

HI-AM ^{2nd} | 2019 Conference

HOLISTIC INNOVATION IN
ADDITIVE MANUFACTURING

PROGRAM SCHEDULE

JUNE 26 & 27
VANCOUVER, BC, CANADA

conference.nserc-hi-am.ca



Keynote Speakers at HI-AM 2019:



Prof. David Bourell
University of Texas
at Austin, TX



Prof. Christoph Leyens
Fraunhofer
IWS, Germany



Prof. Milan Brandt
RMIT, Australia



Dr. Ali Bonakdar
Siemens Canada



Dr. Hannes Gostner
EOS, Germany

HI-AM CONFERENCE 2019 PROGRAM SCHEDULE

DAY 1 – June 26, 2019

MORNING

8:00-8:30am	BREAKFAST
8:30-8:40am	CONFERENCE OPENING – Location: Great Hall South Santa Ono, <i>UBC President and Vice Chancellor</i> James Olson, <i>Dean of the UBC Faculty of Applied Science</i> Ehsan Toyserkani, <i>HI-AM Director</i>
8:40-9:20am	KEYNOTE: Metals for Additive Manufacturing – Location: Great Hall South David Bourell, <i>Temple Foundation Professor, Director of Laboratory for Freeform Fabrication, The University of Texas at Austin</i>
SESSION 1: ADVANCES IN ADDITIVE MANUFACTURING I Chair: Steve Cockcroft Location: Great Hall South	
9:20-9:40am	Presentation 1: Business Case for Additive Manufacturing in Serial Production Alexander Boehm <i>KSB, Germany</i>
9:40-10:00am	Presentation 2: Low Cost, Medium-Speed Stereovision for Spatter Tracking in Powder Bed Fusion Eric MacDonald <i>Youngstown State University, United States</i>
10:00-10:20am	Presentation 3: Efficient Parameter Development Strategy of Tool Steel Materials for Laser Additive Manufacturing Gregor Graf*, Manuela Leoni**, Tobias Muller, Jorg Fischer-Buhner, Daniel Beckers*, Sven Donisi*, Frederik Zanger**, Volker Schulze** <i>*Rosswag GmbH, Germany **Karlsruhe Institute of Technology, Germany</i>
10:20-10:40am	MORNING TEA, POSTER AND EXHIBITION VIEWING
10:40-11:20am	KEYNOTE: Innovative Aerospace and Space Structures Made by Additive Manufacturing – Location: Great Hall South Christoph Leyens, <i>Managing Director, Fraunhofer Institute of Materials and Beam Technology, Germany</i>
SESSION 2: ADVANCES IN ADDITIVE MANUFACTURING II Chair: Daan Maijer Location: Great Hall South	
11:20-11:40am	Presentation 4: Optimisation of Process Parameters for In-situ Alloyed Titanium by Selective Laser Melting Igor Yadroitsev*, Ina Yadroitsev*, Pavel Krakhmalev**, Anton du Plessis***, Eric Newby*, Dean Koupryanoff* <i>*Central University of Technology, South Africa **Karlstud University, Sweden ***Stellenbosch University, South Africa</i>
11:40am-12:00pm	Presentation 5: Novel Repair Strategy Using Additive Manufacturing to Address Severe Foreign Object Damage on Ti Alloy Fan Blades Priti Wanjara*, Javad Gholipour*, Kosuke Watanabe**, Koji Nezaki** <i>*National Research Council of Canada-Montreal **IHI Corporation, Japan</i>
12:00-12:20pm	Presentation 6: Development of Metal Slurry Three-Dimensional Printing System Based on Maskless Projection Method Cho-Pei Jiang*, Shinn-Liang Chang** <i>*National Taipei University of Technology, Taiwan **National Formosa University, Taiwan</i>



