroleum, China
	Mean Flow Characteristics of a Buried Polyvinyl Chloride Pipe (1569576887) Olanrewaju M. Oyewola ¹ ; Nosa U. Osawe ¹ ; Muyiwa S. Adaramola ² ¹ University of Ibadan, Nigeria; ² Norwegian University of Science and Technology, Norway
	Feasibility Studies of a Novel Atmospheric Ice Mitigation Technique for Wind Turbines (1569572005) Kwadwo Owusu; Grace Hunt; Soheil Shahidinejad; Eric L. Bibeau University of Manitoba, Canada
	Micro-Pillar Wall Shear Stress Measurement for Internal Laminar Flow: 2D Analytical Model (1569573545) Anne-Marie Dufour; Marie-Isabelle Farinas; László I. Kiss Université du Québec à Chicoutimi, Canada
	Impact of Preset Pitch Angle on the Power Coefficient for Conditions Representative of Vertical Hydrokinetic Turbine Arrays (1569559829) Amir H. Birjandi; Eric L. Bibeau; Vijay Chatoorgoon University of Manitoba, Canada

<p>10:20-12:00 Session TA3 – Advanced Control, Robotics, Mechatronics and Manufacturing -Advanced Control and Applications</p> <p>Location: E2-360 Chair: Yang Shi and Tarek ElMekkawy</p>
<p>Experimental Evaluation of an Intelligent Controller for Positioning of Pneumatic Actuators (1569588899) Naghmeah Garmsiri; Nariman Sepehri University of Manitoba, Canada</p>
<p>Development of a Low Cost Educational Mobile Robot Testbed Controlled in the MATLAB/Simulink Environment (1569578039) Mahyar Abdolhosseini; Jian-Nan Zheng; Youmin M. Zhang; C. A. Rabbath Concordia University, Canada</p>
<p>Repair of a Notched Beam Subjected to Dynamic Loading with Piezoelectric Patches (1569577741) Nan Wu; Quan Wang University of Manitoba, Canada</p>
<p>An Energy Efficient Optimal Operation Strategy Design for CCHP Systems (1569577371) Mingxi Liu; Yang Shi University of Victoria, Canada</p>
<p>Direct User-to-User Haptic Interactions Via Remote Dynamic Proxies Over Wave-domain Communications (1569572313) Ramtin Rakhsha; Daniela Constantinescu University of Victoria, Canada</p>
<p>10:20-12:00 Session TA4 – Solid Mechanics, Dynamics and Finite Element Methods-IV</p> <p>Location: E2-350 Chair: Paul Labossiere</p>
<p>Finite Element Based Continuum to Atomistic Coupling At Finite Temperature (1569571451) Vincent Iacobellis; Kamran Behdinan University of Toronto, Canada</p>
<p>Vibrational Analysis of Helically Coiled Carbon Nanotubes Considering Nonlocal Theorem Using Spatial Curved Beam Theory (1569570617) Seyedeh Zahra Mohammadi; Mehrdad Farid Shiraz University, Iran</p>
<p>Vibration Analysis of Curved Carbon Nanotubes Conveying Viscous Fluid Considering Nonlocal Effects (1569573261) Hanieh Karami; Mehrdad Farid Shiraz University, Iran</p>
<p>Nonlocal Damage Modeling of Laminated Cylindrical Panels (1569571591) Ankur K. Gupta¹; Badri P. Patel¹; Yogendra Nath² ¹Indian Institute of Technology Delhi, India; ²University of Toronto, Canada</p>
<p>A Comparative Study of Analytical and FEM Based Vibration Analysis of PCLD Treated Beams with Different Boundary Conditions (1569568853) Rajiv Sharma National Institute of Technology Jalandhar, India</p>

