Curriculum Vitae (July, 2026)

I. Personal Information

Name: Hani Henein
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Professional Engineering Status: APEGGA (Alberta) Member since 2003

Ia. Education

PhD, Metallurgical Engineering, 1981
University: University of British Columbia
Thesis title: Bed behaviour in rotary cylinders with applications to rotary kilns
Advisor name: A. P. Watkinson (1976-1980), J. K. Brimacombe (1976-1980)

MSc, Metallurgical Engineering, 1975
University: McGill University
Thesis title: Hydrodynamics of solid additions to liquid steel
Advisor name: R. I. L. Guthrie (1972-1975)

BSc, Metallurgical Engineering 1972
University: McGill University

Ib. Appointments

Director, July 1991 – present.
Advanced Materials and Processing Laboratory, University of Alberta

Professor, June 1989 – present.
Department of Mining, Metallurgical and Petroleum Engineering,
Department of Chemical and Materials Engineering, University of Alberta

Visiting Professor, November 2023
Ensemble 3, Warsaw, Poland

Visiting Professor, November 2012 – December 2012.
Université de Rouen, Rouen, France

Visiting Professor, March 2011 – April 2011.
Université de Rouen, Rouen, France

Visiting Professor, January 2011-February 2011.
Grande Ecole Supérieure des Mines de Paris, Sophia-Antipolis, France

Killam Research Fellow, September 2002-August 2004.

Visiting Scientist and Professor May 1999-August 1999.
Grande Ecole Supérieure des Mines à Nancy, France

McMaster-OCMR Visiting Professor, July 1996-August 1996.
Department of Materials Science and Engineering, McMaster University

Visiting Professor, November 1995-December 1995.
Department of Metallurgical and Materials Engineering, University of Alabama, Tuscaloosa, AL, USA

Associate Professor, July 1986-May 1989.
Department of Metallurgical Engineering and Materials Science, Carnegie-Mellon University, Pittsburgh, PA, USA

Assistant Professor, February 1981-June 1986.
Department of Metallurgical Engineering and Materials Science, Carnegie-Mellon University, Pittsburgh, PA, USA

II. Awards and Distinctions

IIa: International Awards and Fellowships

2026 **TMS 2026 AIME Honorary Membership Award**
This award is presented to members who have outstanding service or made distinguished scientific or engineering achievement in the fields embracing the activities of AIME and its Member Societies. This award was established in 1872 and is considered a pinnacle award.

2025 **2025 TMS Research to Industrial Practice Award**
This award is presented to an individual who has demonstrated outstanding achievement in transferring research results or findings in some aspect of the fields of metallurgy and materials into commercial production and practical use as a representative of an industrial, academic, governmental, or technical organization.

2025 In the top 2% of world scientists with a composite publication score of 3.2426. https://doi.org/10.1371/journal.pbio.3000918

2021 **Fellow of the Institute of Materials, Minerals and Mining, London, United Kingdom.**
IOM3 is incorporated by Royal Charter to promote and develop all aspects of the science and technology of Materials, Minerals and Mining. IOM3's roots go back to the Iron and Steel Institute which was established in 1869. It received Royal Charters in 1899 and 1975.

2021 **Fellow of The Minerals, Metals and Materials Society, USA.**

For pioneering developments in pipe-line steels, spray forming and determination of liquid metal properties; and an outstanding record of publications, international awards and participation in professional society affairs.

2014 **Fellow of ASM International, USA.**

For scientific and engineering achievements in developing the understanding between structure and processing for a wide range of metallic alloys and processing methods, targeting industrially relevant materials in the energy and aerospace fields while mentoring students and creating innovative materials science teaching methodologies.

1985 **Outstanding Young Member, Pittsburgh Chapter, ASM International**

for the Outstanding Young Member in the Chapter.

1983 **George Tallman Ladd Award**, Carnegie-Mellon University,

for excellent promise in research.

IIb: Prestigious Lectures and National Awards

2023 **Airey Award, MetSoc of CIM**

*The Airey Award is **the most prestigious award** for a MetSoc member in Canadian metallurgy and materials. Recognition of a career contribution or an outstanding individual contribution based on at least 15 years of input. The contributions and impact must be to the benefit of Canada. The citation reads "in recognition for his leadership and innovation in the development and processing of materials."*

2019-2020 **ASM Canada Council M. Brian Ives Lecturer, ASM International**

For distinguished and significant contributions to the Canadian materials community

2019 **MetSoc Award for Research Excellence, MetSoc of CIM**

Premier award for an academic or research scientist in any Canadian research laboratory or University. The Award recognizes a lifetime contribution in teaching and research resulting in a significant breakthrough in the metallurgy or materials practices. Citation reads: "for his dedication to teaching and exceptional research innovations in materials development and processing."

2016 **CIM Distinguished Lecturer, CIM**

In recognition of excellence in teaching and innovative generation of knowledge through multi-disciplinary collaborations.

2011 **Metal Chemistry Award, MetSoc of CIM**

to recognize outstanding contributions to metallurgical chemistry.

2002 **Killam Research Fellowship**, **presently called Dorothy Killam Fellowships**

The Killam Research Fellowship Program is designed to recognize and support distinguished Canadian scholars, normally full professors at Canadian universities and research institutes, who have established an outstanding reputation in their area of research.

IIc: National Fellowships

2006 **Fellow of Canadian Institute of Mining, Metallurgy and Petroleum (CIM)**

For outstanding contributions to the Canadian Minerals Industry and to CIM.

2003 **Fellow of the Canadian Academy of Engineers**

For distinction in the art and science of engineering in Canada.

IId: Recognition for distinguished service to the profession

2019-2020 **President**, **American Institute of Mining, Metallurgical and Petroleum Engineers (AIME),**

Founded in 1871, AIME is one of the first national engineering socieities in the USA, also known as an Engineering Founding Society. AIME represents over 200,000 professionals worldwide.

2015-2021 **AIME Trustee**

2014 **President, The Minerals, Metals and Materials Society (TMS)**

TMS is a professional society that connects minerals, metals, and materials scientists and engineers who work in industry, academia, and government positions around the world. TMS currently supports nearly 14,000 professional and student members on six continents. TMS separately incorporated from AIME in 1984.

2014 **Minerals and Metals Sector Gold Award**, **Natural Resources Canada**

In recognition for dedication and exceptional achievements in Policy and Program Excellence.

2004 **Silver Medal**, **The Metallurgical and Materials Society (MetSoc of CIM)**

In recognition for his leadership and contribution to the development and maintenance of the Metallurgicaland Materials Society of CIM.

2001 **Presidential Citation, The Iron and Steel Society** (presently the Association of Iron and Steel Technology, AIST).

For leadership and vision in promoting young members and students in the Iron and Steel Society.

1999 **President Plaque**, **The Metallurgy and Materials Society (MetSoc of CIM)**

In recognition of distinguished service to MetSoc.

1998 **President, MetSoc of CIM**

Formed in 1945 as the Metallurgy Division from the Canadian Institute of Mining, Metallurgy and Petroleum, The Metallugy Society was constituted in 1967. In October 2010 it adopted a new name The Metallurgy and Materials Society. MetSoc of CIM has about 1400 professional Members worldwide.

1994 **John W. Farrell Award**, **Process Technology Division, ISS (presently AIST)**

for dedicated leadership to the Process Technology Division of ISS.

1992-1996 **Editor in Chief, Canadian Metallurgical Quarterly**

1986 **President's Award**, **Pittsburgh Chapter, American Society for Metals**

for Outstanding Service to the Chapter.

IIe: Best research paper awards (graduate students are written in **bold)**

2026 **Mckay-Helm Award, American Welding Society**

Awarded for the best contribution to the advancement of knowledge relative to the welding of low alloy steels, stainless steels, or the application of surface weld metals as represented

in articles published in the Welding Journal during the previous calendar year. The paper awarded is: ***T. Ren****, J. B. Wiskel, G. Lehnhoff, D.G. Ivey, L. Li, L. Collins, M. Gaudet, E. Willet, H. Henein,* "*The Effect of CWTSAW on the Toughness of Heavy-Guage X70: Part II: Correlating Microstucture with Charpy Toughness*," *The Welding Journal, v104 (11), 2025, pp. 131-141.*

2013 **Charles Hatchett Award, IOM^3, London, UK.**

For the best paper on the science and technology of niobium and its alloys.

J. Lu*, O. Omotoso, J.B. Wiskel, D.G. Ivey, H. Henein, "Strengthening mechanisms and their relative contributions to the yield strength of microalloyed steels", Met Trans A, 43(9), 3043-3061, doi: 10.1007/s11661-012-1135, 2012.*

2011 **MetSoc Best Paper Award**

In recognition for the best paper published in the Canadian Metallurgical Quarterly Volume 49.

H. Henein, V. Buchoud, R.-R. Schmidt, C. Watt, D. Malahof, C.-A Gandin, G. Lesoult, V. Uhlenwinkel: "Droplet solidification of Impulse Atomised Al-0.61 and 1.9 wt% Fe", CMQ, v49(3), 2010, pp 275-292.

2008 **Best Research Paper at International Pipeline Conference**

In recognition for the best paper published and presented at the 2008 International Pipeline Conference.

J. Lu, D.G. Ivey, H. Henein, J.B. Wiskel, O. Omotoso, "Extraction and Characterization of Nano-precipitates in Microalloyed Steels", Proceedings of IPC 2008, 7th International Pipeline Conference, IPC2008-64135, 2008.

2004 **Metallurgical Society of CIM Best Paper Award**.

In recognition for the best paper published in the Canadian Metallurgical Quarterly Volume 42.

S.J. Roach *and H. Henein "A Dynamic Approach to Determining the Surface Tension of a Fluid", CMQ, Vol. 42(2), 175-186.*

1976 **Henry Marion Howe Medal**, ASM,

for Best Paper Published in Metallurgical Transactions, volume 6B.

R. I. L. Guthrie, R. Clift and H. Henein: "Contacting Problems Associated with Aluminum and Ferro-Alloy Additions in Steelmaking-Hydrodynamic Aspects", Metall. Trans. B, Vol. 6B, pp.321-329, June 1975.

1975 **John Chipman Award**, Process Technology Division of the ISS-AIME (presently AIST),

for excellence and originality in contributing to the process technology relating to the processing and technology of iron and steel.

H. Henein, R. I. L. Guthrie, and R. Clift: "Contacting Problems Associated with Aluminum and Ferro-Alloy Additions in Steelmaking-Hydrodynamic Aspects", Physical Chemistry of Production or Use of Alloy Additives , J. Farrell, Editor, Proceedings of Sessions from the 103rd AIME Annual Meeting, 1974, pp.29-44.

IIf: Other awards and distinctions

1981-1982 **Lily Fellow**,

for the development of innovative approaches in engineering education.

1977-1980 **Stelco Fellowship**, *graduate award.*

1971-1970 **Quebec Ministry of Mineral Resources Scholarship**,
for academic excellence in undergraduate studies.

1969 **William Henry Howard Scholarship**,
for academic excellence in undergraduate studies.

III. Publications

Summary

Category of Publications	Career Total
Refereed Journal Papers	217
Invited and Keynote Papers	30
Papers Published in Conference Proceedings	221
Books	9
Chapters in Books,	11
Patents and Disclosures	6
Total Number of Publications	494

IIIa. Refereed journal and refereed conference publications (students and post doctoral fellows in bold, 213 peer reviewed papers)

A1. A. El-Kasmi, **D. Beaulieu**, O. Ouahri, N.T. Huong, W. Amzil, A. Droussi, O. Kuksa, E. Katsarou, C. Labba, A. Boyer, H. Henein, T. Belmonte, V. Milichko, M. Cathelineau, U. Cvelbar, J. Zavašnik, A. Nominé, "*The most sustainable High Entropy alloys for the future*", in review, 11 pages, Nov 1, 2023.

A2. **D. Beaulieu**, A. Nominé and H. Henein, "*Impact of Steels Critical Raw Materials Demand Based on Sustainability Factors"*, in review, October 27, 2023, 23 pages.