12:20-1:00pm LUNCH			
1:00-2:00pm	POSTER VIEWING – Location: Great Hall South EXHIBITION VIEWING – Location: Great Hall North		
2:00-2:40pm	KEYNOTE: Mastering AM Freedom – Location: Great Hall South Hannes Gostner, <i>Director Research and Development, EOS, Germany</i>		
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; background-color: #0056b3; color: white; padding: 5px;"> SESSION 3: MATERIAL DEVELOPMENT I Chair: Paul Bishop Location: Great Hall South </td> <td style="width:50%; background-color: #0056b3; color: white; padding: 5px;"> SESSION 4: ADVANCED PROCESS MODELING I Chair: Damiano Pasini Location: Room 2301 </td> </tr> </table>		SESSION 3: MATERIAL DEVELOPMENT I Chair: Paul Bishop Location: Great Hall South	SESSION 4: ADVANCED PROCESS MODELING I Chair: Damiano Pasini Location: Room 2301
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2:40-3:00pm	Presentation 7: Effect of Powder Attributes on Microstructure and Mechanical Properties of 3D-printed Al10SiMg Alloy Using Laser Powder Bed Fusion Technique Vahid Fallah, Qingshan Dong, Mark Gallermeault <i>Queen's University, Canada</i>		
3:00-3:20pm	Presentation 8: Development of Modified A8 and S7 Tool Steel Powders for Additive Manufacturing by LPB-AM Denis Mutel, Carl Blais <i>Universite Laval, Canada</i>		
3:20-3:40pm	Presentation 9: Studying the Impact of Particle Morphology on Powder Spreading and Laser Powder Bed Fusion Characteristics to Maximize the Process Productivity Salah Eddin Brika*, Morgan Letenneurm*, Christopher Alex Dion**, Vladimir Brailovski* <i>*ETS Montreal, Canada **PyroGenesis Additive, Canada</i>		
3:40-4:00pm	Presentation 10: Selective Electron Beam Melting of Al-Cu-Mg Alloy: Processability and Characterization Mohammad Saleh Kenevisi, Feng Lin <i>Tsinghua University, China</i>		
4:00-4:20pm AFTERNOON TEA, POSTER AND EXHIBITION VIEWING			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; background-color: #0056b3; color: white; padding: 5px;"> SESSION 5: PROCESS MONITORING AND CONTROL I Chair: Mihaela Vlasea Location: Room 2301 </td> <td style="width:50%; background-color: #0056b3; color: white; padding: 5px;"> SESSION 6: NOVEL AM PROCESSES AND PRODUCTS I Chair: Vahid Fallah Location: Great Hall South </td> </tr> </table>		SESSION 5: PROCESS MONITORING AND CONTROL I Chair: Mihaela Vlasea Location: Room 2301	SESSION 6: NOVEL AM PROCESSES AND PRODUCTS I Chair: Vahid Fallah Location: Great Hall South
SESSION 5: PROCESS MONITORING AND CONTROL I Chair: Mihaela Vlasea Location: Room 2301	SESSION 6: NOVEL AM PROCESSES AND PRODUCTS I Chair: Vahid Fallah Location: Great Hall South		
4:20-4:40pm	Presentation 15: In-line Melt Pool Monitoring of Laser Powder-bed Fusion Katayoon Taherkhani*, Zheng Ma*, Esmat Sheydaein*, Ali Ghodsi*, Martin Otto**, Christopher Eischer**, Ehsan Toyserkani* <i>*University of Waterloo, Canada **EOS, Germany</i>		
4:40-5:00pm	Presentation 16: Modelling and Identification of Electron Beam Deflection System Scott Parks, Zekai Murat Kilic, Yusuf Altintas <i>The University of British Columbia, Canada</i>		
5:00-5:20pm	Presentation 17: Cost Effective Real-Time Thermal Dynamics Modeling in Laser Materials Processing Lucas Botelho, Amir Khajepour <i>University of Waterloo, Canada</i>		
5:20-5:40pm	Presentation 18: In-situ Sensing and Measurement for Quality Control in Metal Additive Manufacturing: Review and Future Directions Thomas Lehmann*, Tonya Wolfe**, Hani Henein*, Ahmed Qureshi* <i>*University of Alberta, Canada **InnoTech Alberta, Canada</i>		
5:40-6:40pm	Presentation 19: Machine Learning Aided Optimization of Conformal Cooling Channel Zhenyang Gao, Fiona Zhao <i>McGill University, Canada</i>		
5:40-6:40pm	Presentation 20: Hybrid Additive Manufacturing and Casting Processes for Non Ferrous Alloys Axelle Sabouraud, Artitra Biswas, Abdoul-Aziz Bogno, Hani Henein, Ahmed Qureshi <i>University of Alberta, Canada</i>		
5:40-6:40pm	Presentation 21: Mechanical and Functional Performance of Porous Bone Replacement Implants Asma El Elmi*, David Melancon**, Meisam Asgari*, Liu Lu*, Damiano Pasini* <i>*McGill University, Canada **Harvard University, United States</i>		
5:40-6:40pm	Presentation 22: Surface Finishing of Titanium and Nickel-based Laser Powder Bed-fused Components: Abrasive Flow Machining Versus Electrochemical Polishing Neda Mohammadian*, Victor Urlea*, Clement Bouland*, Sylvain Turenne**, Vladimir Brailovski* <i>*ETS Montreal, Canada **Ecole Polytechnique de Montreal, Canada</i>		
POSTER VIEWING – Location: Great Hall South EXHIBITION VIEWING – Location: Great Hall North			
SCIENTIFIC ADVISORY COMMITTEE MEETING – Location: Robert H. Lee Boardroom Alumni Centre			
6:40-9:00pm CONFERENCE DINNER – Location: Gallery & Patio Restaurant			