**13:30-15:10 Session TP1 ó CSME Symposium on Fluid Dynamics and Applications
Part IV: Two-Phase Flows**

Location: E2-110 Chair: Özden F. Turan and Bing-Chen Wang

Calibration Tests for an Experimental Study of Steam Generator Tube Loading During Blowdown
(1569572257)

Ouajih Hamouda¹; David S. Weaver¹; Jovica Riznic²

¹McMaster University, Canada; ²Canadian Nuclear Safety Commission, Canada

Effect of Inlet Restriction on Flow Boiling Heat Transfer in a Single Microtube (1569567651)

YanFeng Fan; Ibrahim Hassan

Concordia University, Canada

Experiments on Flow Oscillations and Burnout in Subchannels (1569580251)

Vijay Chatoorgoon

University of Manitoba, Canada

A New Model for the Steam Parameters in the Steam Injection of Horizontal Wells (1569552661)

Haowei Chen; Haijing Wang; Shifeng Xue; Bingjia Huang

China University of Petroleum, China

Laminar Film Condensation From Moist Air in Vertical Tubes (1569578495)

Foad Hassaninejadfarahani; Scott J. Ormiston

University of Manitoba, Canada

13:30-15:10 Session TP2 – The 1st Symposium on Advanced Road Vehicles-II

Location: E2-125 Chair: Avesta Goodarzi and Caixia Yang

Validation of Loading Profiles for Accelerated Durability Testing of Ground Vehicle Components
(1569568709)

A.K.M. Shafiullah; Qiong Wu

University of Manitoba, Canada

Dynamic Study and Stress Analysis of an Aluminum Bus Frame (1569545399)

Mohamed Bouazara¹; Fatma Rebaïne¹; Marc J. Richard²; Fouad Erchiqui³

¹University of Quebec at Chicoutimi, Canada; ²Laval University, Canada; ³University of Quebec at Abitibi-Témiscamingue, Canada

Multi-Objective Optimization of Vehicle Structure Under Various Loading Condition Using Simple Structural Beam Frame Approach (1569571703)

Steven Tebby; Ahmad Barari; Ebrahim Esmailzadeh

University of Ontario Institute of Technology, Canada

Winnipeg Transit Dataset: Generation, Analysis, and Summary Results (1569570661)

Caixia Yang; Eric L. Bibeau

University of Manitoba, Canada

Active Vibration Absorber for Vibration Control of Long-Wheelbase Vehicle Structure (1569572267)

Avesta Goodarzi¹; Ebrahim Esmailzadeh²; Amir Khajepour¹; N. Pandarathil³

¹University of Waterloo, Canada; ²University of Ontario Institute of Technology, Canada; ³Iran University of Science and Technology, Iran

13:30-15:10 Session TP3 – Advanced Control, Robotics, Mechatronics and Manufacturing - Manufacturing & Robotics-I

Location: E2-320 Chair: Subramaniam Balakrishnan

Object Grasping and Handling Using Visual Servoing in Mobile Manipulation (1569554287)

Haixiang Lang; M. Tahir Khan; Clarence W. de Silva
University of British Columbia, Canada

A Systematic Framework for the Gait Planning of a Five-Link Bipedal Robot (1569571557)

Mansoor Alghooneh; Qiong Wu
University of Manitoba, Canada

Simulation Software for Performance Comparison of Pneumatic Servo Position Controllers Under Various Actuators and Valve Configurations (1569588901)

Ramhuzaini Abd. Rahman; Nariman Sepehri
University of Manitoba, Canada

A Comparative Study of Robust Control Design Techniques for Hub Angle Regulation and End-Effector Vibration Control for A Single Link Flexible Manipulator (1569569359)

Rajeev K. Vashishat
National Institute of Technology Jalandhar, India

13:30-15:10 Session TP4 - Symposium on Materials Technology in Mechanical Engineering

Location: E2-350 Chair: Chul B. Park and Olanrewaju Ojo

Giant Deformation and Failure Modes in a Dielectric Elastomer Actuator (1569554043)