A3. José Marcelino Dias Filho, **Yifan Li**; Yun-Fei Fu; Sajid Butt; Ahmed Qureshi; Hani Henein, "*Mechanical and Material Properties of Al-4.5wt pct Cu-0.4wt pct Sc AlloyLattice Structures Fabricated by Hybrid Investment Casting*," Journal of Alloys and Compounds, in review, February 27, 2026.

A4. H. Henein, **N. Bhardwaj** and T. Wolfe, "*Optimizing particle packing of irregular shaped powders*," Chemical Engineering Science, in review, March 13, 2025, 24 pages.

A5. **V. Milani**, J.B. Wiskel, D.G. Ivey, G. Lehnhoff, M.J. Gaudet, and H. Henein, "*Effect of Ti/N ratio on precipitate size and prior austenite grain size in the ICCGHAZ for girth welding of X70," in review, April 23, 2025, 19 pages.*

A6. **A. Barros, M. Dias**, J. Valloton, A. Bogno, J. Spinelli, A. Garcia, H. Henein, N. Cheung, "Al-5Zn(-0.5Sn) [wt.%] Alloys Solidified under a Broad Range of Cooling Rates: Microstructural Evolution and Hardness," in review, 24 pages

A7. **Ry Karl**, Jonas Valloton, Chad Cathcart, Tihe Zhou, and Hani Henein, "*Application of a Modified Multi-Phase Transformation Model to Run-Out Table Cooling of Pipeline Steels during Thermomechanically Contgrolled Processing," in preparation, July 10, 2026, 27 pages.*

A8. **Abhishek Arya, Tamara Kazoun**, Ton Tihe Zhou, Chad Cathcart, and Hani Henein, "*Characterization of Coarse Ti-rich Precipitates in Ti-Nb Microalloyed Steels Using EPMA annd SEM-EDS,"* in preparation, July 10, 2026, 20 pages.

A9. **Sandy El Moghazi, Anne McDonald** and Hani Henein, "*An Assessment of Various Etchants for 17-4 Precipitation Hardened Stainless Steel*," in preparation, July 10, 2026, 13 pages.

A10. **Rishav Raj**, J. B. Wiskel, Michael Gaudet, Bikram Konar, Julian Zollinger, Pusong Wang, H. Henein, "Measurement and modeling of microsegregation of Mn and Nb in directionally solidified and as-cast X70 microalloyed steels," in review, 28 pages, July 27, 2026.

A11. **R. Karl, J. Angove,** J. Vollaton, J. B. Wiskel, C. Cathcart, T. Zhou, H. Henein**, "***Infrared Video Imaging for In-Line Evaluation of Oxide Descaler Performance on Steel Strips,"* Ironmaking and Steelmaking, May 2026, 14 pages, DOI: 10.1177/03019233261437426.

A12. P.B. dos Santos, J.F.Q. Rodrigues, J.M. Dias Filho, D.G. Ivey, H. Henein, K.N. Campo, "Revisiting the phase transformation pathways in the $Al_{0.7}$CoCrFeMnNi high-entropy alloy," Journal of Alloys and Compounds, 1066, 2026, 188327, doi.org/10.1016/j.jallcom.2026.188327.

A13. **T. Ren**, M.J. Gaudet, D.G. Ivey, G. Lehnhoff, I. Gilmore, M. Payne, L. Li, and H. Henein, "*Effect of heat input on thermal-cycles of inter-critically reheated coarse-grained HAZ in multi-pass pulsed GMAW X70 line pipe*," International Journal of Advanced Manufacturing Technology, (2022) 121:7607–7625, https://doi.org/10.1007/s00170-022-09698-9.

A14. **A. Sahoo**, A-A Bogno, J. Valloton and H. Henein, "*Interface-kinetics-driven <100> to <320> dendrite orientation transition and dendrite-to-cellular transition in rapidly solidified Al-10Si-0.4Sc,"* Journal of Crystal Growth, v683, 128552, https://doi.org/10.1016/j.jcrysgro.2026.128552.

A15. **Sandy El Moghazi, J.G. Mercado Rojas**, Tonya Wolfe, Ahmed Qureshi, Hani Henein, "*Effect of Process Parameters on Plasma Transferred Arc Additive Manufactured 17-4PH using the Taguchi Method*," Progress in Additive Manufacturing, February 2026, 15 pages, doi: 10.1007/s40964-026-01540-y.

A16. **T. Ren**, J. B. Wiskel, G. Lehnhoff, D.G. Ivey, L. Li, L. Collins, M. Gaudet, E. Willet, H. Henein, "*The Effect of CWTSAW on the Toughness of Heavy-Guage X70: Part II: Correlating Microstucture with Charpy Toughness*," The Welding Journal, v104 (11), 2025, pp. 131-141.

A17. **T. Ren**, J. B. Wiskel, G. Lehnhoff, D.G. Ivey, L. Li, L. Collins, M. Gaudet, E. Willet, H. Henein, "*The Effect of CWTSAW on the Toughness of Heavy-Guage X70: Part I: Correlating HAZ Microstructure with Cold-Wire-Feed-Rate*," The Welding Journal, v104, March 2025, 94-s – 105-s, https://doi.org/10.29391/2025.104.008.

A18. **R. Raj**; J. B. Wiskel; M. Gaudet; D. G. Ivey; H. Henein, "*The effect of non-uniform skelp temperature on X70 steel coil cooling*," Ironmaking and Steelmaking, in press, 2025.

A19. **Q. Chamdoizeau**, J. Valloton, H. Henein, "*Thermophysical property measurement of NiBSi on-board of parabolic flights,"* High Temperature-High Pressure, in press, November 7, 2025, 18 pages.

A20. J Valloton, M da Silva Dias Filho**, A Perez** and H Henein, "Non-equilibrium solidification of hypereutectic Al-20wt%Ce atomized particles," IOP Conf. Ser.: Mater. Sci. Eng. 1335 012007, 9 pages.

A21. **R. Karl,** J. Valloton, C. Cathcart, T. Zhou, F. Fazeli, JB Wiskel, and H. Henein, "*Computational Modelling of Multiple-Phase Transformations in API X70 and X80 Steels*," Metals, v15 (1379), 2025, 22 pages, https://doi.org/10.3390/met15121379.

A22. **R. Raj,** J.B. Wiskel, M.J. Gaudet, D.G. Ivey, and H. Henein, "*Model and validation of NbC nanoprecipitation during TMCP of X70 microalloyed steel*," Journal of Materials Processing Tech., v36, 2025, 4750-4760, doi.org/10.1016/j.jmrt.2025.04.155.

A23. **Y. Li, J.M.D. Filho, S. Dehgahi, S.U. Butt,** A. Qureshi, H. Henein, "*Hybrid Investment Casting of Al-Cu-Sc Alloy-Based Lattice Structures: Material and Process Characterization*," Advances in Industrial and Manufacturing Engineering, v10, 2025, 100160, 12 pages, doi.org/10.1016/j.aime.2025.100160.

A24. **M. Li**, H. Zhang, H. Henein, J. Liu, "*Unravelling Hydrogen Trapping behavior in High-Strength Steel: Comprehensive Insights from Precipitates and Grain Boundaries*," International Journal of Hydrogen Energy, 92, 2024, 1356-1365, https://doi.org/10.1016/j.ijhydene.2024.10.373.

A25. J Valloton, A.A. Bogno, S C Vogel, **A. Sahoo** and H Henein, "*Microstructural study of containerless solidification of Al-20wt%Ce alloy*," Advanced Engineering Materials, 26, 2024, 2401634, DOI: 10.1002/adem.202401634, 9 pages.

A26. **S. Teng, S. Dehgahi**, H. Henein, T. Wolfe, A.J. Qureshi: "*Sensor-fusion Enabled Inter Layer Temperature Control of Nano-treated 7075 Aluminum Alloy Produced through Wire-Arc Directed Energy Deposition Process*", Progress in Additive Manufacturing, 2024-08-22, 22 pages, DOI10.1007/s40964-024-00707-9.

A27. Eunji Song, Abdoul-Aziz Bogno, Jonas Valloton, Hani Henein, Jian Wang, Amit Misra, *Nanomechanical Behavior of Impulse Atomized Al-Ce Eutectic Particles*", Material Science and Engineering A, 915, 147296, 2024, doi.org/10.1016/j.msea.2024.147296, 10 pages.

A28. **A. Lim**, S. Dehgahi, A. Mohiuddin, H. Henein, A.J. Qureshi, "*Effect of process parameters on the porosity and tensile strength of polyvinyl alcohol produced by fused granulate fabrication*," The International Journal of Advanced Manufacturing Technlogy, https://doi.org/10.1007/s00170-024-14158-7, 18 pages.

A29. **L. Sun**, **M. Li**, M. Gaudet, F. Fazeli, J.B. Wiskel, J. Liu, W. Chen, "*Effect of bainitic microstructure on hydrogen trapping in a low carbon micro-alloyed*," International Journal of Hydrogen Energy, v136, 2025, 702-712, https://doi.org/10.1016/j.ijhydene.2024.06.006 , 11 pages.

A30. **A. Barros**, C. Cruz, C. Konno, A. Conde, H. Henein, A. Garcia, N. Cheung, "*Tailoring the hydrogen production behavior of Al-Zn-Sn alloys through their as-solidified microstructures*," International Journal of Hydrogen Energy, v 76, 2024, 44-61, doi.org/ 10.1016/j-ijhydene.2024.01.198.

A31. **D. Diaz**, A-A. Bogno, M. Dias, J. Valloton, D. Ivey and H. Henein, "*Effects of Rapid Solidification and Ce on the Microstructure of Al-40Si*," Canadian Metallurgical Quarterly, Vol. 64 (1), 2025, pp 139-148, https://doi.org/10.1080/00084433.2024.2351341,.

A32. A-A Bogno, J. Valloton, M. Rappaz, A. Qureshi, H. Henein, "*Tailored solidification microstructures for innovative use of high-density materials in lightweight products*", Journal of Alloys and Metallurgical Systems, vol. 5, 2024, 100061, 11 pages.

A33. **D. Rose,** T.B. Wolfe and H. Henein, **"***Microstructural characterization and wear of 60 and 70wt% WC-NiCrBSi thin walls deposited by Plasma Transfer Arc Additive Manufacturing*," JOM, vol. 76 (1), 2024, pp 42-56, https://doi.org/10.1007/s11837-023-06074-0.

A34. **D. Rose**, T. Wolfe, H. Henein, "*Microstructural Characterization of 70wt% WC-NiBSi Deposited by PTA-AM*," MMTA V55 (2), 2024, pp447-465,

https://doi.org/10.1007/s11661-023-07257-9.

A35. **M. Li**, H. Henein, C. Zhou and J. Liu, "*Towards eutectic high-entropy alloys with high temperature corrosion resistance and structural stability,"* Journal of Materials Science and Technology, v174, 2024, pp 133-144, https://doi.org/10.1016/j.jmst.2023.07.035.

A36. **Q. Champdoizeau**, J. Valloton and H. Henein, "Thermophysical properties and containerless solidification of Al-22.5 wt% Cu in reduced gravity using ISS-EML," Met Trans A, Vol. 54, Nov. 2023, pp 4151-4158, https://doi.org/10.1007/s11661-023-07190-x.

A37. D.M. Matson, L. Battezzati, P.K. Galenko, Ch.-A. Gandin, A.K. Gangopadhyay, H. Henein, K.F. Kelton, M. Kolbe, J. Valloton, S.C. Vogel, T. Volkmann, "*Microgravity containerless processing – rapid solidification,"* NPJ Microgravity, (2023) 9:65 ; https://doi.org/10.1038/s41526-023-00310-2.

A38. **S. Ouhiba**, J.B. Wiskel, D.G. Ivey, A. Hamilton, L. Collins and H. Henein, "*The effect of non-metallic inclusion morphology distribution on the hydrogen induced cracking (HIC) resistance of L80 steel*," Journal for Materials Research and Technology, V24, 2023, 780-794.

