

FINAL PROGRAM

The conference will take place at the “Faculté des Sciences de l’Activité Physique” (Building A8) at Université de Sherbrooke, on the main campus (2500 Boulevard de l’Université, Sherbrooke (QC), J1K 2R1).

Sunday, May 26, 2019

6:00 p.m. – 8:00 p.m.: Registration desk open (building A8, level 3, room A8-345)

Monday, May 27, 2019

8:40 – 9:00 am: Opening ceremony (room A8-334)

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| Plenary session 1 | | 9:00 – 10:00 am |
| Room A8-334 | | Chair: Philippe Micheau |
| 9:00 am | Prof. Philippe Jovet (University of Montreal) <i>“From flow signal acquisition to incorporation into computerized clinical decision systems for human respiratory support”</i> | |

10:00 – 10:20 a.m.: Refreshment break (A8, level 3)

10:20 – 12:00 a.m.: Parallel sessions

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|--------------------------------|---|---|
| Symposium on respiratory flows | | 10:20 – 12:00 am |
| Room A8-360 | | Chair: Philippe Micheau & Julien Favier |
| 10:20 am | Renaud Tissier, Matthias Kohlhauer (Ecole Nationale Vétérinaire d'Alfort), Mathieu Nadeau, Philippe Micheau (Université de Sherbrooke) <i>“15 years of France-Canada research in total liquid ventilation for fast induction of hypothermia”</i> | |
| 10:40 am | Jonathan Vandamme, Mathieu Nadeau, Julien Mousseau, Jean-Paul Praud, Philippe Micheau (Université de Sherbrooke) <i>« Pressure pause in total liquid ventilation »</i> | |
| 11:00 am | Agus P. Sasmito (McGill University) <i>“Ventilation and respiratory flow in deep underground mines”</i> | |
| 11:20 am | Dalma Schieppati (Polytechnique Montréal), Federico Galli (Università degli Studi di Milano), Marco Giulio Rigamonti, Daria Camilla Boffito (Polytechnique Montréal) <i>“The novel mechano-acoustic Frequencer™ and hyposaline solutions improve mucous visco-elasticity”</i> | |
| 11:40 am | Cyril Karamaoun (Université Côte d'Azur), Benjamin Sobac (Université libre de Bruxelles), Benjamin Mauroy (Université Côte d'Azur), Alain Van Muylem, Benoît Haut (Université libre de Bruxelles), <i>“New analysis of the mechanisms controlling the bronchial mucus balance”</i> | |
| 12:00 am | Andy Adler (Carleton University) <i>“Measuring regional dynamics of ventilation and perfusion using electrical impedance tomography”</i> | |

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|---------------------------------|---|-------------------|
| Session: Dynamics and control 1 | | 10:20 – 12:00 am |
| Room A8-334 | | Chair: Arun Misra |
| 10:20 am | Ahmed Abdelbaki, Michael Paidoussis, Arun Misra (McGill University) <i>“Nonlinear dynamics of a hanging cantilevered pipe discharging fluid with external axial flow over its upper portion”</i> | |
| 10:40 am | Xiaoyang Zhang, Mojtaba Kheiri, Wen-Fang Xie (Concordia University) <i>“Adaptive control of a two-dimensional nonlinear wing with structural stiffness and damping uncertainties”</i> | |
| 11:00 am | Muhammad F.J. Butt, Michael Paidoussis, Meyer Nahon (McGill University) <i>“Dynamics of a confined pipe aspirating fluid: an experimental investigation”</i> | |
| 11:20 am | Prmod Kumar, Rajamohan Ganesan (Concordia University) <i>“Flap and lag non-linear vibrations of long and short beams”</i> | |
| 11:40 am | Patrick Domingo, Anton Kuzntcov, Igor Telichev (University of Manitoba) <i>“Study of Roof Emergency Exit Behaviour During Motorcoach Rollover”</i> | |

27th Canadian Congress of Applied Mechanics
May 27-30, 2019 - Sherbrooke (QC), Canada