8:00-8:30am		BREAKFAST	
8:30-9:10am		KEYNOTE: Additive Manufacturing Landscape in Australia – Location: Great Hall South Milan Brandt, <i>Director Centre for Additive Manufacturing, Advanced Manufacturing Precint, RMIT University, Australia</i>	
		SESSION 7: MATERIAL DEVELOPMENT II Chair: Ahmed Qureshi Location: Room 2301	SESSION 8: ADVANCED PROCESS MODELING, MONITORING AND CONTROL Chair: Fiona Zhao Location: Great Hall South
9:10-9:30am	Presentation 23: Fabrication of Rene 41 Parts with Laser Powder Bed Fusion Sila Atabay*, Kevin Plucknett**, Mathieu Brochu* <i>*McGill University, Canada **Dalhousie University, Canada</i>	Presentation 27: Geometric Deviations of Laser Powder Bed Fused AISi10Mg Components: Numerical Predictions Versus Experimental Measurements Floriane Zongo*, Charles Simoneau**, Anatolie Timercan*, Antonie Tahan*, Vladimir Brailovski* <i>*ETS Montreal, Canada **SimuTech Group, Canada</i>	
9:30-9:50am	Presentation 24: Particle Decoration: A Method for Developing New Material for Additive Manufacturing Ehsan Marzbanrad, Yahya Mahmoodkhani, Ehsan Toyserkani <i>University of Waterloo, Canada</i>	Presentation 28: Melt Pool Geometry Modeling and Monitoring Via In-situ Vision System for Powder Fed Laser Fusion Process Deniz Sera Ertay, Josh van Houtum, Mihaela Vlasea <i>University of Waterloo, Canada</i>	
9:50-10:10am	Presentation 25: Electrostatic Atomisation of Metals Bilal Bharadia, Abdoul-Aziz Bogno, Hani Henein <i>University of Alberta, Canada</i>	Presentation 29: Temperature Fluctuations at Boundary Points in Laser Powder Bed Fusion Emre Ogeturk, Mary Wells <i>University of Waterloo, Canada</i>	
10:10-10:30am	Presentation 26: Implementation of the Kitagawa-Takahashi Approach for Prediction of Fatigue Limit of Inconel 625 Components Containing Intentionally-seeded Defects Jean-Rene Poulin, Patrick Terriault, Vladimir Brailovski <i>ETS Montreal, Canada</i>	Presentation 30: Design of a Test Artefact to Evaluate Critical Design Features for Ti-6Al-4V Parts in Electron-Beam Melting Additive Manufacturing (EBAM) Gitanjali Shanbhag, Mihaela Vlasea <i>University of Waterloo, Canada</i>	
10:30-10:50am		MORNING TEA, POSTER AND EXHIBITION VIEWING	
		SESSION 9: ADVANCED PROCESS MODELING II Chair: Marjan Molavi-Zarandi Location: Great Hall South	SESSION 10: NOVEL AM PROCESSES AND PRODUCTS II Chair: Vladimir Brailovski Location: Room 2301
10:50-11:10am	Presentation 31: Microscale Interaction Between the Laser and Metal Powder in Powder-bed Additive Manufacturing: Conduction Mode Versus Keyhole Mode Hongze Wang, Yu Zou <i>University of Toronto, Canada</i>	Presentation 36: Investigating Residual Stress Characteristics for Selected Direct Energy Deposition Process Settings: P420 Steel Single Bead Deposition on Mild Steel Jill Urbanic*, Navid Nazemi** <i>*University of Windsor, Canada **AMG Metal Inc., Canada</i>	
11:10-11:30am	Presentation 32: A Predictive System for Manufacturability Analysis of Laser Powder Bed Fusion Process Ying Zhang, Fiona Zhao <i>McGill University, Canada</i>	Presentation 37: Evaluation of Additive Manufacturing for Repair and Remanufacturing Purposes Fatih Sikan*, Priti Wanjara**, Javad Gholipour**, Mathieu Brochu* <i>*McGill University, Canada **National Research Council of Canada-Montreal</i>	
11:30-11:50am	Presentation 33: Thermal Fluid Modeling for Melt Pool Generation of Ti6Al4V Powder Bed In The Electron Beam Additive Manufacturing Eiko Nishimura, Steve Cockcroft, Daan Maijer, Farzaneh Farhang-Mehr <i>The University of British Columbia, Canada</i>	Presentation 38: Laser Powder Bed Fusion of AISi10Mg for Fabrication of an Aluminum Transmission Pump Housing Lisa Brock, Hamed Asgari, Mihaela Vlasea <i>University of Waterloo, Canada</i>	
11:50am-12:10pm	Presentation 34: Normative Benchmark Design and Preliminary Geometric Quality Results for Selective Laser Melting Process Baltej Singh, Marc Secanell, Ahmed Qureshi <i>University of Alberta, Canada</i>	Presentation 39: Direct Laser Deposition of Ti-5Al-5V-5Mo-3Cr Alloy Xinjin Cao*, Alexander Bois-Brochu**, Javad Gholipour* <i>*National Research Council of Canada **Centre de metallurgie du Quebec, Canada</i>	
12:10-12:30pm	Presentation 35: Numerical Analysis of Melt Pool Geometry in Laser Powder-bed Fusion of Hastelloy X Shahriar Imani*, Adhitan Rani Kasinathan*, Zhidong Zhang*, Yahya Mahmoodkhani*, Usman Ali*, Ali Keshavarzkermani*, Ehsan Toyserkani*, Ali Bonakdar** <i>*University of Waterloo, Canada **Siemens, Canada</i>	Presentation 40: Predicting Defects in 3D Printed Lattice Structures Ken Nsienpba, Ehsan Toyserkani <i>University of Waterloo, Canada</i>	