Jian Zhu¹; Zhigang Suo¹; Matthias Kolloche²; Guggi Kofod²
¹Harvard University, USA; ²University of Potsdam, Germany

Heat Input Dependence of Weld HAZ Cracking in Aerospace Superalloy Haynes 282 (1569571203)

Lawrence O. Osoba; Zhiquo Gao; Olanrewaju A. Ojo
University of Manitoba, Canada

Degradable Bio-mimicking Hydrogel for Skin Tissue Engineering (1569577385)

Junbin Shi; Wen Zhong; Malcolm Xing
University of Manitoba, Canada

Mechanical Properties of Cellulose Nanofiber Reinforced Polylactic Acid Biocomposites and Their Foams (1569579241)

WeiDan Ding; Takashi Kuboki; Na Zhao; Tero Malm; Chul B. Park; Mohini Sain
University of Toronto, Canada

Low Cycle Fatigue and Fatigue Crack Propagation Behaviour of a Newly Developed Aerospace Superalloy Haynes 282 (1569571733)

Richard A. Buckson; Olanrewaju A. Ojo
University of Manitoba, Canada

15:30-17:10 Session TE1 – CSME Symposium on Fluid Dynamics and Applications Part V: Convection and Porous Media	
Location: E2-110	Chair: Ibrahim Hassan and Bing-Chen Wang
A Numerical Study of Natural Convective Flow Through a Vertical Isothermal Cylindrical Channel with an Unheated Upper Section (1569572283) Patrick H. Oosthuizen Queen's University, Canada	
The Solids Fluctuating Velocity and Volume Fraction Profiles in Gas-Solid Flow as Predicted by a Two-Fluid Model (1569580645) Ashraf Zaman; Donald J. Bergstrom University of Saskatchewan, Canada	
Velocity Measurements of a Coupled Parallel Porous Medium - Free Flow (1569577355) James K. Arthur; Douglas W. Ruth; Mark F. Tachie University of Manitoba, Canada	
Atomization of Suspension Using an Effervescent Nozzle (1569579023) Hamed Farshchi Tabrizi; Ali Dolatabadi Concordia University, Canada	
Low Reynolds Number Open Channel Turbulent Boundary Layer (1569577539) Afua A. Ampadu-Mintah; Mark F. Tachie University of Manitoba, Canada	
15:30-17:10 Session TE2 – Symposium on Advanced Energy Systems-I Location: E2-125 Chair: Sushanta K. Mitra	
Novel Technique for Core Flooding Experiments (1569571869) Aleksy V. Baldygin; David S. Nobes; Sushanta K. Mitra University of Alberta, Canada	
Parameters Affecting Viscosity of Manure Simulant Fluids (1569579021) Daniel A. Balcha ¹ ; Eric L. Bibeau ¹ ; Anurag Kumar ² ¹ University of Manitoba, Canada; ² Institute of Technology Madras, India	
Numerical Investigation of Water Transport and Dynamics in a Novel PEMFC Channel (1569570235) Yanzhou Qin ^{1,2} ; Qing Du ² ; Yan Yin ² ; Kui Jiao ² ; Xianguo Li ^{1,2} ¹ University of Waterloo, Canada; ² Tianjin University, China	
Pinch Methodology and Heat Recovery From Molten Cuprous Chloride for Thermochemical Hydrogen Production (1569577893) Samane Ghandehariun; Greg F. Naterer; Marc A. Rosen University of Ontario Institute of Technology, Canada	
Spiral Thermal Storage for Solar Troughs in Cold Weather Heating (1569612195) Kevin T. Morgenstern ¹ ; Eric L. Bibeau ¹ ; Tom Molinski ² ¹ University of Manitoba, Canada; ² Manitoba Hydro, Canada	