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| Symposium on gender diversity (in French) | | 10:20 – 12:00 am |
| Room A2-1016 | | Chair: Eve Langelier, Fatima Bousadra, Sophie Rochette |
| 10:20 am | Mot de bienvenue | |
| <i>Contexte scolaire: du primaire au secondaire</i> | | |
| 10:35 am | Fatima Bousadra (Université de Sherbrooke) « <i>La formation à l'enseignement de la technologie industrielle dans un contexte scolaire</i> » | |
| 11:05 am | Abdelkrim Hasni (Université de Sherbrooke), Patrice Potvin (Université du Québec à Montréal) « <i>L'intérêt des élèves envers les sciences et la technologie</i> » | |
| 11:35 am | Mélicca Lemaire (Université de Montréal) « <i>La promotion des sciences et la technologie en milieu défavorisé</i> » | |

12:00 – 13:30 p.m.: Lunch break (UdeS cafeteria)

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| Plenary session 2 | | 13:30 – 14:30 am |
| Room A8-334 | | Chair: Sébastien Poncet |
| 13:30 pm | Prof. Julien Sylvestre (Université de Sherbrooke) "Blending Sensing and Computing in MEMS Devices" | |

14:30 – 15:30 a.m.: Parallel sessions

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|--------------------------------|---|---|
| Symposium on respiratory flows | | 14:30 – 15:30 pm |
| Room A8-360 | | Chair: Philippe Micheau & Julien Favier |
| 14:30 pm | Julien Favier, Sylvain Chateau, Umberto D'Ortona, Sébastien Poncet (Aix-Marseille Université) "Recent numerical results on the coupling between beating cilia and hydrodynamics in mucociliary transport" | |
| 14:50 pm | Alexandra Buess, Benjamin Sobac (Université libre de Bruxelles), Benjamin Mauroy (Université Côte d'Azur), Benoît Haut (Université libre de Bruxelles) "Energy dissipation in an asymmetric tracheobronchial tree: a CFD analysis" | |
| 15:10 pm | Jonathan Stéphano, Benjamin Mauroy (Université Côte d'Azur) "Modeling shear stress distribution in a deformable airway tree" | |

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| Session: Computational solid mechanics | | 14:30 – 15:30 pm |
| Room A8-334 | | Chair: Andrew Warkentin |
| 14:30 pm | Danika Couture-Peck, André Garon (Polytechnique Montreal) "Mesh Adaptation for Moving/Deforming Bodies in a Fluid Medium" | |
| 14:50 pm | Glenn B. Sinclair (Louisiana State University), Jeff Beisheim (ANSYS Inc.) "On divergence checks for detecting stress singularities in finite element analysis" | |
| 15:10 pm | Brandon Gorman, Andrew Warkentin, Zoheir Farhat (Dalhousie University) "Comparison between a novel residual strain analysis method and finite element model" | |

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| Symposium on gender diversity (in French) | | 13:30 – 15:30 am |
| Room A2-1016 | | Chair: Eve Langelier, Fatima Bousadra, Sophie Rochette |
| <i>Contexte des études postsecondaires au collégial et à l'université</i> | | |
| 13:30 pm | Maren Gube (McGill University) « <i>Gender differences in achievement emotions and achievement goals</i> » | |
| 14:00 pm | Catherine Mavriplis (Université d'Ottawa) « <i>Le leadership au féminin en génie</i> » | |
| 14:30 pm | Elijah Van Houten, Ève Langelier (Université de Sherbrooke) « <i>Transposer l'activité intellectuelle en génie dans un cadre scolaire</i> » | |
| 15:00 pm | Dominique Guérette (OIQ) « <i>Objectif 30 en 30</i> » | |

15:30 – 15:50 p.m.: Refreshment break (A8, level 3)

15:50 – 17:10 p.m.: Parallel sessions

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| Session: Heat and mass transfers | | 15:50 – 17:10 pm |
| Room A8-360 | | Chair: Yann Bartosiewicz |
| 15:50 pm | Stephen Roper (Queen's University), Mark Baczkowski, Bartosz Protas (McMaster University), Il Yong Kim (Queen's University) <i>"Structural and Thermal Topology Optimization: Development of Standard Examples"</i> | |
| 16:10 pm | Nobuyuki Fujisawa, Yuya Ikarashi (Niigata University) <i>"Mass transfer measurements and flow separation characteristics in a 90° short elbow"</i> | |
| 16:30 pm | Minghan Xu, Saad Akhtar, Mahmoud Alzoubi, Agus Sasmito (McGill University) <i>"Development and verification of two-phase Stefan problem using perturbation method for artificial ground freezing"</i> | |
| 16:50 pm | Daqian Zhang, Guangjun Wang (Chongqing Univ.), Xili Duan (Memorial University of Newfoundland) <i>"Application of inverse heat transfer method in the thermal management of electronic devices with a phase change material"</i> | |