12:30-1:10pm		LUNCH	
1:10-1:50pm		KEYNOTE: Industrialization of Additive Manufacturing: A Journey from Fundamental Research to Production Location: Great Hall South Ali Bonakdar, <i>Advanced Manufacturing Technology Lead, Siemens, Canada</i>	
		SESSION 11: MATERIAL DEVELOPMENT III Chair: Hani Henein Location: Great Hall South	SESSION 12: ADVANCED PROCESS MODELING AND NOVEL AM PROCESSES Chair: Priti Wanjara Location: Room 2301
1:50-2:10pm	Presentation 41: Correlating the Columnar Grain Structure with the Anisotropic Mechanical Response of Hastelloy X Produced by Laser Powder-bed Fusion Ali Keshavarzkermani*, Reza Esmailizadeh*, Shahriar Imani*, Hamid Jahed Motlagh*, Norman Zhou*, Ali Bonakdar**, Ehsan Toyserkani* *University of Waterloo, Canada **Siemens, Canada	Presentation 46: Tool Path Related Process Planning Challenges for Direct Energy Deposition Systems Bob Hedrick*, Jill Urbanic** *CAMufacturing Solutions Inc., Canada **University of Windsor, Canada	
2:10-2:30pm	Presentation 42: Graphene Nanocellulose Composites for 3D Printed Electrodes Taylor Morrison, Hani Naguib University of Toronto, Canada	Presentation 47: Selective Laser Melting of Graphene-reinforced Aluminum Matrix Composites for Electrical Batteries Mostafa Yakout, M. A. Elbestawi McMaster University, Canada	
2:30-2:50pm	Presentation 43: Application of Fast Cooling Calorimetry in AM An Fu*, Pierre Hudon*, Paul Bishop**, Mathieu Brochu* *McGill University, Canada **Dalhousie University, Canada	Presentation 48: Influence of Operating Parameters During Plasma Transferred Arc Additive Manufacturing on Carbide Concentration of 70wt% Ni-WC Metal Matrix Composite Components Dylan Rose*, Tonya Wolfe**, Hani Henein*, Leijun Li* *University of Alberta, Canada **InnoTech Alberta, Canada	
2:50-3:10pm		AFTERNOON TEA, POSTER AND EXHIBITION VIEWING	
3:10-3:30pm	Presentation 44: Selective Laser Melting of Copper, Aluminum, and Copper-Aluminum Alloy Hao Kun Sun, Yu Zou, Gisele Azimi University of Toronto, Canada	Presentation 49: Integration of Physically-based Analytical Model and Statistically-driven Empirical Model for Multi-objective Optimization of Laser Powder-bed Fusion Yuze Huang, Hamed Asgari, Mohammad Ansari, Behrad Khamesee, Ehsan Toyserkani University of Waterloo, Canada	
3:30-3:50pm	Presentation 45: Laser Powder Bed Processing of Aluminum Powders Containing Iron and Nickel Additions Greg Sweet*, Jon Hierlihy*, Ian Donaldson**, Mathieu Brochu***, Paul Bishop* *Dalhousie University, Canada **GKN, Canada ***McGill University, Canada	Presentation 50: Progress in Applying Fused Filament Fabrication to Metal Matrix Composites (MMC) Nancy Bhardwaj*, Hani Henein*, Tonya Wolfe** *University of Alberta, Canada **InnoTech Alberta, Canada	
3:50-4:00pm	CLOSING REMARKS AND AWARDS – Location: Great South Hall Andrew Szeri, <i>UBC VP Academic and Provost</i>		
4:00-5:00pm	BOARD OF DIRECTORS MEETING – Location: Robert H. Lee Boardroom Alumni Centre		



