



## Final Program

Sunday, the 20th of May 2018		
17-19 pm	Registration Welcome Cocktail	Orchestre Bistro
Monday, the 21st of May 2018		
8-9 am: Registration		
Time	Activity	Room
9 – 9.25	Opening ceremony *Prof. Sébastien Poncet, Conference chair *Dr Ina Colombo, IIR Deputy Director General *Dr Laurence Fournaison, Chairperson on the IIR working group on “Phase-Change Materials and Slurries for Refrigeration and Air Conditioning”	Orchestre
9.25-10.20	Keynote Lecture 1 : <u>Dominic Groulx</u> (Dalhousie University) <i>The Rate Problem: Search for Application Specific Optimization of Energy Storage Density and Exchange Rate</i>	Orchestre
10.20-10.40	Coffee break	Orchestre
10.40-12.00	Session 1 chaired by Dr Hakim Nesreddine (Lab. Technologies Energie, Hydro-Québec)	Orchestre
10.40-11.00	<u>Alexis Sevault</u> (SINTEF), K. Banasiak, J. Bakken, A. Hafner <i>A novel PCM accumulator for refrigerated display cabinet: design and CFD simulations</i>	Orchestre
11.00-11.20	<u>Saad Akhtar</u> (McGill University), A. Madiseh, A. P. Sasmito <i>Numerical investigation of a novel phase-change renewable energy system for underground mine heating and cooling</i>	Orchestre
11.20-11.40	<u>Mahmood Mastani Joybari</u> (Concordia University), F. Haghighat, A. Moreau, Y. Yuan <i>A front tracking method for melting of phase change materials</i>	Orchestre
11.40-12.00	<u>Gonzalo Diarce</u> (University of the Basque Country), A. Campos-Celador, L. Quant, A. Garcia-Romero <i>A simple and fast methodology for the design of plate-based LHTES systems</i>	Orchestre
12.00-13.30	Lunch	Salle à manger
13.30-15.30	Session 2 chaired by Dr Laurence Fournaison (IRSTEA)	Orchestre
13.30-13.50	<u>Eneja Osterman</u> (University of Ljubljana), U. Stritih <i>Parametrical analysis of PCM thermal storage system for heating and cooling of buildings – Paper 010</i>	Orchestre



13.50-14.10	<u>Yuka Kusama</u> (University of Tokyo), Y. Ishidoya <i>Measurement results of indoor environment and energy saving in experimental residences constructed with PCM plaster in Hokkaido (Japan)</i>	Orchestre
14.10-14.30	J. Vennapusa, K. Singh, <u>Sujay Chattopadhyay</u> (IIT Roorkee) <i>Development of PCM based packaging material for thermal buffering</i>	Orchestre
14.30-14.50	S. Asfour, P. Tittlein, <u>Laurent Zalewski</u> (Université d'Artois) <i>Dynamic study efficiency of the use of phase change materials integrated on the ceiling of a community hall</i>	Orchestre
14.50-15.10	<u>Andreas Hantsch</u> (Institute of Air Handling and Refrigeration, Dresden) <i>Energetic effects of flow through wall elements with phase change materials for building component activation</i>	Orchestre
15.10-15.30	<u>Navid Morovat</u> (Concordia University), A. Athienitis <i>Impact of building-integrated PCM on the indoor thermal environment and energy performance of an office zone</i>	Orchestre
15.30-15.50	Coffee break	Orchestre
15.50-17.50	Session 3 chaired by Prof. Michael Kauffeld (Karlsruhe University of Applied Sciences)	Orchestre
15.50-16.10	<u>Aurélien Bordet</u> (Université de Sherbrooke), S. Poncet, M. Poirier, N. Galanis <i>New flow regimes for propylene-glycol based ice slurry in pipes</i>	Orchestre
16.10-16.30	<u>Charles Onokoko</u> (Université de Sherbrooke), N. Galanis, S. Poncet, M. Poirier <i>A pseudo-single-phase continuum model for melting ice slurries in pipe flows</i>	Orchestre
16.30-16.50	<u>Sam Brooks</u> (University of Bristol), G. Quarini, M. Tierney <i>Ice slurry production control system for supercooled brine in a nylon helical coiled heat exchanger</i>	Orchestre
16.50-17.10	<u>Michel Poirier</u> (CanmetEnergy), J. Tamasauskas, D. Giguère <i>Concept and performance of a solar assisted heat pump using ice slurry as a phase change storage medium</i>	Orchestre
17.10-17.30	<u>Christoph Steffan</u> (Institute of Air Handling and Refrigeration, Dresden), J. Schwarz, M. Safarik, M. Honke, U. Hesse <i>Compact plate heat exchanger design and optimization for ice slurry applications: a review of experiences and development steps</i>	
17.30-17.50	<u>Seyed Soheil Mousavi Ajarostaghi</u> (Babol Noshirvani University of Technology), S. Poncet, M. A. Delavar, K. Sedighi <i>Numerical simulation of the melting process in a shell and coil tube ice storage system for air-conditioning application</i>	Orchestre