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| Session: Wind engineering | | 15:50 – 17:10 pm |
| Room A8-334 | | Chair: Dahai Qi |
| 15:50 pm | Hatem Alrawashdeh, Ted Stathopoulos (Concordia University) <i>"Reliable evaluation of wind loads on roof-mounted solar panels using wind-tunnel models"</i> | |
| 16:10 pm | Jianhan Yu, Ted Stathopoulos (Concordia University) <i>"Estimating exposure roughness based on Google Earth"</i> | |
| 16:30 pm | Anastasia Athanasiou, Ted Stathopoulos, Lucia Tirca (Concordia University) <i>"Wind and earthquake load assessment of mid-rise buildings"</i> | |
| 16:50 pm | Murad Aldoum, Ted Stathopoulos (Concordia University) <i>"Wind loads on large buildings"</i> | |

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|---|--|--|
| Symposium on gender diversity (in French) | | 15:50 – 17:20 pm |
| Room A2-1016 | | Chair: Eve Langelier, Fatima Bousadra, Sophie Rochette |
| <i>Contexte professionnel</i> | | |
| 15:50 pm | Nathalie Podeszinski (CRSNG) <i>« L'équité, la diversité et l'inclusion en recherche »</i> | |
| 16:20 pm | Vincent Larivière (Université de Montréal) <i>« La place des femmes dans les lieux de diffusion des savoirs scientifiques »</i> | |
| 16:50 pm | Sophie Brière (Université Laval) <i>« Les femmes dans les milieux traditionnellement masculins »</i> | |
| 17 :20 pm | Mot de remerciement | |

17:30 – 19:30 p.m.: Welcome aperitif at the Microbrewery "Refuge des brasseurs" (2155 Rue Galt O, Sherbrooke, QC J1K 1K3)

Tuesday, May 28, 2019

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| Plenary session 3 | | 9:00 – 10:00 am |
| Room A8-334 | | Chair: Junior Lagrandeur |
| 9:00 am | Prof. Ian Beausoleil-Morrison (Carleton University) <i>"Providing high solar fractions for space and water heating in cold climates through seasonal storage"</i> | |

10:00 – 10:20 a.m.: Refreshment break (A8, level 3)

10:20 – 12:00 a.m.: Parallel sessions

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| Symposium on energy efficiency | | 10:20 – 12:00 am |
| Room A8-334 | | Chair: Junior Lagrandeur & Sergio Croquer |
| 10:20 am | Nunzio Cotrufo, Etienne Saloux (Natural Resources Canada) <i>"Artificial intelligence for advanced building control energy and GHG saving from a case study"</i> | |
| 10:40 am | Haohan Sha, Dahai Qi (Université de Sherbrooke) <i>"Impact of fire protection design on ventilative cooling in atrium"</i> | |
| 11:00 am | Altamash A. Baig, Alan S. Fung (Ryerson University) <i>"Impact of carbon-pricing on energy cost savings resulting from installation of gas-fired absorption heat pump at a library building in Ontario"</i> | |
| 11:20 am | Usama Sohail, Conrad Kwiatek, Alan Fung, Darko Joksimovic (Ryerson University) <i>"Techno-economic feasibility of wastewater heat recovery for a large hospital in Toronto, Canada"</i> | |
| 11:40 am | Sormin Sultana, Andreas Athienitis, Radu Zmeureanu (Concordia University) <i>"Improving Energy Savings of a Library Building through Mixed Mode Hybrid Ventilation"</i> | |