A39. C. Lemelin, **C. Gross**, R. Bertholet, S. Gares, M. Hall, H. Henein, V. Kozlova, M. Spila, N. Haave, "*Dismantling Disciplinary Silos: A Faculty Learning Community Facilitates Interdisciplinary Teaching Development*," Journal of Faculty Development, V37 (2), 2023, pp 15-23.

A40. **G. Bonias,** T.B. Wolfe and H. Henein, "*Modeling residual stresses of functionally graded deposits using the PTA-AM*," 2023 MCWASP XVI, IOP Conf. Series: Materials Science and Engineering 1281, 2023, 012012 IOP Publishing, doi:10.1088/1757-899X/1281/1/012012, 15 pages.

A41. **E. Ahmed**, H. Henein, A. Qureshi, and J. Liu, "*The microstructure, mechanical behavior and dissolvability of novel Al-Cu-Zn-Mg based alloys,"* Canadian Metallurgical Quarterly, June 2023, doi 10.1080/00084433.2023.2219947, 20 pages.

A42. **S. Teng**, **S. Dehgahi**, H. Henein, T. Wolfe, A.J. Qureshi, "*Effect of Surface Texture, Viewing Angle, and Surface Treatment on the Emissivity of WAAM Manufactured 7075 Nano Treated aluminum alloy*," International Journal of Advanced manufacturing Technology, v126 (5-6), 2023, 2175-2189, DOI: 10.1007/s00170-023-11208-4.

A43. J. Valloton, S.C. Vogel and H. Henein, "*Microstructural study of containerless solidification of Al-5wt%Ce Alloy*," ICASP 2022, 2023 IOP Conf. Ser.: Mater. Sci. Eng. **1274** 011001, 12058, 6 pages, doi:10.1088/1757-899X/1274/1/012058.

A44. J. Valloton, N. Mahdi, L. Rabago, J. Chung and H. Henein, "*In situ solidification of eutectic Al-33wt%Cu droplets*," ICASP 2022, 2023 IOP Conf. Ser.: Mater. Sci. Eng. **1274** 011001, 012034, 4 pages, doi:10.1088/1757-899X/1274/1/012034.

A45. K. Meszaros, A. Rana, H. Henein, M. Dias, "*Abrasion resistance and hardness evaluation of FCAW-S hard-facing following elevated temperature exposure*," Wear, 523 (2023) 204759.

A46. **M.Z. Yang**, J.B. Wiskel, D.G. Ivey, M. Gaudet, A. Hamilton, J. Liu, & H. Henein, "*The effect of tempering conditions and chromium content on carbide morphology of tempered P110 casing steels*," Materials Science and Technology, 2023, V.39 (9), 1068-1082, https://doi.org/10.1080/02670836.2022.2159455, 15 pages.

A47. A.V. Rodrigues, R. Kakitani, C. Silva, **L.G.M. Dias**, H. Henein, A. Garcia and N. Cheung, "*Influence of minor additions of Be on the eutectic modification of an Al-33wt.% Cu alloy solidified under transient conditions*, " Metals, V13 (1), 2023, doi: 10.3390/met13010094,

18 pages.

A48. **M. Dias**, A-A Bogno, J.E. Spinelli, R. Oliveira, N. Cheung, A. Garcia, and H. Henein, "*Microstructure and hardness of an Al-8wt%Si-2.5wt%Bi alloy subjected to solidification cooling rates from 0.1 to 800 K/s*," Advanced Engineering Materials, 2022, paper 2201060, DOI: 10.1002/adem.202201060, 11 pages.

A49. **T. Ren**, M. Mohammadijoo, J B. Wiskel, R. Lazor, E. Willett, D. G Ivey, H. Henein, "*Parametric study of cold wire tandem submerged arc welding of heavy gauge X70 linepipe steel*," The International Journal of Advanced Manufacturing Technology, v121, 2022, 7607-7625. https://doi.org/10.1007/s00170-022-09698-9

A50. **N. Bhardwaj**, H. Henein, T. Wolfe, "*Mechanical Properties of Thermoplastic Polymers in Fused Filament Fabrication (FFF)*," Canadian Journal of Chemical Engineers, 2022, 1-10. DOI: 10.1002/cjce.24562

A51. A-A. Bogno, **S. Yin, P. Natszke**, H. Henein, M. Gallerneault, "*On the role of Sc in powders and spray deposits of hypoeutectic Al-Cu*," Canadian Metallurgical Quarterly, DOI 10.1080/00084433.2022.2095138, 2022, 12 pages.

A52. **D. Rose, J. Forth**, H. Henein, T. Wolfe, and A.J. Qureshi, "*Automated semantic segmentation of NiCrBSi-WC optical microscopy images using convolutional neural networks*," Computational Materials Science, 2022, 111391.

A53. **S. Yin**, A-A. Bogno, H. Henein, M. Gallerneault, **"***On the role of Sc in powders and spray deposits of hypoeutectic Al-Mg alloys*," Journal of Phase Equilibria and Diffusion, https://doi.org/10.1007/s11669-021-00934-5, 12 pages.

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IIIe. Published Invited and Keynote Papers (30 Invited papers)

E1. H. Henein, **A. Sahoo** and J. Valloton, "*Microstructural study of containerless solidification of Al-20wt%Ce*," Light Metals Symp, COM, Aug 2022, 3 pages, **Invited**

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E13. **J. Lu**, H. Henein, D.G. Ivey, "A review of methods to quantify nanoscale precipitates in microalloyed steels - Part I", AIST Transactions, 10(1), 232-244, January 2013.

E14. **A. Bogno, P Delshad Khatibi** , H. Henein, Ch-A.Gandin: "Quantification of Primary and Eutectic undercoolings of Impulse Atomized Al-Cu droplets," Light Metals for Transportation, MS&T 2013, Oct. 27-31, 2013, pp 1153-1160. **Invited.**

E15. **K. Jonsson**, D.G. Ivey, H. Henein, S. Nafisi, L. Collins: "The Effect of Microstructure on the Mechanical properties of X80 Microalloyed Steel," Iron and Steel Technology, AIST, August 2012, pp 127-133. **Invited.**

E16. **A Ilbagi, P Delshad Khatibi**, H Henein, R Lengsdorf, D M Herlach" "Microstructural analysis of rapidly solidified particles of Al-Ni alloys," Journal of Physics: Conference Series, **327**, (2011) 012010, 12 pp., **Invited**.

E17. D.M. Herlach, S. Klein, P. Galenko, Ch-A. Gandin, D. Tourret, H. Henein, **A. Ilbagi**, A. Garcia-Escorial, "Non-equilibrium solidification, modeling for microstructure engineering of industrial alloys (NEQUISOL)", Proceedings of the 62nd International Astronautical Congress 2011 (IAC 2011), IAC-11.A2.4.12, 14 pages, Cape Town, South Africa, October 3-7, 2011. **Plenary**

E18. H. Henein, "An efficient method to measure physical properties of melts", Proceedings of the Roderick Guthrie Honorary Symposium on Process Metallurgy, Mihaiela Isac, Editor, McGill Metals Processing Centre, 196-201, Montreal, QC, Canada, 2011. **Plenary**

E19. **H. Shang**, J. Barry Wiskel, J. Fraser Forbes and H. Henein, "New Opportunities in Optimization and Control of Metals Processing," Process Control and Optimization in Ferrous and Nonferrous Industry, F. Kongoli, B. Thomas and K Sawamiphakdi, editors, TMS, Warrendale, PA, USA,2003, pp 3-14. **Plenary.**

E20. H. Henein, "Droplets: an indispensable tool in process engineering research," Manfred Wulf memorial Symposium, ISSTech 2003 Conference Proceedings, 2003, 683-692. **Invited.**

E21. **H. Shang,** J.B. Wiskel, J.F. Forbes, H. Henein, "Exploiting Model Fidelity to Control Metals Processing", JOM, 55 (3), 2003, 41-45. **Invited.**

E22. H. Henein, "Impulsing a melt: an innovative paradigm in atomization," SFB 372 Colloquium, Bremen, v.5, 2001, p 17-34, **Invited**.

E23. D. Ablitzer and H. Henein: "A phenomenological analysis of particulate solids in the operation of rotary reactors," The Brimacombe Memorial Symposium, G.A. Irons and A.W. Cramb, Eds., MetSoc of CIM, 2000, pp. 535-558. **Invited**.

E24. H. Henein: "Impulse Atomization: An Emerging Process and Research Tool," International Conference on Spray Deposition and Melt Atomization, IWT, Bremen, Germany, 2000, pp 443-456. **Invited.**

E25. H. Henein: "Atomization Using the Impulse Atomization Technique," Liquid Metal Atomization: Fundamentals and Practice, K.P Cooper, I.E. Anderson, S.D. Ridder and F.S. Biancaniello, Eds., TMS, Warrendale, PA, 2000, pp. 133-144, **Invited**.

E26. H. Henein, "Process Diagnostics to Monitor and Control Gas Atomization Operations," Advances in Powder Metallurgy & Particulate Materials, T.M. Cadle and K.S. Narasimhan, Eds., APMI, Princeton, NJ, 1996, pp 1-199 - 1-219, **Invited**.

E27. H. Henein: " Radial Segregation in Rotary Kilns," H.H. Kellogg International Symposium on

Quantitative Description of Metal Extraction Processes, N.J. Themelis, and P.F. Duby, Eds., TMS, Warrendale, PA, 1991, pp 311-329, **Invited**.

E28. H. Henein: "Non Traditional Techniques in Process Modelling," Int. Symp. on Materials Processing in the Computer Age, V. Voller et al, eds., TMS, Warrendale, PA, 1991, pp 45-58, **Keynote**.

E29. H. Henein and L. Biegler: "Optimization Modelling in Materials Processing," Symposium on Intelligent Processing of Materials, TMS, Warrendale, PA, 1990, pp 163-175, **Invited**.

E30. Rotary Kiln Technology , World Cement Publications, London, 1987, pp 34-42, **Invited**.

IV. Oral Presentations and Posters

IVa. Invited, Keynote and Plenary Presentations (138 Invited, K and P)

F1. H. Henein, A. Sahoo and J. Valloton, *Microstructural study of containerless solidification of Al-20wt%Ce*, Light metals Symp, Proceedings of the 61st COM, Aug 2022, Springer, pp 471-474. https://doi.org/10.1007/978-3-031-17425-4_61

F2. H. Henein, "*The Discharge Crucible Method: update on experimental design, measurements, and orifice wetting*," Diran Apelian Honorary Symposium, TMS Annual Meeting 2022, 8 pages. Invited

F3. H. Henein, "*The challenges of additive manufacturing for the resource sector*," ASM GTA Chapter, Sept 16, 2020, Virtual. Part of the Brian Ives Canada Council Lecture Series.

F4. H. Henein, T. Wolfe and A. Qureshi, "*Additive Manufacturing research for the energy sector*," Symposium on Additive Manufacturing for Energy Applications, TMS Annual Meeting, San Diego, Feb 23-27, 2020. (Invited)

F5. H. Henein, "*The challenges of additive manufacturing for the resource sector*," ASM Vancouver Chapter, Feb 20, 2020, Vancouver, BC. Part of the Brian Ives Canada Council Lecture Series.

F6. H. Henein, "*The challenges of additive manufacturing for the resource sector*," Quebec ASM Chapter, January 31, 2020, Quebec City, QC. Part of the Brian Ives Canada Council Lecture Series.

F7. H. Henein, "*Rapid solidification of aluminum alloys*," Quebec ASM Chapter at Chicoutimi, January 27, 2020, Chicoutimi, QC. Part of the Brian Ives Canada Council Lecture Series.

F8. H. Henein, "*Materials research in microgravity environment*," Montreal ASM Chapter, January 25, 2020, Montreal, QC. Part of the Brian Ives Canada Council Lecture Series.