**Tuesday, the 22th of May 2018**

Time	Activity	Room
8.30 – 9.25	Keynote Lecture 2 : <u>Andreas Athienitis</u> (Concordia University) <i>Modeling and optimal operation of high performance buildings with integrated phase change materials</i>	Orchestre
9.25-10.20	Keynote Lecture 3 : <u>Michael Kauffeld</u> (Karlsruhe University of Applied Sciences) <i>25 years working with ice slurry: history, current technologies and future developments</i>	Orchestre
10.20-10.40	Coffee break	Orchestre
10.40-12.20	Session 4 chaired by Prof. Nicolas Galanis (Université de Sherbrooke)	Orchestre
10.40-11.00	<u>Noé Beaupère</u> (CEA Grenoble), U. Soupremanien, L. Zalewski <i>Solidification monitoring of supercooled phase change materials</i>	Orchestre
11.00-11.20	<u>Hiroshi Suzuki</u> (Kobe University), I. Watanabe, R. Hidema, Y. Komoda, T. Horie, N. Ohmura, H. Asano <i>Dispersion and flow characteristics of hard-shell microcapsules with phase change materials</i>	Orchestre
11.20-11.40	<u>Henri Schmit</u> (ZAE Bayern), C. Rathgeber, L. Sun, S. Hiebler <i>Model-based prediction and experimental verification of eutectic PCM</i>	Orchestre
11.40-12.00	<u>Virginia Vasile</u> (University POLITEHNICA of Bucharest), A. Badea, H. Necula, R. Revellin, J. Bonjour, P. Haberschill <i>Investigation of heat transfer and rheology of a phase change material emulsion with a high concentration in surfactant</i>	Orchestre
12.00-12.20	<u>Jessica Pipes</u> (SASOL), T. Gross, M. Maywald, D. Schaer <i>High purity single cut paraffins as feedstock for PCM materials</i>	Orchestre
12.20-13.30	Lunch	Salle à manger
13.30-15.30	Session 5 chaired by Prof. Dominic Groulx (Dalhousie University)	Orchestre
13.30-13.50	<u>Anastasia Stamatiou</u> (Lucerne University of Applied Sciences and Arts), R. Waser, L.J. Fischer, J. Wörlitschek <i>High power thermal energy storage using phase change material slurries</i>	Orchestre
13.50-14.10	<u>Michel Pons</u> (CNRS, LIMSI), L. Fournaison, A. Delahaye, D. Dalmazzone <i>Effect of phase change kinetics on energy efficiency of secondary refrigeration with hydrate slurries</i>	Orchestre
14.10-14.30	<u>Kohei Nakamura</u> (Toho Gas Co.), T. Ina, H. Suzuki, R. Hidema, Y. Komoda <i>Ammonia alum hydrate-based phase change materials for effective use of excess exhaust heat from gas engines</i>	Orchestre
14.30-14.50	<u>Sung Choi</u> (Korea University), Y.T. Kang <i>An experimental investigation on performance evaluation of CO<sub>2</sub> hydrate formation for district cooling application</i>	Orchestre