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| Session: Acoustics | | 10:20 – 12:00 am |
| Room A8-360 | | Chair: Philippe Micheau |
| 10:20 am | Philippe Danakas, Nicolas Quaegebeur, Patrice Masson (Université de Sherbrooke) <i>« Modelling of CAM-follower concept for broadband air-coupled power ultrasound transducer »</i> | |
| 10:40 am | David Urman, Mathias Legrand (McGill University) <i>"Nonlinear modal analysis of the bar in unilateral contact via analytical weak-solutions to the wave equation"</i> | |
| 11:00 am | Ambre Allard, Nouredine Atalla, Philippe Micheau (Université de Sherbrooke) <i>« Theoretical and experimental analysis of high level electropneumatic sound source »</i> | |
| 11:20 am | Basile Radisson, Juliette Piketty-Moine, Bruno Denet, Christophe Almarcha (Aix-Marseille Université) <i>« Vibro-acoustic control of flames in a Hele-Shaw burner »</i> | |
| 11:40 am | Julien Drant, Philippe Micheau, Alain Berry (Université de Sherbrooke) <i>« Experimental demonstration of acoustic plane wave destructive interference in rectangular duct with harmonic pneumatic source »</i> | |

12:00 – 13:30 p.m.: Lunch break (UdeS cafeteria)

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|--------------------------------|---|---|
| Symposium on energy efficiency | | 13:30 – 15:30 pm |
| Room A8-334 | | Chair: Junior Lagrandeur & Sergio Croquer |
| 13:30 pm | <u>Invited talk:</u> Mohammad Mortezaazadeh, Ali Katal, Liangzhu Leon Wang (Concordia University) <i>"Modeling urban thermal airflow by integrating city fast fluid dynamics (CITYFFD) and city building energy model (CITYBEM)"</i> | |
| 14:10 pm | Mohamad Cheayb, Sébastien Poncet (Université de Sherbrooke), Mohand Tazerout, Mylène Marin Gallego (IMT Atlantique) <i>"Parametric optimisation of a trigenerative small scale compressed air energy storage system"</i> | |
| 14:30 pm | Jean Rouleau, Louis Gosselin (Université Laval) <i>"Preliminary investigation on the use of exhaust fans in dwellings and their impact on energy balance"</i> | |
| 14:50 am | Hadi Ramin, Eswaran N. Krishnan, Carey J. Simonson (University of Saskatchewan) <i>"Fixed bed regenerators for HVAC applications"</i> | |
| 15:10 am | Louis-Gabriel Maltais, Louis Gosselin (Université Laval) <i>"Predicting domestic hot water demand using machine learning for predictive control purposes"</i> | |

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|---------------------------------|---|-------------------|
| Session: Dynamics and control 2 | | 13:30 – 15:10 pm |
| Room A8-360 | | Chair: Arun Misra |
| 13:30 pm | Isabelle Jean (McGill University), Alfred Ng (Canadian Space Agency), Arun Misra (McGill University), <i>"Reference trajectories in the context of a non-linear and non-autonomous system applied to the full restricted three body problem"</i> | |
| 13:50 pm | Mohammad Tavallaeinejad, Michael Paidoussis, Mathias Legrand (McGill University), Mojtaba Kheiri (Concordia University) <i>"Influence of an initial incidence angle on the dynamics of inverted flags"</i> | |
| 14:10 pm | Thanh-Trung Do, Viet-Hung Vu, Zhaocheng Liu (École de Technologie Supérieure) <i>"Analytical modal analysis of flexible joint manipulators"</i> | |
| 14:30 pm | Xiaoyang Zhang, Mojtaba Kheiri, Wen-Fang Xie (Concordia University) <i>"Active control of a two-dimensional nonlinear wing encountering a gust"</i> | |
| 14:50 am | Changdong Liu (Concordia University), Bruce Minaker (University of Windsor) <i>"A multi-body dynamics analysis of a novel multi-link motorcycle front suspension"</i> | |

15:30 – 15:50 p.m.: Refreshment break (A8, level 3)

15:50 – 17:10 p.m.: Parallel sessions

| | | |
|--------------------------------|---|---|
| Symposium on energy efficiency | | 15:50 – 17:10 pm |
| Room A8-334 | | Chair: Junior Lagrandeur & Sergio Croquer |
| 15:50 pm | Open round table on the energy overview in Canada Yann Bartosiewicz (Université catholique de Louvain) Ian Beausoleil-Morrison (Carleton University) Martin Désilets (Université de Sherbrooke) Dominique Monney (Emerson Canada) Hakim Nesreddine (Hydro-Québec, LTE) | |