15:30-17:10 Session TE3 – Advanced Control, Robotics, Mechatronics and Manufacturing - Control and Mechatronics-II	
Location: E2-320	Chair: Ya-Jun Pan and Caixia Yang
Stable Bilateral Teleoperation Over Networks with Random Delays (1569555431) Jian Wu; Bingxian Mu; Yang Shi University of Victoria, Canada	
DGPS-Based Localization for Outdoor Mobile Robot Path Following (1569566009) Leslie Ssebazza; Ya-Jun Pan Dalhousie University, Canada	
Bilateral Impedance Control in Haptic Teleoperation with Sliding Mode Control (1569554203) Yanjun Wang ¹ ; Clarence W. de Silva ² ¹ Industrial Automation Laboratory, Canada; ² University of British Columbia, Canada	
Pressure Control of Hydraulic Actuators Using Quantitative Feedback Theory (1569589569) Masoumeh Esfandiari; Nariman Sepehri University of Manitoba, Canada	
Grey Box System Identification and Optimal Control of a Single Link Flexible Manipulator with ACLD Treatment (1569568837) Rajiv Kumar National Institute of Technology Jalandhar, India	
15:30-17:10 Session TE4 – Symposium on Recent Developments in Fatigue and Fracture of Engineering Materials and Structures-I	
Location: E2-350	Chair: Rajesh Prasannavenkatesan
Application of Progressive Failure to Pin-Loaded Unidirectional-Woven Composite Joints (1569544621) Olanrewaju Aluko ¹ ; Horace Whitworth ² ¹ University of Michigan-Flint, USA; ² Howard University, USA	
Thermo-Mechanical Fatigue Behaviour of a Single Crystal Ni-Based Superalloy (1569571785) Jonathan Durocher ¹ ; Norman L. Richards ² ; John R. Cahoon ² ¹ Standard Aero Limited, Canada; ² University of Manitoba, Canada	
Microstructurally Small Crack Formation and Growth in Notched Component with Non-Metallic Inclusions (1569575775) Gbadebo M. Owolabi ¹ ; Li Shi ¹ ; Rajesh Prasannavenkatesan ² ¹ Howard University, USA; ² QuesTek Innovations LLC, USA	
Developing Fatigue Interest in Academic Programs (1569572203) Richard E. Dippery ¹ ; Thomas J. Curtin ² ¹ Kettering University, USA; ² Computational Mechanics Inc, USA	

June 6, 2012 (Wednesday)

9:00-10:00	Keynote Speech Research and Development in Homecare Robotics Professor Clarence W. de Silva, University of British Columbia Location: E3-270
10:20-12:00 Session WA1 ó Thermal-Fluids Engineering (Part II) Location: E2-110	Chair: Ram Balachandar and David Kuhn
	Particle Flow Damper Design Using DEM (1569595659) Sergiu C. Dragomir ¹ ; Matthew D. Sinnott ² ; S. Eren Semercigil ³ ; Özden F. Turan ³ ¹ Victoria University, Australia; ² CSIRO Mathematics, Informatics and Statistic, Australia; ³ H-G Research and Consulting, Australia
	Improving the Performance of a Trapezoidal Sloshing Vibration Absorber Using SPH (1569595683) Sean Kennan ¹ ; Adam P. Marsh ² ; Mahesh Prakash ³ ; S. Eren Semercigil ⁴ ; Özden F. Turan ⁴ ¹ MMG Minerals and Metals, Australia; ² TSG Consulting, Australia; ³ CSIRO Mathematics, Informatics and Statistic, Australia; ⁴ H-G Research and Consulting, Australia
	Numerical Investigation of Engine Oil Through Minichannel Heat Exchanger (1569553871) Mohammed Ismail; Amir Fartaj; Mo Karimi; Shahram Fotowat; Mohammad Saadi University of Windsor, Canada
	A Programmable Logic Controller Emulator with Automatic Algorithm-Switching for Computational Fluid Dynamics Using OpenFOAM (1569559763) David L.F. Gaden; Eric L. Bibeau University of Manitoba, Canada
	Different Grid Strategies Toward Numerical Simulation of a Plunging Airfoil (1569612185) Mohammad Saeedi ¹ ; F. Ajalli ² ; M. Mani ² ; Shahin N. Oskouie ¹ ¹ University of Manitoba, Canada; ² Amirkabir University of Technology, Iran
10:20-12:00 Session WA3 – Advanced Control, Robotics, Mechatronics and Manufacturing - Control and Mechatronics-III	
Location: E2-399	Chair: Paul Labossiere
	Towards Online Internal Leakage Detection in Hydraulic Actuators (1569589553) Morgan J. May; Nariman Sepehri; Amin Y. Goharrizi; Witold Kinsner University of Manitoba, Canada
	Robust Control of Bilateral Teleoperation Under Human Operator and Environmental Uncertainty (1569554209) Yanjun Wang; Clarence W. de Silva University of British Columbia, Canada
	QFT-Based Robust Yaw Control of Agricultural Tractors Having Automatic Steering System (1569588905) Javad Robati ¹ ; Hossein Navid ² ; Amir Rikhtegar Ghiasi ² ; Nariman Sepehri ¹ ¹ University of Manitoba, Canada; ² University of Tabriz, Iran
	Hybrid Vibration Control of Rotating Beams Treated with Layer Damping Treatment (1569569357) Rajiv Sharma National Institute of Technology Jalandhar, India