14.50-15.10	<u>Mark Dannemand</u> (Technical University of Denmark), S. Furbo <i>Supercooling stability of sodium acetate trihydrate composites in multiple heat storage units</i>	Orchestre
15.10-15.30	S. Frehner, <u>Anastasia Stamatiou</u> (Lucerne University of Applied Sciences and Arts), L. Fischer, J. Worlitschek <i>Techno-economic analysis of a phase change material slurry for industrial applications</i>	Orchestre
15.30-15.50	Coffee break	Orchestre
15.50-17.50	Session 6 chaired by Prof. Masahiro Kawaji (City College of New-York)	Orchestre
15.50-16.10	N. Dhaidan, <u>Manar Al-Jethelah</u> (University of Guelph) <i>Study on the effect of nanoparticle dispersion on the melting of PCM in hemicylindrical cell</i>	Orchestre
16.10-16.30	<u>Seyed Soheil Mousavi Ajarostaghi</u> (Babol Noshirvani University of Technology), S. Poncet, A. Dolati, M. A. Delavar <i>Numerical simulation of the charging process in a horizontal shell-and-tube phase change material storage</i>	Orchestre
16.30-16.50	R. Lazzarin, <u>Simone Mancin</u> (University of Padova), M. Noro, G. Righetti, L. Zamboni <i>Simulation of the phase change process of paraffin waxes with and without Al foams for advanced hybrid thermal energy storages</i>	Orchestre
16.50-17.10	<u>Vikram Soni</u> (IIT Kanpur), A. Kumar, A. Kumar, V.K. Jain <i>Behaviour of phase change material during discharge stage in a thermal energy storage system: an experimental and numerical study</i>	Orchestre
17.10-17.30	J. Hlinik, <u>Lubomir Klimes</u> (Brno University of Technology), P. Charvat, M. Ostry <i>A study into optimal design of an air-PCM thermal energy storage unit with CSM panels</i>	Orchestre
17.30-17.50	<u>Damien Mathis</u> (Université Laval), P. Blanchet, V. Landry, P. Lagiere <i>Decorative wood-based panels loaded with biosourced PCMs</i>	Orchestre
18.30	Cocktail and Gala dinner	Bistro