F9. H. Henein, J. Valloton and A-A Bogno, "*Metastable dendrite morphologies in impulse atomized droplets of Al alloys*," PSDK Gibbs Award Session honouring Dr. Patrice Turchi, MS&T 2019, Portland Oregon, Sept 30 to Oct 3, 2019. (Invited)

F10. H. Henein, *"Additive manufacturing research of alloys and composites: a collaborative model"*, American Welding Society, Alberta Chapter, Edmonton, AB, Canada, March 27, 2019. (Invited)

F11. H. Henein, *"Overview of some AM Research at the UofA"*, HI-AM Conference, University of Waterloo, Waterloo, ON, Canada, May 22-23, 2018. (Invited)

F12. H. Henein, A-A. Bogno, J. Valloton, *"Quantification of microstructure to reveal the solidification path of an alloy",* HI-AM Conference, University of Waterloo, Waterloo, ON, Canada, May 22-23, 2018. (Invited)

F13. H. Henein, "*Advanced micro alloyed steels for sustainable pipelines*", CIM Distinguished Lecture, CIM Fort. McMurray Chapter, Fort. McMurray, AB, Canada, May 25, 2017. (Invited)

F14. H. Henein, "*Advanced micro alloyed steels for sustainable pipelines*", Dean's Distinguished Lecture and CIM Distinguished Lecture, Ryerson University, Toronto, ON, Canada, May 12, 2017. (Invited)

F15. H. Henein, "*Quantification of solidification path in rapid solidification using 3D measurements*", CIM Distinguished Lecture, University of Toronto, Toronto, ON, Canada, May 11, 2017. (Invited)

F16. H. Henein, "*Quantification of solidification path in rapid solidification using 3D measurements*", CIM Distinguished Lecture, McGill University, Montreal, QC, Canada, March 24, 2017. (Invited)

F17. H. Henein, "*Developing Sustainable Pipelines*", 3rd Pan American Materials Congress: Steels, Andre Cost-Silva Chair, TMS 2017 Annual Meeting, San Diego, CA, USA, February 26-March 2, 2017. (Invited)

F18. H. Henein, "*Mechanism of a rapidly solidified structure in spray forming, M. Jolly, Defects and properties of cast metals*", 3rd Pan American Materials Congress, TMS 2017 Annual Meeting, San Diego, CA, USA, February 26-March 2, 2017. (Invited)

F19. H. Henein, "Advanced microalloyed steels for sustainable pipelines", Advances in Materials and Manufacturing Symposium, COM 2017, Vancouver, BC, Canada, August 27-30, 2017. (Keynote)

F20. H. Henein, "*Quantification of solidification path in rapid solidification using 3D measurements"*, CIM Distinguished Lecture, University of British Columbia, Vancouver, BC, Canada, January 20, 2017. (Invited)

F21. H. Henein, "*Quantification of solidification path in rapid solidification using 3D measurements*", CIM Distinguished Lecture, McMaster University, Hamilton, ON, Canada, January 16, 2017. (Invited)

F22. H. Henein, "*Modelling and validation of rapidly solidified alloy structures*", 8th International Conference on the Multiscale Materials Modelling, Dijon, France, October 9-14, 2016. (Invited).

F23. H. Henein, "*An assessment of some experimental techniques for the study of rapid solidification of alloys*", COM 2016, Quebec City, QC, Canada, September 12, 2016. (Invited)

F24. H. Henein, "*An assessment of some experimental techniques for the study of rapid solidification of alloys*", Cranfield University, UK, July 11, 2016. (Invited)

F25. A-A. Bogno, C. Riveros, U. Dahlborg, M. Calvo-Dahlborg, N. Ciftci, H. Henein, "*Rapid solidification characteristics of bulk metallic glasses*", COM 2015, Toronto, ON, Canada, August 23-26, 2015. (Keynote)

F26. H. Henein, "*Characterizing melt and solidified structure to diagnose additive manufacturing processes*", Lawrence Livermore Laboratories, Livermore, CA, USA, February 12, 2015. (Invited)

F27. H. Henein, A. Ilbagi, A-A. Bogno, A. Maitre, "*University of Alberta contribution to NEQUISOL III Project*", Ecole National Superieure des Mines de Paris (Mines Paris Tech), Paris, France, December 18, 2014. (Invited)

F28. H. Henein, Ch-A. Gandin, "*Estimation of eutectic and primary phase undercoolings of rapidly solidified alloy powders*", EPFL, Lausanne, Switzerland, December 15, 2014. (Invited)

F29. H. Henein, "*The University of Alberta: The Dual Degree Program*", Ecole National Superieure des Industries Chemiques, Nancy, France, December 11, 2014. (Invited)

F30. H. Henein, "*The University of Alberta: The Dual Degree Program*", Ecole National Superieure

des Mines de Nancy, Nancy, France, December 8, 2014. (Invited)

F31. H. Henein, "*Energy Materials at TMS*", Energy Materials 2014, Xi'an, Shaanxi Province, China, November 4-6, 2014. (Plenary)

F32. H. Henein, D.G. Ivey, J. Luo, J.B. Wiskel, "*Development of microalloyed steel for the oil and gas industry*", Energy Materials 2014, Xi'an, Shaanxi Province, China, November 4-6, 2014. (Plenary)

F33. A. Bogno, A. Maitre, H. Henein, Ch-A. Gandin, "*Characterization of rapidly solidified metallic alloys using combination of experiments and modelling*", Light Metals Symposium, COM 2014, Vancouver, BC, Canada, September 28 - October 1, 2014. (Keynote)

F34. H. Henein, "*The evolution of engineering education: The Canadian MSE experience*", Colorado School of Mines, Golden, CO, USA, September 25, 2014. (Invited)

F35. H. Henein, "*The evolution of engineering education: The Canadian MSE experience*", Worcester Polytechnic Institute, Worcester, MA, USA, September 22, 2014. (Invited)

F36. H. Henein, "*Quantification of 3D metastable structures to identify solidification path*", Federal University of São Carlos, São Paulo, Brazil, July 24, 2014. (Invited)

F37. H. Henein, "*The quantitative analysis of metastable solidified structures*", University of Waterloo, Waterloo, ON, Canada, July 18, 2014. (Invited)

F38. A-A.Bogno, S.Yin, P.Wang, D.G. Ivey, H. Henein, "*Microstructural analysis of rapidly cooled aluminum copper with minor scandium additions*", Federal University of São Carlos, São Paolo, Brazil, March 19, 2014.

F39. W. Huang, J. Luo, J.B. Wiskel, H. Henein, J. Jordan, "*Microstructure of Low Alloy Steels for Casing Application in Sour Environments*", Symposium on Materials Aspects of Corrosion and Fouling in Oil Refining and Exploration, TMS 2014 Annual Meeting, San Diego, CA, USA, February 16-20, 2014.

F40. H. Henein, "*International opportunities for engineering students at the University of Alberta*", The Centre for Engineering Education Development, Hokkaido University, Sapporo, Japan, January 26, 2014. (Invited)

F41. H. Henein, "*The next generation of advanced steels for sustainable pipelines*", Canadian Senior Engineers of Canada, Edmonton Chapter, Edmonton, AB, Canada, October 17, 2013. (Invited)

F42. A-A. Bogno, P. Delshad Khatibi, H. Henein, Ch-A.Gandin, "*Quantification of Primary and Eutectic undercoolings of Impulse Atomized Al-Cu droplets*", Light Metals for Transportation, Materials Science & Technology Conference 2013 (MS&T'13), October 2013.

F43. H. Henein, "*The development of an ICME approach to the run out table for microalloyed steels*", Universite de Rouen, France, November 27, 2012. (Invited)

F44. H. Henein, "I*ndustrial involvement in academia*", The Anthony Pengidore Memorial Symposium, Materials Science & Technology Conference 2012 (MS&T'12), Pittsburgh, PA, USA, October 8, 2012. (Invited)

F45. H. Henein, "*Undercooling of droplets and of spray formed deposits of binary alloys*", Symposium "Solidification" en l'honneur de Gerard Lessoult, Ecole des Mines de Nancy, Nancy, France, September 12-14, 2012. (Invited)

F46. H. Henein, "*Measurement of the physical properties of melts using the discharge crucible method*", University of Bremen, Bremen, Germany, May 8, 2012. (Invited)

F47. T. Gancarz, W. Gasio, H. Henein, "*The crucible discharge method for making measurements of the physical properties of melts an overview*", 18th Symposium on Thermophysical Properties, Boulder, CO, USA, June 24-29, 2012. (Invited)

F48. Ch-A. Gandin, D. Tourret, T. Volkmann, D M. Herlach, **A. Ilbagi,** H. Henein, "*Solidification Modeling: from Electromagnetic Levitation to Atomization Processing*", Materials Research in Microgravity, TMS 2011 Annual Meeting, 2011. (Invited)

F49. D.M. Herlach, S. Klein, P. Galenko, Ch-A. Gandin, D. Tourret, H. Henein, A. Ilbagi, A. Garcia-Escorial, "*Non-equilibrium solidification, modeling for microstructure engineering of industrial alloys (NEQUISOL)*", International Astronautical Congress, Cape Town, South Africa, October 2011.

F50. A. Ilbagi, P. Delshad Khatibi, H. Henein, R. Lengsdorf, D.M. Herlach, "*Microstructural analysis of rapidly solidified particles of Al-Ni alloys*", ISPS 4, Bonn, Germany, July 2011. (Plenary)

F51. H. Henein, "T*he use of 3D characterization in Materials Process Engineering*", 23rd CMSC 2011, Kelowna, BC, Canada, June 2011. (Metal Chemistry Lecture)

F52. H. Henein, "*An efficient method to measure physical properties of melts*", Roderick Guthrie Honorary Symposium on Process Metallurgy, Montreal, QC, Canada, June 6-9, 2011. (Plenary)

F53. H. Henein, "O*n the Generation of Reliable Experimental Data for the Validation of Rapid Solidification Models*", CEMEF, Mines Paris Tech, Sophia-Antipolis, February 2, 2011.

F54. H. Henein, "*Quantitative analysis of alloy structures solidified under diffusion limited conditions*", SOL-EML International Topical Team on Solidification of Containerless Undercooled Melts, Germany Space Agency (DLR), Cologne, Germany, July 9-10, 2010. (Invited)

F55. H. Henein, "*An overview of rapid solidification research at the University of Alberta",* International Topical Team Meeting, German Space Agency (DLR), Cologne, Germany, July 19, 2010.

F56. A. Ilbagi, H. Henein, "*Impulse atomization of melts: An instrumented drop tube*", 38th COSPAR Scientific Assembly, Bremen, Germany, July 18-25, 2010.

F57. A. Ben-zvi, H. Henein, J.B. Wiskel, B. Binesh, "*Control of steel microstructure during laminar cooling*", MITACS/CORS 2010 Annual Meeting, Edmonton, AB, Canada, May 25-28, 2010.

F58. H. Henein, "*Non-Equilibrium solidification of A1 alloys in a microgravity environment*", Sounding Rockets Session, Workshop on Suborbital Platforms and Nanosatellites, St. Hubert, QC, Canada, April 14-16, 2010.

F59. H. Henein, "R*apid solidification of A1-Cu, A1-Fe- and A1-Ni particles under diffusion-limited conditions*", Workshop on Suborbital Platforms and Nanosatellites, CSA, St. Hubert, QC, Canada, April 14-16, 2010.

F60. J.B. Wiskel, H. Henein, "*An overview of microstructural characterization and processing research on pipeline steels at the University of Alberta*", Materials Issues in Pipeline Engineering Research Pathway for Future Collaborations Workshop, University of Calgary, Calgary, AB, Canada, March 30, 2010.

F61. J. Johansson, A. Ilbagi, D. Thornton, H. Henein, "*Visualization and image processing of atomized metal particles*", UofA Visualization Group, University of Alberta, Edmonton, AB, Canada, March 18, 2010. (Invited)

F62. H. Henein, "*Non-equilibrium solidification in microgravity environment*", CaNoRock Symposium, University of Alberta, Edmonton, AB, Canada, February 22, 2010. (Invited)

F63. H. Henein, "*3-D visualization of rapidly solidified A1-Cu and A1-Fe structures*", Novelis, Kingston, ON, Canada, October 23, 2009. (Invited)

F64. H. Henein, "*A review of single fluid atomization of melts using droplets and streams*", SDMA

2009 ICSF VII, Bremen, Germany, September 7-9, 2009. (Keynote Lecture)

F65. H. Henein, J. Chen, "*The role of undercooling in the microstructure evolution of impulse atomized A1-Cu and A1-Fe powders*", SDMA 2009 ICSF VII, Bremen, Germany, September 7-9, 2009.