10:20-12:00 Session WA4 – Symposium on Recent Developments in Fatigue and Fracture of Engineering Materials and Structures-II	
Location: E2-350	Chair: Gbadebo Owolabi
Three-dimensional Modeling of Fatigue Initiation in Hierarchical Martensitic Steel Microstructures (1569571859) Rajesh Prasannavenkatesan ¹ ; Heng-Jeng Jou ¹ ; David L. McDowell ² ¹ QuesTek Innovations LLC, USA; ² Georgia Institute of Technology, USA	
Phase Angle Effect on Multiaxial Behaviour and Fatigue Life of AZ31B Manganese Extrusion (1569556021) Jafar Albinmousa ¹ ; Hamid Jahed ² ; Steve Lambert ² ¹ King Fahd University of Petroleum and Minerals, Saudi Arabia; ² University of Waterloo, Canada	
Model of Crack Propagation in Impact-Damaged Pressurized Aerospace Structure (1569577911) Igor Telichev; Frederick Cook University of Manitoba, Canada	
Mechanical Behavior of Overlap-Welded of Dissimilar Steels (Structural-Stainless) Under Monotonic Load (1569558915) Andres L. Garcia Fuentes ¹ ; Magaly Ramos ¹ ; Leiry Centeno ¹ ; Alberto Velazquez del Rosario ² ¹ IUT RC, Venezuela; ² ISMM, Cuba	
13:30-15:10 Session WP1 – Modeling and Simulation of Design, Manufacturing and Healthcare Systems-II	
Location: E2-110	Chair: Qingjin Peng
On the Two-Machine No-Wait Job Shop Problem with Separable Setup Times and Single Server Constraints (1569567179) Hamed Samarghandi; Tarek ElMekkawy University of Manitoba, Canada	
A Meta-heuristic Approach to Solve Identical Parallel Machines Scheduling with Release Time (1569577811) Sanjana Shahnawaz; Tarek ElMekkawy; Qingjin Peng University of Manitoba, Canada	
A Smart Design Automation Process Model for Pressure Vessels (1569578041) Yongsheng Ma; G.P. Gujarathi University of Alberta, Canada	
13:30-15:10 Session WP2 – Biomechanics-II	
Location: E2-125	Chair: Yunhua Luo
Prediction of Bone Remodeling Around a Novel Dental Implant with an Elastomeric Internal Layer, Simulating Periodontal Ligaments' Function (1569578193) Golsa Ghanati ¹ ; Mohammad Taghi Ahmadian ¹ ; Keikhosrow Firoozbakhsh ¹ ; Behrouz Rouzbeh ² ; Ahmad Barari ³ ¹ Sharif University of Technology, Iran; ² Hygiene Center, Iran; ³ University of Ontario Institute of Technology, Canada	
Three Dimensional Deformation of Orthodontic Brackets (1569571779) Garrett W. Melenka; David S. Nobes; Jason P. Carey University of Alberta, Canada	
Prediction of Impact Force in Falling of the Elderly by Subject Specific Multibody Dynamics Model Developed From Whole-Body DXA Image (1569573351) Mehrisadat M. Alamdari ¹ ; Yunhua Luo ¹ ; Peidong Sun ² ; Jun Ouyang ² ¹ University of Manitoba, Canada; ² Southern Medical University, China	
Generalization of the Graham Shipboard Human Postural Stability Model (1569595021) Heather M. Morris ¹ ; Robert G. Langlois ¹ ; James L. Colwell ² ¹ Carleton University, Canada; ² Defence Research and Development Canada, Canada	
Biological Cells Modeling Under Needle Injection Experiment (1569573415) Ali A. Abbasi ¹ ; Mohammad Taghi Ahmadian ¹ ; Ahmad Barari ² ¹ Sharif University of Technology, Iran; ² University of Ontario Institute of Technology, Canada	