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| Session: Machining and processes | | 15:50 – 17:10 pm |
| Room A8-360 | | Chair: Mohamed Mediouni |
| 15:50 pm | Bruno Barazani, Guillaume Dion, Anouar Oudrhiri, Farnaz Ghaffari, Julien Sylvestre (Université de Sherbrooke) <i>« Micromachined neuro-processing accelerometer »</i> | |
| 16:10 pm | Daniel Iruikwu, Andy Simoneau (University of New Brunswick) <i>"Peck depth optimization in deep-hole drilling operations"</i> | |
| 16:30 pm | Mohamed Mediouni (Université de Sherbrooke), Riadh Madiouni (University of Paris-Est Créteil) <i>"Using 3D finite element analysis to avoid osteonecrosis: case of acetabular bone"</i> | |
| 16:50 pm | Alexandre Riebel, Andrew Warkentin, Robert Bauer (Dalhousie University) <i>"Investigation into the effect of groove depth in creep grinding"</i> | |

Wednesday, May 29, 2019

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| Plenary session 4 | | 9:00 – 10:00 am |
| Room A8-334 | | Chair: Sébastien Poncet |
| 9:00 am | Prof. Carolyn Ren (University of Waterloo) <i>"Droplet Microfluidic Platform for High Throughput Analysis"</i> | |

10:00 – 10:20 a.m.: Refreshment break (A8, level 3)

10:20 – 12:00 a.m.: Parallel sessions

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| Session: Turbulence | | 10:20 – 12:00 am |
| Room A8-360 | | Chair: Hachimi Fellouah |
| 10:20 am | <u>Invited talk</u> : Yann Bartosiewicz (Université catholique de Louvain) <i>"Reconciling thermodynamics and CFD: Exergy tubes. Application to better understand transfers in supersonic ejectors"</i> | |
| 10:40 am | Abdullah Faruque (Rochester Institute of Technology) <i>"Determining mean velocity in stream (open channel flow): one point, two point or three point method?"</i> | |
| 11:00 am | Abdelouhab Mohammed Taifour, Louis Dufresne, Julien Weiss (École de technologie supérieure) <i>"Numerical simulation of a large pressure-induced turbulent separation bubble"</i> | |
| 11:20 am | Alla Eddine Benchikh Lehocine, Sébastien Poncet, Jay Lacey (Université de Sherbrooke) <i>"Numerical simulation around a D-section bluff body"</i> | |
| 11:40 am | Safouane Tebib, Marlène Sanjosé, Stéphane Moreau (Université de Sherbrooke) <i>"Large eddy simulation of an outflow butterfly valve"</i> | |

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| Session: Materials 1 | | 10:20 – 12:00 am |
| Room A8-334 | | Chair: Hamid Akbarzadeh |
| 10:20 am | Michael Nucci, Evan Munroe, Bill Poldon, Il Yong Kim (Queen's University) <i>"Material testing of metal coated polymers in cold temperatures"</i> | |
| 10:40 am | Jennifer Sears, Jennifer Johrendt (University of Windsor) <i>"Neural Network development for prediction of optimal mechanical properties of carbon fibre/polyamide-6 long fibre thermoplastics"</i> | |
| 11:00 am | Mehdi Eynbeygui, Jamal Arghavani (Sharif University), Hamid Akbarzadeh (McGill University), Reza Naghdabadi (Sharif University) <i>"Elastic properties of pyramidal lattices"</i> | |
| 11:20 am | Yousef Saadati, Jean-François Chatelain (École de Technologie Supérieure), Gilbert Lebrun (Université du Québec à Trois Rivières), Yves Beauchamp (McGill University) <i>« Tension and compression properties of unidirectional flax fibre-reinforced epoxy composites for modeling of machining processes »</i> | |
| 11:40 am | Marie Hébert, Jan Huissoon, Carolyn Ren (University of Waterloo) <i>"Silicon-based soft matrix nanocomposite strain tensor"</i> | |

12:00 – 13:30 p.m.: Lunch break (UdeS cafeteria)