F66. J. Chen, H. Henein, "The microstructure evolution of the spray deposited A1-Fe using impulse atomization", SDMA 2009 ICSF VII, Bremen, Germany, September 7-9, 2009.

F67. J. Pepin, D.G. Ivey, J.B. Wiskel, H. Henein, C. Penniston, J.D. Boyd, "*The effects of manipulating heat input and current waveform on submerged arc bead-on-plate weld profiles*", COM 2009, Sudbury, ON, Canada, August 23-26, 2009.

F68. H. Henein, "*3D-Microtomography: A Unique Tool in Solidification Research*", Ryerson University, November 27, 2008.

F69. H. Henein, J. Chen, A. Ilbagi, "Non-Equilibrium Solidification, Modelling for Microstructure Engineering of Industrial Alloys, ESA-MAP AO 99 – 023, NEQUISOL II: University of Alberta Contribution", ESTEC-ESA, November 21, 2008.

F70. H. Henein, "*3D-Microtomography of Al-Cu and Al-Fe rapidly solidified powders*", University of Alberta Visualization Group, Oct 16, 2008.

F71. H. Henein, "*Micro-segregation and porosity in the non-equilibrium solidification of aluminum alloys, Aluminium Technology Centre*, NRC, Chicoutimi, Quebec, October 9, 2008.

F72. H. Henein, "The role of Processing Variables on the Cooling Rate and Microsegregation of Rapidly Solidified Droplets", Istanbul Technical University, Istanbul, Turkey, May 23, 2008. (Invited)

F73. H. Henein, "A novel method to dynamically measure surface tension of melts", Instanbul Technical University, Istanbul, Turkey, May 27, 2008. (Invited)

F74. H. Henein, "A New Method to Dynamically Measure the Surface Tension, Viscosity and Density of Melts", Institute of Metallurgy and Materials Science, Polish Academy of Science, Krakow, Poland, May 15, 2008.

F75. H. Henein, "Single Fluid Atomization as a Tool in Studying Rapid Solidification", 2005 MMPC Annual Review of Progress Meeting, McGill University, Montreal, QC, December 9, 2005.

F76. H. Henein, "Impulse Atomization and Deposition of Metals", Sino-German Workshop on Spray Forming, Beijing, China, Oct. 10-12, 2005.

F77. H. Shang, J.B. Wiskel, J.F. Forbes, H. Henein, "*New Opportunities in Optimization and Control of Metals Processing*", Process Control and Optimization in Ferrous and Nonferrous Industry, Materials Science and Technology 2003, November 10, 2003. (Plenary)

F78. H. Henein, "Droplets: an indispensable tool in process engineering research", Manfred Wulf memorial Symposium, ISSTech 2003 Conference, March 2003.

F79. H. Henein, "Single Fluid Atomization: A Modern Research Tool in Materials Process Engineering", McGill University, Montreal, September 26, 2002.

F80. H. Henein, "Powders, Granules and Droplets in Materials Processing", Keynote Lecture, CMSC, Winnipeg, June 9-11, 2002.

F81. H. Henein, "Light Metals Research at the Advanced Materials and Processing Laboratory", German-Canadian Workshop at the Conference of Metallurgists, Toronto, August 29, 2001.

F82. H. Henein, "Process dynamics of materials processing operations - Controlled gas-droplet transport: new research opportunities" SINTEF Materials Technology, Trondheim, Norway, May 23, 2001.

F83. H. Henein, "Process dynamics of materials processing operations - Impulsing a melt: an

innovative new technique in atomization", SINTEF Materials Technology, Trondheim, Norway, May 22, 2001.

F84. H. Henein, "Materials Science and Engineering: Is there a Future?", 2001 Student Career Forum, 130th TMS Annual Meeting, New Orleans, February 11-14, 2001.

F85. H. Henein, "Materials Process Modelling: A General Tool or a Specialty?" PMP II, International Conference on the Processing of Materials for Properties, November 5-8, 2000.

F86. D. Ablitzer, H. Henein, "A phenomenological analysis of particulate solids in the operation of rotary reactors", JKB Memorial Conference, Vancouver, October, 2000.

F87. H. Henein, "Impulse Atomization: An Emerging Process and Research Tool", International Conference on Spray Deposition and Melt Atomization, Bremen, Germany, June 26-28, 2000.

F88. H. Mostaghaci, H. Henein, "The Global Culture of Materials Engineering", NRCan MMS Senior Managers Conference, Ottawa, June 19-20, 2000.

F89. H. Henein, "Atomization Using the Impulse Atomization Technique", Invited Paper, Symposium on Liquid Metal Atomization: Fundamentals and Practice, TMS Annual Meeting, March 2000.

F90. H. Henein, "Materials Science and Engineering: Challenges Ahead", Dept. of Metals and Materials Engineering, University of British Columbia, Vancouver, BC, January 20, 2000.

F91. H. Henein, "Single Fluid Atomization: An Emerging Processing Technique in Materials Research", INSA de Lyon, Lyon, France, July 20, 1999.

F92. H. Henein, "*Computer Aided Instruction in Materials Science and Engineering Education*", Ecole des Mines, Nancy, France, July 5, 1999.

F93. H. Henein, "*The Impulse Atomization Technique: A New Research Tool in Materials Process Engineering*", International Conference on Spray Deposition and Melt Atomization, Bremen, GERMANY, June 3, 1999; Ecole des Mines, Nancy, France, July 6, 1999.

F94. H. Henein, "*Diagnostics for Atomization Processing of Molten Metals*", Dalhousie Unibersity, DalTech, June 25, 1998.

F95. C. Townsend, H. Henein, S.F. Corbin, P. Apte: "*Characterization of the Metal-Ceramic Interface in the Liquid Metal Processing of MMCs*", Composites at Lake Louise, Lake Louise, AB, October 12-16, 1997.

F96. "T*he Application of the Impulse Atomization Process for the Production of Spherical Bronze Powders*", Eckart Werke GmB, Velden, Germany, Dec. 6, 1996.

F97. "*The Impulse Atomization Process: A Novel Technique to Control Droplet Size Distribution and Microstructure*", McMaster University, Hamilton, Ontario, July 5, 1996, and AECL Research Labs, Chalk River, July 17, 1996.

F98. "*Process Diagnostics to Monitor and Control Gas Atomization Operations*", Symposium on Process Modelling of P/M Operations, PM2 TEC World Congress, June 16 - 21, 1996, Washington, DC.

F99. "*Segregation Mechanisms of P/M Powder in Processing*", General Electric Aircrafts, Evendale, OH, February 19, 1996.

F100. "*New Processing Approaches to Upgrade Contaminated Aluminum Scrap*", Alumax of South Carolina, North Charleston, SC, February 16, 1996.

F101. "*The Segregation Tendencies of Particulate Systems in Materials Processing*", University of Alabama, Tuscaloosa, AL, February 9, 1996.

F102. "*Expert Systems*", 20th Advanced Technology Symposium on Computing Now and in the Near Future, Iron and Steel Society, St. Petersburg Beach, Florida, Dec. 6, 1995.

F103. "*Computer Aided Education in Materials Science and Engineering Education*", Faculty of Engineering, University of Alabama, Tuscaloosa, Nov. 27, 1995.

F104. "*Microstructural Refinement of Metals and Alloys Using Atomization Processing*", Dept of Metallurgical & Materials Engineering, University of Alabama, Tuscaloosa, Dec., 1, 1995.

F105. "*On the Control of Spray Characteristics in the Atomization of Molten Metals*", Alcoa Technical Center, Pittsburgh, PA, November 17, 1994.

F106. "*On-Line Sensors for Real Time Analysis of Molten Metal Gas Atomization*", APMI Pittsburgh Section Symposium, November 18, 1993.

F107. "*The Impulse Atomization Process for Engineering the Size Distribution of Molten Metal Droplets*", APMI Pittsburgh Section, October 20, 1993.

F108. "*An IPM Approach to Gas Atomization of Molten Metals*", Concurrent Engineering Technology, Inc., Johnstown, PA, Sept. 22, 1993.

F109. C.M.Boyko, T.H. Le, H. Henein, "*EPCS and PCSV Laser Probe Measurements of Particle Size and Velocity During the Gas Atomization of Molten Metals*", Engineering Foundation Conference on The Control of Particulate Processes, Santa Barbara, January 20-25, 1993.

F110. J. Suni, H. Henein, "T*he Dispositioning of Continuously Cast Steel Slabs using a Frame Based Knowledge Based System*", 14th Advanced Technology Symposium on The Application of Expert Systems in the Iron and Steel Industry, ISS, Hamilton, Ont., Sept. 15, 1992.

F111. F.R. Dax, I. Hulthage, H. Henein: "*The Development of an Intelligent Manufacturing Cell for the Open-Die and Radial Forging of Alloy 718 Ingots*", 14th Advanced Technology Symposium on The Application of Expert Systems in the Iron and Steel Industry, ISS, Hamilton, Ont., Sept. 14, 1992.

F112. "*The Development of an Intelligent Manufacturing Cell for the Open-Die and Radial Forging of Alloy 718 Ingots*", Metals and Materials Engineering Dept. and the Centre for Metallurgical Process Engineering, University of British Columbia, Vancouver, BC, May 4, 1992.

F113. " *Radial Segregation in Rotary Kilns*", H.H. Kellogg International Symposium on Quantitative Description of Metal Extraction Processes, Columbia University and TMS, Arden House, Harriman, NY, Sept. 4-6, 1991.

F114. "*A Survey on the Use of Expert Systems in the Iron and Steel Industry*", Control Group, Chemical Engineering, University of Alberta, March 20, 1991.

F115. "*Non Traditional Techniques in Process Modelling*", Keynote Lecture, Int. Symp. on Materials Processing in the Computer Age, V. Voller et al, eds., TMS Annual Meeting, New Orleans, Feb. 1991. (Keynote)

F116. "*Research in Process Metallurgy*", Sherritt Gordon Res. Labs, Fort Sask., AB, Jan 31, 1990.

F117. "Optimization & Modelling of Continuous Casting Processes", University of Minnesota, Jan. 26, 1990.

F118. H. Henein, L. Biegler, "*Optimization Modelling in Materials Processing*", Symposium on Intelligent Processing of Materials, TMS Fall Meeting, Indianapolis, Oct 1989.

F119. "*Diagnostics and Analysis of Atomization and Powder Injection Processes*", SOHIO Advanced Materials, Niagra Falls, NY, January, 1989.

F120. "*Modelling Methods in Materials Processing*", Department of Petroleum, Mining and Metallurgical Engineering, University of Alberta, Edmonton, Alberta, November 25, 1988.

F121. "*Modelling and Diagnostics in Particulate Processing Research: Powder Injection and Molten Metal Atomization*", Air Products, Allentown, PA, October 11, 1988.

F122. "Modelling Methods in Materials Processing", The Hudson-Mohawk Section of AIME and

Eastern New York Chapter of ASM Int., Albany, NY, September 13, 1988.

F123. "*Atomization Processing and Intelligent Sensors for Molten Metals and Alloys*", Noranda Research Center, Pointe Claire, Quebec, September 2, 1988.

F124. "*Advanced Methods in Modelling Continuous Casting*", Dept. of Metallurgy and Materials Science, McMaster University, Hamilton, April 25, 1988.

F125. "*Optimization Modelling for Sequencing and Heat Flow in Continuous Casting*", Research Center, Inland Steel, Chicago, December 11, 1987.

F126. "*Atomization of Molten Metal Using the Coanda Effect*", Sandia National Laboratories, Livermore, CA, December 3, 1987.