THEME 1 - MATERIAL DEVELOPMENT

Poster 1: Innovative Surface Finishing Methods for Reducing Internal and External Surface Roughness of Metal Additive Manufacturing Parts
 Haniyeh Fayazfar, Mihaela Vlasea, Ehsan Toyserkani
University of Waterloo, Canada

Poster 2: The Contribution of Moisture from Cellulosic Filters in LPBF AM
 Aniruddha Das, Mathieu Brochu
McGill University, Canada

Poster 3: Laser DED Cladding of H13 Tool Steel and Elemental Equivalents
 Owen Craig, Kevin Plucknett
Dalhousie University, Canada

Poster 4: A Novel Binder Jetting Process to Fabricate Functionally Graded Nanocomposites for Hygroscopic Sensing and Actuation
 Xuechen Shen, Hani Naguib
University of Toronto, Canada

Poster 5: Mechanical Properties of Additively Manufactured Tessellated Metamaterial Design Configurations
 Anastasia Wickeler, Hani Naguib
University of Toronto, Canada

Poster 6: Improving Surface Finish of Low-cost Irregular Powders in Laser Powder-bed Fusion
 Seung Ho Jeong, Sagar Patel, Allan Rogalsky, Mihaela Vlasea, Adrian Gerlich, Mary Wells
University of Waterloo, Canada

Poster 7: Reactive Sintering for Post-processing of Binder-jet Additive Manufactured Metal Matrix Composites
 Pablo Enrique, Norman Zhou, Ehsan Toyserkani
University of Waterloo, Canada

Poster 8: Characterization of Commercial Mo Powders and Their Laser Powder Bed Fusion Additive Manufacturing Behavior
 Tejas Ramakrishnan, Eileen Ross Espiritu, Mathieu Brochu
McGill University, Canada

Poster 9: Elevated-temperature Tensile and Creep Properties of Laser Powder Bed-fused IN625 Components
 Alena Kreitsberg*, Karine Inaekyan*, Sylvain Turenne**, Vladimir Brailovski*
**ETS Montreal, Canada | **Ecole Polytechnique de Montreal, Canada*

Poster 10: Rapid Solidification of Al-Cu Eutectic
 Daniela Diaz, Abdoul-Aziz Bogno, Jonas Valloton, Hani Henein
University of Alberta, Canada

Poster 11: Effect of Rapid Solidification on Microstructure and Properties of Al-Si alloys
 Daniela Diaz, Hani Henein, Abdoul-Aziz Bogno
University of Alberta, Canada

Poster 12: Processing of Ti-64 by Laser Powder Fed Additive Manufacturing
 Nick Gosse*, Ian Donaldson**, Kevin Plucknett*, Paul Bishop*
**Dalhousie University, Canada | **GKN, Canada*

Poster 13: Binder Jet Printing of Low Cost Tool Steel Powders
 Ryen Ley*, Ian Donaldson**, Paul Bishop*
**Dalhousie University, Canada | **GKN, Canada*

Poster 14: Rapid Solidification of Al-Si-Sc Alloy
 Akankshya Sahoo*, Abdoul-Aziz Bogno*, William Hearn**, Hani Henein*
**University of Alberta, Canada | **Chalmers University of Technology, Sweden*

Poster 15: Correlating the Columnar Grain Structure with the Anisotropic Mechanical Response of Hastelloy X Produced by Laser Powder-bed Fusion
 Ali Keshavarzkermani, Reza Esmaeilizadeh, Shahriar Imani, Hamid Jahed Motlagh, Norman Zhou, Ehsan Toyserkani
University of Waterloo, Canada