13:30 – 15:30 p.m.: Parallel sessions

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| Session: Fluid Mechanics | | 13:30 – 15:30 pm |
| Room A8-360 | | Chair: Christophe Almarcha |
| 13:30 pm | Hossein Rahmani, Seyed Mohammad Taghavi (Université Laval) <i>"Effects of asymmetric wall slip on the stability of Poiseuille flow of Bingham fluids"</i> | |
| 13:50 pm | Hossein Hassanzadeh, Seyed Mohammad Taghavi (Université Laval) <i>"An experimental study on the stability of vertical buoyant jets"</i> | |
| 14:10 pm | Maziar Sargordi, Anna Chtchetinina, Giuseppe Di Labbio, Hoi Dick Ng, Lyes Kadem (Concordia University) <i>"Pulsatile flow downstream of a double orifice configuration"</i> | |
| 14:30 pm | Soheil Akbari, Seyed Mohammad Taghavi (Université Laval) <i>« Fluid mechanics analysis of cement plug placement in dump bailing method »</i> | |

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| 14:50 pm | Yu Fang, Sébastien Poncet (Université de Sherbrooke), Yann Bartosiewicz (Université catholique de Louvain) <i>"Analysis of transport phenomena in a two phase CO2 supersonic ejector"</i> |
| 15:10 pm | Mengcheng Jiang, Biao Zhou (University of Windsor) <i>"Numerical Simulation of Liquid Water Behaviors in Microchannel Using the Multi-fluid Volume of Fluid Method"</i> |

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| Session: Solid mechanics | | 13:30 – 15:30 pm |
| Room A8-334 | | Chair: Glenn Sinclair |
| 13:30 pm | Thomas Godfrey <i>"A model for tear growth in a cruciform biaxial tensile test of woven fabrics with initial slit damage"</i> | |
| 13:50 pm | Matt Schmitt, Il Yong Kim (Queen's University) <i>"Reliability of failure mechanics in am abs bolt holes"</i> | |
| 14:10 pm | Michael Nucci, Graeme Sabiston, Bill Poldon, Chris Carrick, Il Yong Kim (Queen's University) <i>"Manufacturable Optimization of a Monorail Ceiling Structure Component"</i> | |
| 14:30 pm | Shailendra Sharan (Laurentian University) <i>"A closed-form solution for displacements around circular openings in a generalized Hoek-Brown rock"</i> | |
| 14:50 pm | Trent Andrus (Louisiana State University), Kathleen Edwards (University of California), Glenn Sinclair (Louisiana State University) <i>"On the applicability of Hertzian contact formulae to deformable indenters"</i> | |
| 15:10 pm | Zhen Yang, Tian Tang (University of Alberta) <i>"Enhanced and directional adhesion enabled by asymmetric patterned interface"</i> | |

15:30 – 15:50 p.m.: Refreshment break (A8, level 3)

15:50 – 17:10 p.m.: Parallel sessions

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|------------------------|---|---------------------|
| Session : Aerodynamics | | 15:50 – 17:10 pm |
| Room A8-360 | | Chair: Ugo Piomelli |
| 15:50 pm | Prateek Jaiswal, Yann Pasco, Stéphane Moreau (Université de Sherbrooke) <i>"Experimental investigation of airfoil tones on a CD airfoil"</i> | |
| 16:10 pm | Abdurrazag Khaled; Dan Mateescu, Tim Lee (McGill University) <i>"Analysis of unsteady viscous flows past stationary airfoils at low Reynolds numbers using a time spectral method"</i> | |
| 16:30 pm | Mohammed Nadjib Hamaloui, Arezki Smaili (Ecole Polytechnique d'Alger); Hachimi Fellouah (Université de Sherbrooke) <i>"New stall delay model for HAWT performance predictions"</i> | |
| 16:50 pm | Samir Ouchene, Arezki Smaili (Ecole Polytechnique d'Alger), Hachimi Fellouah (Université de Sherbrooke) <i>"RANS simulations of a NACA0015 airfoil in static and deep stall regimes"</i> | |