F127. "*Heat Transfer in Scrap Preheating Systems*", Workshop on EAF Steelmaking and Scrap Melting, SISI/CMP sponsors, July 6-7, 1987, Toronto, Canada.

F128. "*Radial Segregation in Rotary Kilns: A Review*", Third Symposium of the International Rotary Kiln Users' Association, Ochos Rios, Jamaica, May 15 - 17, 1987.

F129. "A*n Integrated Approach to Atomization Processing*", GE CR&D, Schen., NY, Nov. 1986.

F130. "URI: Metal-Matrix Composites Program at C-MU", SOHIO Advanced Materials, Niagra Falls, NY, Oct 1986.

F131. "*Visualization of Molten Metal Atomization*", Pittsburgh Section of American Metal Powder Federation, March 1986.

F132. "*Physical and Mathematical Modelling*", 1st US-India Workshop on Iron and Steel Research, National Science Foundation, Ranchi, India, January 6-10, 1986.

F133. "*Physical & Mathematical Modelling in Materials Processing: Atomization of Molten Metals*", Alcoa Technical Center, Pittsburgh, PA, November 21, 1985.

F134. "*Atomization of Molten Metals Using The Coanda Effect*", University of Pittsburgh, Pittsburgh, PA, September 26, 1985.

F135. "*New Research Aspects in Metallic and Non-Metallic Processing*", Pittsburgh Chapter of the American Ceramics Society, Pittsburgh, PA, April 18, 1985.

F136. H.Henein, G.W. Warren, "T*he Kinetics of the Ferric Chloride Leaching of Galena and Sphalerite*", R & D Center,St. Joe Minerals Corporation, Monaca, PA, April 22, 1983.

F137. "C*urrent Research in Process Metallurgy at Carnegie-Mellon University*", Sensors Group, Robotics Institute, Pittsburgh, PA, April 8, 1983.

F138. "*Bed Behavior in Rotary Kilns*", Department of Mining and Metallurgical Engineering, McGill University, Montreal, QC, Canada, March 23, 1981.

IVb. Conference and Symposia Presentations

From 1973 to 2019, over 330 Oral and poster presentations given at National and International Conferences and Symposia including:

- 8th International Conference on the Multiscale Materials Modelling
- 14th Advanced Technology Symposium on The Application of Expert Systems in the Iron and Steel Industry
- Additive Manufacturing Symposia
- AIME Annual Meetings
- AISTech Conferences
- American Ceramics Society Annual Meeting
- American Welding Society, Edmonton Chapter

• Canadian Chemical Engineering Conferences
• Canadian Materials Science Conferences
• Canadian Welding Association Conference
• CaNoRock Symposium
• CIM Distinguished Lectures: CIM Fort McMurray Chapter, McGill University, McMaster University, Ryerson University, University of British Columbia, University of Toronto
• Composites at Lake Louise
• Conferences of Metallurgists
• DSEC VII
• Electric Furnace Conferences
• Engineering Foundation Conference on The Control of Particulate Processes
• Euro-Materials Week
• FabTech
• HI-AM Conferences, University of Waterloo and UBC
• ICASP 5, 6 and 7
• International Astronautical Congress
• International Conferences on 3D Materials Science
• International Conferences & Exhibitions on Advanced & Nano Materials
• International Conferences on Advances in Soldification Processing
• International Conferences on Pipelines
• International Conferences on Powder Metallurgy & Particulate Materials
• International Symposia on Physical Sciences in Space
• International Symposia on Metastable, Amorphous and Nanostructured Materials (ISMANAM)
• Ironmaking and Steelmaking Conferences
• ISS Tech Conferences
• IWSSTP 13 1nd 14
• Joint Canada-Japan Workshop on Composites
• Materials Science and Technology Conferences
• Modelling of Casting, Welding and Advanced Solidification Processes
• Microalloyed Steel Symposia
• Microscopical Society of Canada Conferences
• NACE International Northern Area Western Conferences
• NRCan MMS Senior Managers Conference
• Pacific Rim International Congress on Advanced Materials and Processing
• Pan American Materials Congress
• PM2 Tech World Congresses
• Processing Materials for Properties Conferences
• Quantitative InfraRed Thermography Conference
• Spray Deposition and Metal Atomization Conferences
• Symposium on Thermophysical Properties
• The Hudson-Mohawk Section of AIME and Eastern New York Chapter of ASM Int
• TMS Annual Meetings
• Workshops on Suborbital Platforms and Nanosatellites
• World Conferences on Non-Destructive Testing
• Young Pipeliners Association of Canada Pipeline Conferences

IVc. Workshops and Short Courses

• 1st US-India Workshop on Iron and Steelmaking, SAIL, Ranchi, India, 1985.

- Short Course on Process Modelling of Materials Operations, Dept. de Ciencia de Materiales, Universidad Simon Bolivar, Caracas, Venezuela, 1990.
- Workshop on Microalloyed Steels for Linepipe Applications, Tubular Research Centre, Xi'An, PR China, 2000.
- Canada-German Workshop, Euro Materials Week, Munich, Germany, September 28, 2000.
- Canada-German Workshop, Conference of Metallurgists, Toronto, August 29, 2001.
- Short Course on "Melt Atomization: Gas or Single Fluid Approaches?", Bremen, May 27 – 31, 2002
- Design, Manufacturing and Applications of Composites, 5th Joint Canada-Japan Workshop on Composites, Sept 2004.
- Co-Chair of the Workshop on the Micro-Tomography Applications, Canadian Light Source, Saskatoon, Sask., Aug. 10-11, 2005.
- Sino-German Workshop on "Spray Forming of New Materials", Beijing, China, Oct. 10-12, 2005.
- "Microstructural evolution of solidifying melt droplets", University of Bremen, Bremen, Germany, May 7 – 11, 2012.
- "2013 Pipeline Materials Welding Workshop", University of Alberta, Edmonton, Alberta, May 29-30, 2013.
- 2nd Annual "2014 Pipeline Materials workshop", University of Alberta, Edmonton, Alberta, May 29-30, 2014.
- 3rd Annual "2015 Pipeline Materials for Geotechnical Hazards", University of Alberta, May 27, 2015.
- 4th Annual "2016 Pipeline Materials Workshop: Materials for Pipeline Integrity", June 3rd 2016.
- 5th Annual "2017 Pipeline Materials Workshop: Steels for Sour Service" June 1, 2017.
- 6th Annual "2018 Pipeline Materials Workshop: Low Temperature Toughness of Pipeline Steel" June 19, 2018.
- 7th Annual "2019 Pipeline Materials Workshop: Pipeline Performance: Best Practices" May 30, 2019.
- 8th Annual "2021 Pipeline Materials Workshop: Weld Integrity and Performance" June 9, 10, 2021.
- 9th Annual "2022 Pipeline Materials Workshop: Pipeline Sustainability for Alternate Energy Transport" June 29, 30, 2021.
- 10th Annual "2023 Pipeline Materials Workshop: Pipeline Performance: Best Practices" June 14, 15, 2023.
- 11th Annual "2023 Pipeline Materials Workshop: Fracture Toughness & CTOD Testing of Heavy Guage Line Pipe," June 14, 15, 2023.
- 12th Annual "2023 Pipeline Materials Workshop: Precipitate Characterization in Microalloyed and Low Alloy Steel Skelp, Pipe and Welds" June 14, 15, 2023.

IVd. Refereed Conference Papers (221 Conf. papers)

G1. **Akankshya Sahoo**, Jonas Valloton, Abdoul-Aziz Bogno, Hani Henein, "From Equilibrium to Partitionless Solidification: A Solute Trapping Map for Al-10S0.4Sc (wt%)," TMS Light Metals, 2026, 10 pages.

G2. **S.R. Waghmare, S. Singh, S. Butt**, H. Henein, K. Meszaros, A.J. Qureshi, "Plasma Transferred Arc Additive Manufacturing of High-Chromium White Iron: Parameter Optimization and Interpass Temperature Control for Repair," Proceedings of the ASME 2025 International Mechanical Engineering Congress and Exposition, IMECE2025, November 16–20, 2025, Memphis, TN, IMECE2025-168178.

G3. **D. Diaz**, A-A Bogno, M. Dias, J. Valloton, D.G. Ivey, H. Henein, "Effect of Ce Addition in Hypereutectic Al-Si Alloys During Raid Solidification," Proceedings of the 62nd Conference of Metallurgists, COM 2023, https://doi.org/10.1007/978-3-031-38141-6_69, pp 505-507.

G4. **A. McDonald**, A. Shao, K. Meszaros, A. Qureshi, M. Rappaz, T. Wolfe, H. Henein, "*Microstructure Map of Rapidly Solidified 17-4PH Stainless Steel*," MetSoc Conf. Proceedings, 2023, https://doi.org/10.1007/978-3-031-38141-6_67, pp489 - 492**.**

G5. J. Barry Wiskel, **R. Karl**, **M. Emakapor**, F. Fazeli, C. Cathcart, T. Zhou, S. Yu, D.G. Ivey and H. Henein, "*Development and application of a thermal-microstructure model of laminar cooling of an API X70 microalloyed steel*," International Conference on Processing & Manufacturing of advanced Materials: Processing, Fabrication, Properties, Applications, 2023, Vienna, Austria, 6 pages.

G6. J. Valloton, **A. Sahoo**, **M. da Silva Dias Filho**, S. Vogel and H. Henein, "Microstructural evaluation of containerless solidification of Al-Ce alloys," John A. Dantzig Symposium, TMS Annual Meeting, 2023, San Diego, CA, USA, March 19-23, 2023, 2 pages.

G7. **J.M. da Silva Dias Filho, A. Batool, Y. Li**, A. Qureshi, H. Henein, "*Effect of TiB2 in an Al-Cu-Sc alloy in the Hybrid investment casting process*," HI-AM. Montreal, June 21-22, 2022

G8. **A. Shao, J. Borrelli**, K. Meszaros, J. Valloton, A. Qureshi, H. Henein," *Modelling of a single pass wire and arc additive manufacturing*," HI-AM Montreal, June 21-22, 2022

G9. **G. Bonias**, H. Henein, T.B. Wolfe, "*Thermal and residual strss modeling of functionally graded deposits using PTAAM*," HI-AM. Montreal, June 21-22, 2022

G10. **R. Samson**, **T. Lehmann**, T.B. Wolfe, H. Henein, A. Qureshi, "*Analysis of repair interface automated hybrid additive-subtractive manufacturing process*," HI-AM Montreal, June 21-22, 2022

G11. **A. Akankshy**, A-A Bogno, J. Valloton, D.G. Ivey, H. Henein, "Rapid solidification of Al-10Si-0.4Sc (wt%): precipitation behavior and its influence on mechanical properties," HI-AM Montreal, June 21-22, 2022

G12. **A. E. McDonald**, H. Henein and T.B. Wolfe, "*Effect of Cooling rate on the microstructure of Rapidly solidified 17-4PH Stainless Steel*," HI-AM Montreal, June 21-22, 2022

G13. J. Valloton*, N. Mahdi, **L. Rabago, J. Chung** and H. Henein, "*In situ processing of rapidly solidified Al-33wt%Cu droplets*," HI-AM. Montreal, June 21-22, 2022

G14. **D. Rose**, J. Forth, H. Henein, T.B. Wolfe, A.J. Qureshi, "*Denuded region formation in NiBSi-WC metal matrix composites deposited by plasma transferred arc additive manufacturing*," HI-AM, Montreal, June 21-22, 2022

G15. J. Valloton, N. Mahdi, L. Rabago, J. Chung, H Henein, "*In-situ solidification of eutectic Al-33wt%Cu droplets*," ICASP6, IOP Conference Series, Le Bischenberg, France, 20-24 June, 2022.

G16. J. Valloton and H. Henein, "*Microstructural study of containerless solidification of Al-Ce alloys*," ICASP6, IOP Conf Series, Le Bischenberg, France, 20-24 June, 2022.