THEME 2 - ADVANCED PROCESS MODELING

Poster 16: Evaluation of Residual Stresses Induced in Laser Powder-bed Fusion Additive Manufacturing Process: Finite Element Simulation and Experimental Investigation
 Marjan Molavi-Zarandi*, Ali Bonakdar**, Ramin Sedaghati***
National Research Council of Canada-Boucherville | **Siemens, Canada | *Concordia University*

Poster 17: Control of Density and Microstructure in Laser Powder Bed-fused Components Using a Combination of Melt Pool Modeling and Design of Experiment Approaches
 Morgan Letenneur, Alena Kreitsberg, Vladimir Brailovski
ETS Montreal, Canada

Poster 18: Adaptive Trajectory Planning for Direct Energy Deposition Using Tri-Dexel Model
 Farzaneh Kaji**, Vadim Kozhevnikov**, Ehsan Toyserkani*
**University of Waterloo, Canada | **Promation, Canada*

Poster 19: Mechanics of Additively Built Porous Biomaterials
 Ahmed Moussa*, Asma El Elmi*, David Melancon**, Damiano Pasini*
**McGill University, Canada | **Harvard University, United States*

Poster 20: Topology Optimization of Structures Under Design-dependent Pressure Loads
 Pouyan Rahnama, Osezua Ibhaddode, Zhidong Zhang, Ehsan Toyserkani
University of Waterloo, Canada

Poster 21: Design for Additive Manufacturing: Topology Optimization of a Mechanical Assembly
 Osezua Ibhaddode, Pouyan Rahnama, Ehsan Toyserkani
University of Waterloo, Canada

Poster 22: Study on Fracture Mechanism of Ti-6Al-4V EBM Manufactured Under Different Loading Conditions Through a Hybrid Experimental-numerical Approach
 Mohammad Shaterzadeh, Marcilio Alves
University of Sao Paulo, Brazil

Poster 23: Numerical Model of Al-33wt%Cu Eutectic Growth During Impulse Atomization
 Jonas Valloton, Abdoul-Aziz Bogno, Hani Henein
University of Alberta, Canada

Poster 24: Residual Stress and Distortion in Electron Beam Additive Manufacturing of Ti-6Al-4V Build Plates
 Pegah Pourabdollah, Farzaneh Farhang-Mehr, Steve Cockcroft, Daan Maijer
The University of British Columbia, Canada

Poster 25: Meso-scale Thermal, Elastic and Plastic Strain Evolution in PB-EBAM
 Asmita Chakraborty, Farzaneh Farhang-Mehr, Daan Maijer, Steve Cockcroft
The University of British Columbia, Canada

Poster 26: Residual Deformation and Stress Measurement
 Farhad Rahimi, Farzaneh Farhang-Mehr, Daan Maijer, Steve Cockcroft
The University of British Columbia, Canada

Poster 27: Beam/Powder/Melt Pool Interaction; Experimental Validation
 Arman Khobzi, Farzaneh Farhang-Mehr, Daan Maijer, Steve Cockcroft
The University of British Columbia, Canada

Poster Presentation Gallery



THEME 3 - PROCESS MONITORING AND CONTROL

Poster 28: Literature Survey of Laser Ultrasound Imaging Techniques Applicable to Defect Detection in Metal Additive Manufactured Parts

Alexander Martinez-Marchese, Ehsan Toyserkani
University of Waterloo, Canada

Poster 29: Leveraging Keyhole Mode Melting Models in Laser Powder Bed Fusion

Sagar Patel, Mihaela Vlasea
University of Waterloo, Canada

Poster 30: Detection of Internal Defects and Surface Cracks in Additively Manufactured Conductive Parts by Eddy Current Technique

Heba Farag, Behrad Khamesee, Ehsan Toyserkani
University of Waterloo, Canada

Poster 31: Modelling of Powder Spreading to Optimize Compaction Consistency

Alexander Groen, Mihaela Vlasea, Kaan Erkorkmaz
University of Waterloo, Canada

Poster 32: Anisotropic Finite Element Modeling of an Aluminum Alloy Made by Additive Manufacturing

Henrique Ramos*, Rafael Santiago*, Marcilio Alves**, Peter Theobald***, Shwe Soe***
*Federal University of ABC, Brazil | **University of Sao Paulo, Brazil | ***University of Cardiff, UK