13:30-15:10 Session WP3 – Advanced Control, Robotics, Mechatronics and Manufacturing - Manufacturing & Robotics-III	
Location: E2-399	Chair: Tarek Y. ElMekkawy
Flexural Strength and Thermal Conductivity Characteristics of Injection Molded Microcellular PLA Composites with High Void Fraction (1569572309) Amir Ameli; Amin Abbaszadegan; Davoud Jahani; Chul B. Park University of Toronto, Canada	
Deadlock-free Scheduling for Flexible Manufacturing Cells with Dual-Gripper Robot (1569580059) Nabil El Khairi; Tarek Y. ElMekkawy; Subramaniam Balakrishnan University of Manitoba, Canada	
Controllability of Surface Roughness by Adaptive Slicing in Rapid Prototyping Manufacture (1569577775) Snahungshu Sikder; Ahmad Barari; Hossam Kishawy University of Ontario Institute of Technology, Canada	
Investigate the Characterization of the Machine Tool Spindle Stiffness in Radial Direction for Precise Monitoring of Cutting Forces for Intelligent Machining (1569554065) Ahmed A.D. Sarhan ¹ ; Atsushi Matsubara ² ¹ University of Malaya, Malaysia; ² Kyoto University, Japan	
13:30-15:10 Session WP4 – Advanced Control, Robotics, Mechatronics and Manufacturing - Manufacturing & Robotics-IV	
Location: E2-350	Chair: Homayoun Najjaran and Christine Wu
Predictive Control for Image-Based Visual Servoing in Mobile Manipulation (1569554283) Haoxiang Lang; Muhammad Khan; Clarence W. de Silva University of British Columbia, Canada	
Design of a Robot for MRI Guided Neurosurgery and Applications (1569570391) Vikram Banthia; Subramaniam Balakrishnan University of Manitoba, Canada	
Multiagent Exploration Strategy Using Consensus-based Auction Algorithm (1569553949) Morteza Farrokhsiar; Homayoun Najjaran The University of British Columbia, Canada	
Calibration of Four-Wheeled Omnidirectional Mobile Robots (1569587347) Yaser Maddahi ¹ ; Nariman Sepehri ¹ ; Ali Maddahi ² ¹ University of Manitoba, Canada; ² K. N. Toosi University of Technology, Iran	
Digital Map Based Navigation Scheme for Autonomous Vehicle Using Differential GPS (1569572375) Balasubramaniam Ramakrishnan; Ya-Jun Pan Dalhousie University, Canada	