G17. **E. Ahmed**, H. Henein, A. Qureshi, J. Liu, "*Development of Aluminum-based Dissolvable Alloys for Hydraulic Fracturing Applications*," TMS 2022 Annual Meeting & Exhibition Supplemental Proceedings, 2022, https://doi.org/10.1007/978-3-030-92381-5_105, pp 1101-1114.

G18. J. Valloton, N. Mahdi, **L. Rabago**, H. Henein, "*In situ processing of rapidly solidified Al-33wt%Cu droplets*," TMS Annual Meeting 2022, 7 pages.

G19. **D. Diaz**, A-A. Bogno and H. Henein, "*Modification of primary Si morphology in hypereutectic Al-Si by rapid solidification and alloying*," Conference of Metallurgists, August 2021, virtual conference, 4 pages.

G20. C.E.S. Junior, R.V. Reyes, L.F. Gomes, J.E. Spinelli, A.-A. Bogno, and H. Henein, "*Evaluation of Microstructures and Hardness of Al-10Si-0.45Mg-0.4Sc Alloy Powders*," Light Metals", 50th Edition, L. Perander, Editor TMS, Springer, 2021, pp 270-276.

G21. A-A Bogno, **M.C. Tamboli, A. Sabouraud**, A.J. Qureshi, H. Henein, "*Manufacturing of 3D*

lattice structures by hybrid investment casting," 59th COM, ***ISBN: 978-1-926872-47-6,*** August 2020, Paper 826801, 19 pages.

G22. J. Valloton, A.-A. Bogno and H. Henein, "*4D characterization of solidification in Al-20Zn and Al-20Zn-0.1Cr droplets*," 59th COM, ***ISBN: 978-1-926872-47-6,*** August 2020, Paper 830699, 5 pages.

G23. **D. D. Jimenez**, A-A. Bogno, and H. Henein,"*Modifying the morphology of Si in hypereutectic Al-Si alloys*," 59th COM, ***ISBN: 978-1-926872-47-6,*** August 2020, Paper 826801, 10 pages.

G24. **M. Dias, A.-A. Bogno**, H. Henein, J.E. Spinelli and A. Garcia, "*Effect of Bi on the rapidly solidified microstructure and properties of hypoeutectic Al-Si*," 59th COM, ***ISBN: 978-1-926872-47-6,*** August 2020, 826713, 7 pages.

G25. **A-A. Bogno**, **W. Hearn**, J.E. Spinelli, **J. Valloton**, H, Henein, "*Quantification of microstructure to reveal the solidification path of an alloy*", Proceedings of the 5th International Conference on Advances in Solidification Processes (ICASP-5), 7 pages, Salzburg, Austria, June 17-21, 2019.

G26. **A-A. Bogno**, **J. Valloton**, H. Henein, "*Rapid solidification of A1-Cu droplets of eutectic composition*", Proceedings of the 5th International Conference on Advances in Solidification Processes (ICASP-5), 7 pages, Salzburg, Austria, June 17-21, 2019.

G27. B.S. Rupal, T. Singh, T. Wolfe, H. Henein, A.J. Qureshi*, "Introducing a framework for geometric process capability estimation of additive manufacturing systems",* Proceedings of the 52nd CIRP Conference on Manufacturing Systems, , Ljubljana, Slovenia, June 12-14, 2019.

G28. J.B. Wiskel, A. Linchieh, H. Henein, *"Assessment of oxide descaler functionality in a steel hot rolling mill using infrared video imaging"*, Proceedings of the 14th Quantitative InfraRed Termography Conference, 7 pages, Berlin, Germany, June 25-29, 2018.

G29. J.B. Wiskel, **J. Ma**, D.G. Ivey, H. Henein, *"Transverse strain aging behaviour of uncoated thick walled X70 UOE microalloyed steel pipes"*, IPC2018-78102, Proceedings of 12th International Pipeline Conference (IPC2018), 7 pages, Calgary, AB, Canada, September 24-28, 2018.

G30. J.E. Spinelli, **W. Hearn**, **A-A. Bogno**, H. Henein, "*A general formulation of eutectic silicon morphology and processing history*", Martin O., Ed, Light Metals 2018, 381-388, Proceedings of the TMS 2018 Annual Meeting & Exhibition, Phoenix, AZ, USA, March 11-15, 2018.

G31. **A-A. Bogno***,* H. Henein, M. Gallerneault, *"Design and processing conditions of hypoeutectic Al-Cu-Sc alloys for maximum benefit of Scandium",* Martin O., Ed, Light Metals 2018, 1609-1616, Proceedings of the TMS 2018 Annual Meeting & Exhibition, Phoenix, AZ, USA, March 11-15, 2018.

G32. T. Wolfe, **J.M. Rojas**, **D. Rose**, A. Qureshi, G. Fisher, H. Henein, "*Performance of PTA AM components for mining and energy applications*", Alloy Development and Powder Manufacture for Additive Manufacturing Symposium, Supplemental Proceedings of the TMS 2018 Annual Meeting & Exhibition, Phoenix, AZ, USA, March 11-15, 2018.

G33. **M. Mohammadijoo**, L. Collins, R. Lazor, H. Henein, D.G. Ivey*", Impact of martensite constituent formation on the fracture toughness of the HAZ of HSLA steel"*, CanWeld 2017, 9 pages*,* Montreal, QC, Canada, September 13-14, 2017.

G34. **A-A. Bogno**, **J. Valloton**, M. Rappaz, H. Henein, "*A study of rapidly solidified A1-Cu eutectic, light metal alloys: Processing for performance*", Proceedings of COM 2017, 10 pages, Vancouver, BC, Canada, August 27-30, 2017.

G35. **A-A. Bogno**, **J. Valloton**, H. Henein, M. Gallerneault, D.M. Herlach, "*Effect of hypoeutectic Sc additions to A1-4.5 wt% Cu under different cooling rates*", Proceedings of the 3rd Pan American Materials Congress, TMS 2017 Annual Meeting (The Minerals, Metals & Materials Series), 9

pages, doi: 10.1007/978-3-319-52132-9_36, San Diego, CA, USA, February 26-March 2, 2017.

G36. **J. Valloton**, **A-A. Bogno**. D. Auras, M. Bedel, G. Reinhart, H. Henein, "*Scandium effect on undercooling and dendrite morphology of Al–4.5 wt.% Cu droplets, Applications of Solidification Fundamentals"*, A. Phillion, A. Genau, eds., 3rd Pan American Materials Congress, TMS 2017 Annual Meeting, San Diego, CA, USA, Feburary 26-March 2, 2017.

G37. T. Wolfe, G. Fisher, H. Henein, "*Challenges adopting additive manufacturing processes into mining and energy applications*", Symposium: Additive Manufacturing: Building the Pathway towards Process and Material Qualification, TMS 2016 Annual Meeting, Nashville, TN, USA, February 14-18, 2016.

G38. **J. Valloton**, **A-A. Bogno**, J. Chen, R. Lengsdorf, H. Henein, D.M. Herlach, U. Dahlborg, M. Calvo-Dahlborg, "*Microstructural evolution in undercooled A1-8wt%Fe melts*", Supplemental Proceedings of the TMS 2016 Annual Meeting, 51-57, Nashville, TN, USA, February 14-18, 2016.

G39. **M. Mohammadijoo**, **S. Kenny**, L. Collins, H. Henein, D.G. Ivey, "*Effect of cold-wire addition in the tsaw process on microstructure and mechanical properties of the HAZ of X70 microalloyed pipeline steel*", Proceedings of the 2016 11th International Pipeline Conference (IPC2016), Paper No. IPC2016-64549, pp. V003T05A051, 9 pages, Calgary, AB, Canada, September 26-30, 2016.

G40. L. Collins, S. Nafisi, **P. Wei**, J.B. Wiskel, **P. Wang**, D.G. Ivey, H. Henein, "*Effects of segregation on the mechanical performance of X70 line pipe*", Proceedings of the 2016 11th International Pipeline Conference (IPC2016), Paper No. IPC2016-64302, 7 pages, Calgary, AB, Canada, September 26-30, 2016.

G41. S. Sander, C. Tischler, H. Henein , U. Fritsching, "*PVP Particle Production via Electrospray Atomization*", ILASS – Europe 2016, 27th Annual Conference on Liquid Atomization and Spray Systems, 7 pages, Brighton, UK, September 4-7, 2016.

G42. J.B. Wiskel, **J. Kennedy**, **K. Vasudev,** D.G. Ivey, H. Henein, "*Ultrasonic velocity and attenuation measurements in L80 steel and their correlation with tensile properties*", Proceedings of the 19th World Conference on Non-Destructive Testing 2016, 9 pages, Munich, Germany, June 13-17, 2016.

G43. **M. Mohammadijoo**, H. Henein, D.G. Ivey, "*Microstructural characterization of the HAZ in welded microalloyed steels*", Microscopical Society of Canada, Edmonton, AB, Canada, June 2016.

G44. **S. Ouhiba**, J. L. Luo, D.G. Ivey, J.B. Wiskel, H. Henein. R. Stankievec, "*Characterization of sulphide stress cracking and hydrogen induced cracking in L80 steel using different microscopy technique*", Microscopical Society of Canada, Edmonton, AB, Canada, June 2016. (Poster)

G45. **P. Wang**, J.B. Wiskel, D.G. Ivey, H. Henein, L. Collins, "*Characterization of centerline segregation in microalloyed steel continuous slabs*", Microscopical Society of Canada, Edmonton, AB, Canada, June 2016. (Poster)

G46. **P.Wang**, S.Nafisi, J.B. Wiskel, D.G. Ivey, H.Henein, L.Collins*, "Quantitative Microprobe Analysis of Centreline Segregation in Microalloyed Steels and the Effect of Homogenization",* AISTech 2016*,* 12 pages, Pittsburgh, PA, USA, May 16-19, 2016.

G47. J.B. Wiskel, **J. Ma**, D.G. Ivey, H. Henein, "*Investigation of aging behavior in microalloyed steel (X70) UOE pipe using a Box-Behnken experimental design"*, Proceedings of the 7th International Conference of HSLA Steels 2015 & Microalloying 2015 & OES 2015, The Chinese Society for Metals (CSM) and Chinese Academy of Engineering (CAE), 707-714, Hangzhou, Zhejiang Province, China, November 11-13, 2015.

G48. **A-A. Bogno**, **J. Valloton**, **P. Natzke**, **S. Yin**, D.M. Herlach, H. Henein, "*Scandium effects on nucleation undercooling in A1-Cu droplets generated by impulse atomization and electro-magnetic levitation*", Symposium: Materials Science of Additive Manufacturing, Proceedings of the Materials Science & Technology Conference and Exhibition 2015 (MS&T'15), ISBN: 9781510813939 8 pages, Columbus, OH, USA, October 3-8, 2015.

G49. **J. Valloton**, **P. Delshad Khatibi**, D.M. Herlach, H. Henein, "*Microstructural quantification of rapidly solidified D2 tool steel*", Symposium: Materials Science of Additive Manufacturing, Proceedings of the Materials Science and Technology Conference 2015 (MS&T'15), ISBN 9781510813939, 8 pages, Columbus, OH, USA, October 3-8, 2015.

G50. **J. Valloton**, D.M. Herlach, H. Henein, "*Dendrite growth kinetics in undercooled melts of D2 tool steel*", ISPS-6 ITTW2015 The Joint Conference of 6th International Sympsoium on Physical Sciences in Space and 10th International Conference on Two-Phase Systems for Space and Ground Applications, Doshisha University, Kyoto, Japan, September 14-18, 2015.

G51. **J. Ma**, J.B. Wiskel, D.G. Ivey, H. Henein, "*An investigation into transverse tensile properties of uncoated microalloyed steel (X70) UOE pipes affected by strain aging*", Young Pipeliners Association of Canada Pipeline Conference 2015, Edmonton, AB, Canada, August 28, 2015.