**Wednesday, the 23rd of May 2018**

Time	Activity	Room
8.30 – 9.25	Keynote Lecture 4 : <u>Jörg Worlitschek</u> , A. Stamatiou, L. Fischer (Lucerne University of Applied Sciences and Arts) <i>High power thermal energy storage research at Lucerne University of Applied Sciences and Arts</i>	Orchestre
9.25-10.20	Keynote Lecture 5 : <u>Anis Somani</u> (Sunwell Technologies Inc.) <i>Overview of Industry Applications of DeepChill™ Slurry</i>	Orchestre
10.20-10.40	Coffee break	Orchestre
10.40-12.20	Session 7 chaired by Prof. Jocelyn Bonjour (Université de Lyon, CETHIL)	Orchestre
10.40-11.00	<u>Evan Owens</u> (Arkansas Tech University), S.E. Hosseini, G. Phillips <i>Energy consumption reduction in a refrigeration system using phase change materials</i>	Orchestre
11.00-11.20	T. Dufour, H.M. Hoang, V. Osswald, P. Clain, <u>Laurence Fournaison</u> (IRSTEA), A. Delahaye <i>Impact of thermal energy storage on the sizing and energy consumption of a district cooling system</i>	Orchestre
11.20-11.40	<u>Peter Hoock</u> (ZAE Bayern), S. Pöllinger, A. Krönauer, S. Hiebler, F. Bailly, K. Baysal, A. Kleiner, M. Laudahn, C. Weiß <i>PCM in a fridge / freezer combination – a challenging PCM application</i>	Orchestre
11.40-12.00	C. Monsalve, C.A. Isaza, J. Cofré, <u>Diego A. Vasco</u> (Universidad de Santiago de Chile) <i>Assessment of an integrated household refrigerator with an eutectic phase change material and a solar photovoltaic system</i>	Orchestre
12.00-12.20	<u>Stefan Gschwander</u> (Fraunhofer Institute for Solar Energy Systems), M. Delgado Gracia, M. Brütting, H. Neumann, P. Schossig <i>Characterization of PCM, standardization in the frame of the IEA ECES Annex 33 and SHC task 58</i>	Orchestre
12.20-13.30	Lunch	Salle à manger
13.30-15.30	Session 8 chaired by Prof. Simone Mancin (University of Padova)	Orchestre
13.30-13.50	<u>Masahiro Kawaji</u> (City College of New-York) <i>Phase-change-material nanoemulsions for energy transport and storage</i>	Orchestre
13.50-14.10	<u>Laura Quant</u> (University of the Basque Country), G. Diarce, A. Campos-Celador, A. Garcia Romero, D. Haillot <i>A thermal stability study of the urea sodium nitrate eutectic mixture as a PCM</i>	Orchestre
14.10-14.30	L.J. Fischer, <u>Simon Maranda</u> (Lucerne University of Applied Sciences and Arts), A. Stamatiou, S. Von Arx, J. Wörlitschek <i>Experimental investigation on heat transfer characteristics in a phase change dispersion</i>	Orchestre
14.30-14.50	<u>Henri Schmit</u> (ZAE Bayern), J. Linn, D. Pauckner, K. Müller, S. Hiebler <i>Generation, crystal fraction and viscosity of <math>K_2HPO_4 \cdot 6H_2O</math>-PCS</i>	Orchestre



14.50-15.10	<u>Michael Biedenbach</u> (Fraunhofer Institute for Solar Energy Systems), L. Poetzsch, S. Gschwander <i>Characterization of an n-Octadecane PCS in a 0.5 m<sup>3</sup> storage tank test facility</i>	Orchestre
15.10-15.30	B. Nienborg, <u>Stefan Gschwander</u> (Fraunhofer Institute for Solar Energy Systems), R. Horn, H. Weinläder, F. Klinker, P. Schossig <i>Life cycle assessment of phase change materials, components and system concepts</i>	Orchestre
15.30-15.50	Coffee break	Orchestre
15.50-17.30	Session 9 chaired by Dr Michel Poirier (Natural Resources Canada, CanmetEnergy)	Orchestre
15.50-16.10	<u>Milan Ostry</u> (Brno University of Technology), S. Bantova, P. Charvat, L. Klimes <i>Investigation of compatibility of organic and inorganic PCMs with the materials of containers</i>	Orchestre
16.10-16.30	R. Lazzarin, <u>Simone Mancin</u> (University of Padova), M. Noro, G. Righetti <i>Porous media for advanced hybrid thermal energy storages</i>	Orchestre
16.30-16.50	<u>Runfeng Li</u> (Beijing Jiaotong University), Y. Zhou, X. Duan <i>Preparation and properties of paraffin / tailing ceramic composite phase change energy storage materials</i>	Orchestre
16.50-17.10	<u>Michael Biedenbach</u> (Fraunhofer Institute for Solar Energy Systems), F. Klunder, S. Gschwander <i>Investigations on the stability of metallic cans for PCM macro-encapsulation</i>	Orchestre
17.10-17.30	M.A. Bashir, K.P. Amber, <u>Muhammad Waqar Aslam</u> (Mirpur University of Science and Technology), A. Kousar, R. Ahmed, M. Abid <i>Performance analysis of a double pass solar air heater with and without thermal storage medium</i>	Orchestre