Poster 33: Investigation of Binder Deposition and Infiltration Strategies for Binder Jetting

Marc Wang, Ken Nsiempba, Mihaela Vlasea
University of Waterloo, Canada

Poster 34: Current-controlled Line Energy – Porosity Relation for EBAM of Ti-6Al-4V

Frederik Lindenau*,**,**, Chadwick Sinclair**, Heinz Voggenreiter*,**,**
*University of Stuttgart I | **The University of British Columbia | ***DLR

THEME 4 - NOVEL AM PROCESSES AND PRODUCTS

Poster 35: Design, Manufacture and Testing of Porous Materials with Ordered and Random Porosity: Application to Porous Medium Burners

Mykhailo Samoilenko, Patrice Seers, Patrick Terriault, Vladimir Brailovski
ETS Montreal, Canada

Poster 36: Patient-specific Endoprostheses for Limb Sparing in Dogs: Design, Manufacturing, in Vitro Study and Clinical Trial

Anatolie Timercan*, Bernard Seguin**, Yvan Petit*, Bertrand Lussier***, Vladimir Brailovski*
*ETS Montreal, Canada | **Colorado State University, Colorado | ***Universite de Montreal

Poster 37: Predicting Defects in 3D Printed Lattice Structures

Ken Nsiempba, Ehsan Toyserkani
University of Waterloo, Canada

Poster 38: Magnetic Levitation and Suspension Systems for Additive Manufacturing Techniques

Parichit Kumar, Behrad Khamesee, Ehsan Toyserkani
University of Waterloo, Canada

Poster 39: An Analytical Model for Interaction of Laser Beam and Powder Stream in a Coaxial Nozzle for Directed Energy Deposition

Mohammad Ansari, Yuze Huang, Alexander Martinez-Marchese, Ehsan Toyserkani
University of Waterloo, Canada

Poster 40: Processing Conditions of 17-4 PH using Plasma Transfer Arc Additive Manufacturing

Sandy El Moghazi*, Hani Hanein*, Tonya Wolfe**, Leijun Li*
*University of Alberta, Canada | **InnoTech Alberta, Canada

Poster 41: Nanoindentation Studies of Dual-phase Ti-6Al-2Zr-1Mo-1V Alloys Made by Additive Manufacturing

Zhiying Liu, Yu Zou
University of Toronto, Canada

Poster 42: Dip Coating of Tool Steel H13 with TiC-Ni3Al Cermet Suspensions, and Their Subsequent Laser Cladding

Zhila Russell, Kevin Plucknett
Dalhousie University, Canada

Poster 43: Geometrical Accuracy of NiTi Shape Memory Parts Produced by Laser Powder Bed Fusion