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| Session : Biomechanics | | 15:50 – 17:10 pm |
| Room A8-334 | | Chair: Philippe Micheau |
| 15:50 pm | Reda Othman, Wael Khier, Magda Ali, Hisham Imam (Assiut University) <i>"In Vivo, Skull Impact Fracture Behavior under Dynamic Load Using CT Image"</i> | |
| 16:10 pm | Mojtaba Zare, Leping Li (University of Calgary) <i>"Modelling compression-rate-dependent response of knee joint"</i> | |
| 16:30 pm | Abdalaziz Abusharkh, Michel Labrosse (University of Ottawa) <i>"Improving the numerical efficiency of a high accuracy shell element for soft tissues"</i> | |
| 16:50 pm | Giuseppe Di Labbio, Lyes Kadem (Concordia University) <i>"Toward a classification of the cardiac vortex"</i> | |

18:30 – 22:30 p.m.: Gala dinner at "OMG" restaurant (1175 Rue King Ouest, Sherbrooke, QC J1H 1S6)

2 Awards of the best student papers
Honorary CANCAM award
CANCAM Gold medal

Thursday, May 30, 2019

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| Plenary session 5 | | 9:00 – 10:00 am |
| Room A8-334 | | Chair: Hachimi Fellouah |
| 9:00 am | Prof. Ugo Piomelli (Queen's University) <i>"The good, the bad and the beautiful. Leonardo's studies of turbulence"</i> | |

10:00 – 10:20 a.m.: Refreshment break (A8, level 3)

10:20 – 12:00 a.m.: Parallel sessions

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| Session: Energy | | 10:20 – 12:20 am |
| Room A8-334 | | Chair: Yann Bartosiewicz |
| 10:20 am | Ahmad Zueter, Mahmoud Alzoubi, Aurélien Nie-Rouquette, Agus Sasmito (McGill University) <i>« Selective freezing : new concept for energy saving in artificial ground freezing »</i> | |
| 10:40 am | Théo Frazao, Carla Ferraro, Senda Trabelsi, Sébastien Poncet (Université de Sherbrooke) <i>"Rheology of ice slurries: what is the best additive"</i> | |
| 11:00 am | Abbas Aghagoli, Mikhail Sorin, Sébastien Poncet (Université de Sherbrooke) <i>"Thermodynamic analysis of a novel transcritical CO2 vortex tube heat pump cycle"</i> | |
| 11:20 am | Jean-François Peloquin et al. (Université de Sherbrooke) <i>« Economic analysis of hydrogen production by solar steam methane reforming"</i> | |
| 11:40 am | Stéphanie Higgins, Theodore Stathopoulos (Concordia University) <i>"Design strategies for optimizing wind energy production in urban environment"</i> | |
| 12:00 am | Marius Poyard, Hachimi Fellouah (Université de Sherbrooke), Stéphane Abide (Université de Perpignan Via Domitia) <i>"Modeling on TRNSYS of greenhouses with plant evapo-transpiration"</i> | |

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| Session: Materials 2 | | 10:20 – 12:00 am |
| Room A8-360 | | Chair: Hamid Akbarzadeh |
| 10:20 am | Charly Batigne, Ahmed Maslouhi (Université de Sherbrooke), Rajamohan Ganesan (Concordia University) <i>"Determination of the fatigue life associated to delamination onset by the use of acoustic emission technique"</i> | |
| 10:40 am | Armin Mirabolghasemi, Shahin Eskandari, Hamid Akbarzadeh (McGill University), Gilles Desharnais (Axis Prototypes) <i>"Conformally perforated P-shellular metamaterials"</i> | |
| 11:00 am | Rajamohan Ganesan, Ajeesh Suresh Nair (Concordia University) <i>"First-ply failure envelopes of composite tubes under combined axial and torsional loadings"</i> | |
| 11:20 am | Nima Shabanijafroudi, Rajamohan Ganesan (Concordia University) <i>"Shear buckling of curved composite panels with elastic rotational restraints"</i> | |
| 11:40 am | Patrick Dubois, Dominik Thibault et al. (Université de Sherbrooke) <i>"Development and validation of an inside-out ceramic gas turbine (ICT) prototype"</i> | |

12:00 – 13:30 p.m.: Lunch break (UdeS cafeteria)

13:30 – 15:30 p.m.: optional technical visits

- Institut interdisciplinaire d'innovation technologique (3IT)
- Centre de Technologies Avancées (CTA) – BRP/UdeS

Signup sheet will be available at the Registration Desk until Tuesday. Spots will fill up on a first-come, first-served basis.