Saeed Khademzadeh, Paolo Bariani, Simone Carmignato
University of Padova, Italy

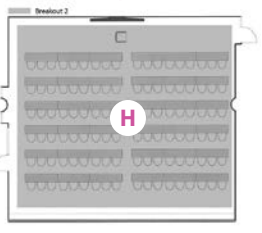
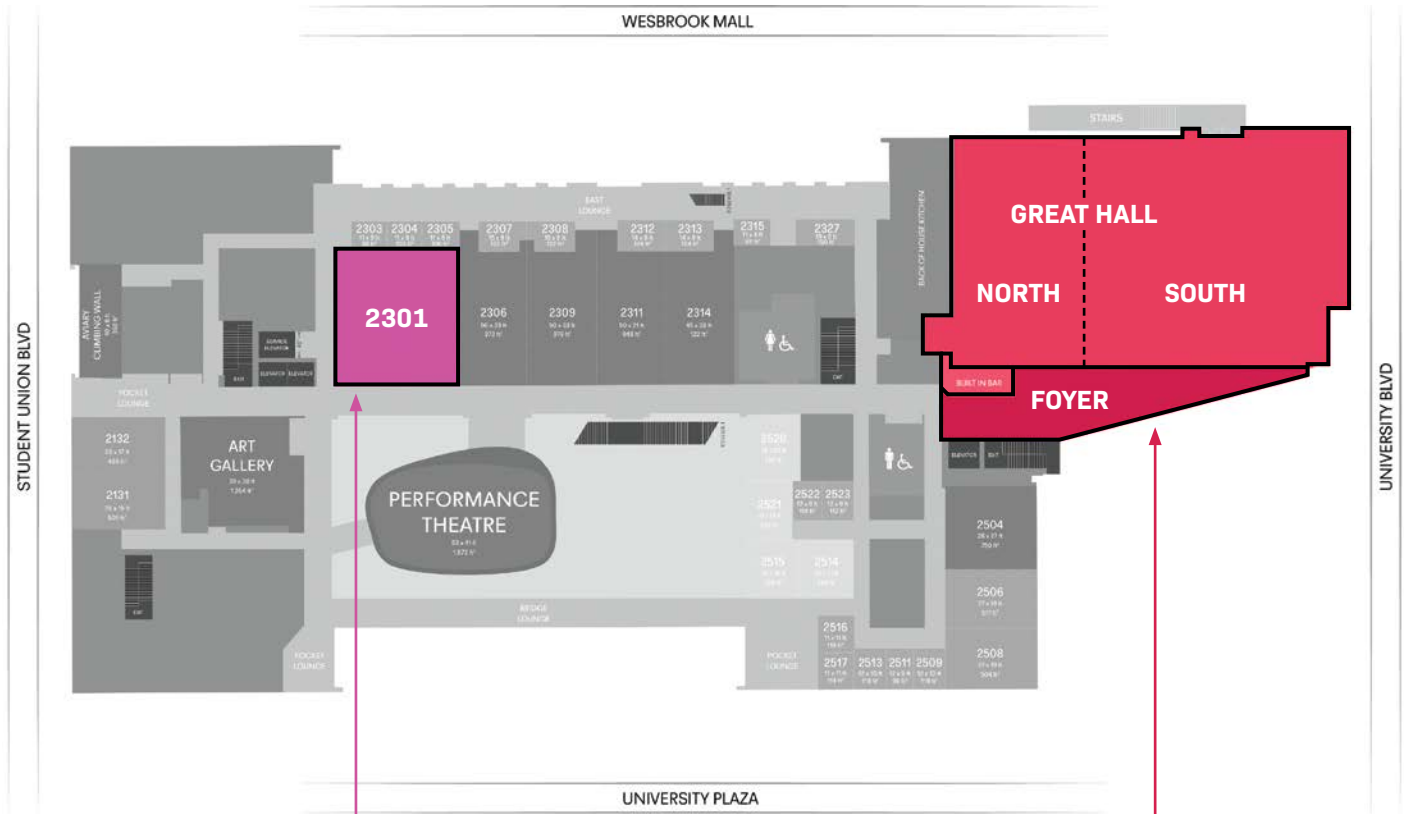
Poster 44: Porous Scaffolds Based on Triply Periodic Minimal Surface (TPMS) Manufactured by Different Additive Manufacturing Methods

Xin Zhang*, Rizhi Wang*, Dawei Wang**
*The University of British Columbia, Canada | **Southern University of Science and Technology, China

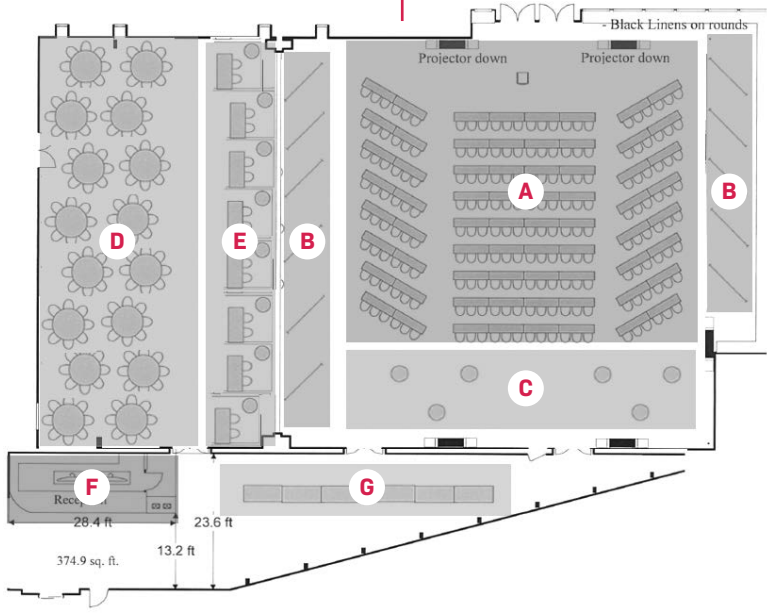


Venue Map

The AMS Nest – Level 2



Classroom 2301
H Breakout 2



- Great Hall – South**
- A** Plenary/Breakout 1
 - B** Poster Display Area
 - C** Networking Area
- Great Hall – North**
- D** Catering
 - E** Exhibitors
- Foyer**
- F** Reception
 - G** Buffet