G52. **M. Mohammadijoo**, **S. Kenny**, J.B. Wiskel, D.G. Ivey, H. Henein, "*Cold-wire tandem submerged arc welding: a novel technique to increase the productivity of pipeline manufacturing*", Proceedings of COM 2015-AMCAA 2015, ISBN: 978-1-926872-32-2, Paper 9065, 13 pages, Toronto, ON, Canada, August 23-26, 2015.

G53. **A-A. Bogno**, **J. Valloton**, H. Henein, "*On the characterization of high undercooling induced rapid solidification microstructures of metallic alloys*", Proceedings of COM 2015-AMCAA 2015, 11 pages, Toronto, ON, Canada, August 23-26, 2015.

G54. **A-A. Bogno**, **C. Riveros**, D. Li , H. Henein, "*Rapid solidification characteristics of atomized Co-based metallic glass*", Proceedings of COM 2015-AMCAA 2015, ISBN: 978-1-926872-32-2, Paper 9053, 10 pages, Toronto, ON, Canada, August 23-26, 2015. (Keynote)

G55. G. R. Moreno, J. E. Spinelli, **A-A. Bogno**, H. Henein, "*Correlation between microstructure and mechanical properties of atomized Sn-3.0wt%Ag-0.7wt%Cu solder alloy powders*", 22nd International Symposium on Metastable, Amorphous and Nanostructured Materials (ISMANAM 2015), Maison de Mutualite, Paris, France, July 13-17, 2015.

G56. A. Garcia-Escorial, M. Lieblich, H. Henein, **A. Ilbagi**, R. Lengsdorf, D.M. Herlach, "*Containerless solidification of the A168.5Ni31.5 Raney alloy*", 22nd International Symposium on Metastable, Amorphous and Nanostructured Materials (ISMANAM 2015), Maison de Mutualite, Paris, France, July 13-17, 2015.

G57. M. Bedel, G. Reinhart, Ch-A. Gandin, **A-A. Bogno**, H. Nguyen-Thi, H Henein, "*Evolution of grain morphology with solidification velocity in rapidly solidified Al-4.5wt.%Cu droplets*", XIV MCWASP 2015: IOP Conference Series: Mater. Sci. Eng., v84 012016, 8 pages, doi: 10.1088/1757-899x/84/1/012016, Awaji Island, Hyogo, Japan, June 22-26, 2015.

G58. **A. Maitre**, **A-A. Bogno**, M. Bedel, G. Reinhart, H. Henein, "*Heterogeneous nucleation of the primary phase in the rapid solidification of Al-4.5wt%Cu alloy droplet*", XIV MCWASP 2015, IOP Conference Series: Mater. Sci. Eng., v84 012013, 8 pages, doi: 10.1088/1757-899X/84/1/012013, Awaji Island, Hyogo, Japan, June 22-26, 2015.

G59. **J. Kennedy**, J.B. Wiskel, D.G. Ivey, H. Henein, "*Ultrasonic evaluation of microstructure in three grades of heat treated steel*", Proceedings of the Non Destructive Testing in Canada Conference, 10 pages, Edmonton, AB, Canada, June 15-17, 2015.

G60. J.B. Wiskel, **J. Kennedy**, D.G. Ivey, H. Henein, "*Ultrasonic velocity evaluation of three grades*

of heat treated steels", Proceedings of the Non Destructive Testing in Canada Conference, 10 pages, Edmonton, AB, Canada, June 15-17, 2015.

G61. **C. Riveros**, **A-A. Bogno**, D. Li, H. Henein, "*Characterization of rapidly solidified CoCr-base bulk metallic glass"*, CMSC 2015, Halifax, NS, Canada, May 31-June 3, 2015.

G62. **A-A. Bogno**, **P. Natzke**, **S. Yin**, H. Henein, *"Undercooling of rapidly solidified droplets and spray formed strips of A1-Cu (Sc)"*, Proceedings of Characterization of Minerals, Metals and Materials 2015, J. Carpenter et al, Eds., TMS 2015 Annual Meeting, 8 pages, Orlando, FL, USA, March 15-19, 2015.

G63. T. Wolfe, T. Silva, G. Fisher, H. Henein, *"Performance mapping of tungsten carbide metal matrix composites for use in severe wear applications"*, Symposium: Advanced Materials and Reservoir Engineering for Extreme Oil & Gas Environments II, I. Roy, X. Zhang, et al., Eds., TMS 2015 Annual Meeting, 8 pages, Orlando, FL, USA, March 15-19, 2015.

G64. **P. Delshad Khatibi**, **J. Valloton**, H. Henein, D.M. Herlach, *"University of Alberta contribution to CCEMLCC II Project"*, Ecole National Superieure des Mines de Paris (Mines Paris Tech), Paris, France, December 19, 2014.

G65. H. Henein, D.G. Ivey, **J. Lu**o, J.B. Wiskel, "*Development of microalloyed steel for the oil and gas industry*", Proceedings of the 2014 Energy Materials Conference, 8 pages, Xi'an, Shaanxi Province, China, November 4-6, 2014. (Plenary)

G66. **J. Kennedy**, H. Henein, D.G. Ivey, J.B. Wiskel, "*Characterization of L80 steel microstructure using ultrasonic measurements*", Symposium: Advanced Steel Metallurgy: Products and Processing, Proceedings of the Materials Science & Technology Conference 2014 (MS&T'14), 9 pages, Pittsburgh, PA, USA, October 12-16, 2014.

G67. **A. Maitre**, D.G. Ivey, H. Henein, "*Precipitation in continuously cast microalloyed steels*", Proceedings of the Materials Science & Technology Conference 2014 (MS&T'14), 8 pages, Pittsburgh, PA, USA, October 12-16, 2014.

G68. **A-A. Bogno**, **A. Maitre**, H. Henein, Ch-A. Gandin, "*Characterization of rapidly solidified metallic alloys using combination of experiments*", Symposium: Light Metals, Proceedings of COM 2014, ISBN: 978-1-926872-24-7, 8 pages, Vancouver, BC, Canada, September 28-October 1, 2014. (Keynote Paper)

G69. **A-A. Bogno**, **J. Valloton**, D.M. Herlach, H, Henein, "*Dendrite growth kinetics in undercooled melts of D2 tool steels*", Space Exploration Symposium (ISSET 2014), University of Alberta, Edmonton, AB, Canada, September 25-26, 2014.

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Va. Supervision of Graduate Students and Postdoctoral Fellows (current student in italics, DD-Dual Degree Student with Université de Lorraine)

Bachelor Thesis Students	84 *(4)*
Master's Students	60 *(2)*
Ph.D. Students	26 (6)
PDF/Other Researchers	14 *(3)*
Total	184 *(15)*

Name	Degree	% Supervision/Joint with

Roy Matway	PhD	50% R. Fruehan
Bryan Lally	PhD	50% L. Biegler
Jaakko Suni	PhD	
Ding Yuan	PhD	
Arvind Prasad	PhD	
Jufang Lu	PhD	50% D.G. Ivey
Tonya Wolfe	PhD	
Hulya Kafdelen	PhD	
Arash Ilbagi	PhD	
Nasseh Khodaie	PhD	50% D.G. Ivey
Pooya Delshad Khatibi	PhD	
Xiaoxiong Xing	PhD	
Jawad Shah	PhD	50% D.G. Ivey
Mohsen Mohammadijoo	PhD	50% D.G. Ivey
André dos Santos Barros	PhD	60% Noé Cheung, Mechanical Engineering of UNICAMP, Brazil
Lu Sun	PhD	50% Weixing Chen
Dylan Rose	PhD	50% Tonya Wolfe
Rishav Raj	PhD	
Tailin Ren	PhD	50% L. Li
Akankshys Sahoo	PhD	
Quentin Champdoizeau	*PhD*	*25% with J-S Kroll-Rabotin (IJL, France)*
Vanda Milani	*PhD*	
Lucas Martin Ishida	*PhD*	
Nasim Navid Moghdam	*PhD*	
Jarrod Angove	*PhD*	
Jacob Barron	*PhD*	
Bryan Lally	MSc	

Seon-Hyo Kim	MSc	
Diwakar Reddy	MSc	
Neeraj Nityanand	MSc	
Berkley Pollard	MSc	
Jaakko Suni	MSc	
David Vensel	MSc	
Curt Abel	MSc	
Li Yao	MSc	
Krishna Pillai	MSc	
Ron Beaudoin	MSc	
Craig Townsend	MSc	
Stephen Roach	MSc	
Manuel Rieder	MSc	
Kimberley Sandy	MSc	
Errol Halberg	MSc	
Elliot Niemi	MSc	
Hua Deng	MSc	
Xiujun Li	MSc	
Joel Pepin	MSc	50% D.G. Ivey
Baher Bineshmarvesti	MSc	50% A. Ben-Zvi
Syed Zakaria	MSc	
Katherine Jonsson	MSc	50% D.G. Ivey
Weishan Huang	MSc	50% J. Luo
Stephen Kenny	MSc	50% D. Ivey
Jacob Kennedy	MSc	
Pusang Wang	MSc	50% D. Ivey
Shengze Yin	MSc	
Alexandre Lecoanet	MSc-DD	
Jun Ma	MSc	
Saoussen Ouhiba	MSc-DD	50% J. Luo
Anderson Ribeiro	MSc	50% D. Ivey

Kartik Vasudev	MSc	50% D, Ivey
Corentin Chatelier	MSc-DD	50% D. Ivey
Antoine Van Der Laan	MSc-DD	50% D. Ivey
Justin Forth	MEng	
William Hearn	MSc	
Pat Flood	MSc	
Steffen Gawor	MSc	50% J. Luo
Mehdi Arjomandpur	MSc	50% D.G. Ivey
Sandy el Moghazi Ibrahim	MSc	50% T. Wolfe
Mingzhang Yang	MSc	50% J. Liu and D/G/ Ivey
Rishav Raj	MSc	50% D. Ivey
Tailin Ren	MSc	50% M. Mohammadijoo
Daniela Diaz Jimenez	MSc	
Nancy Bhardwaj	MSc	50% T. Wolfe
Ezz Ahmed	MSc	30% A. Qureshi 40% J. Liu
Remy Samson	MSc-DD	50% A. Qureshi
Bilal Bharadia	MSc	
Geoffrey Bonias	MSc-DD	25% T. Wolfe
Shiyu Teng	MSc	33% A. Qureshi, 33% T. Wolfe
Anqi Shao	MSc-DD	
Ry Karl	MSc	
Tamara Kazoun	MSc	50% D.G. Ivey
Anne McDonald	MSc	50% K. Meszaros
Zhe Kuan Lim	MSc	50% A. Qureshi
Yifan Li	MSc	50% A. Qureshi
Matéo Prin	MSc	

Matthieu Rougon	*MSc*	
Evan Scchneider	*MSc*	
Christopher Bailey	PDF	
Jian Chen	PDF	
John Fallavallita	PDF	
Preben Ingerslev	PDF	
Aziz Bogno	PDF	
Adeline Maitre	PDF	
Mohsen Mohammadijoo	PDF	50% D.G. Ivey
Morteza Ghasri Khouzani	PDF	30 % J. Liu 30% A.J. Qureshi
Khaled Mostafa	PDF	50% A.J. Qureshi
Barry Wiskel	PDF/Research Asociate/Lecturer	
Yun-Fei Fu	PDF	50% A.J. Qureshi
Jonas Valloton	*PDF/Research Associate*	
J Marcelino da Silva Dias Filho	*PDF/ Ressearch Associate*	
Nitin Siani	*PDF*	*50% L. Li*

Vb. Supervision of Undergraduate Thesis Students (* denotes students that enrolled as graduate students following graduation)

Name	Year Supervised	Degree	% Supervision /Joint with
INTERNATIONAL STUDENTS (Interns at the University of Alberta)			
Axel von Freyberg*	2001	Dipl Ing (Bremen)	25% V. Uhlenwinkle
Jens Knabe	2002	Dipl Ing (Bremen)	25% V. Uhlenwinkle
Melanie Weigend	2003	Dipl Ing (Bremen)	25% V. Uhlenwinkle
Vincent Buchould*	2003	DEA (Nancy)	25% V. Uhlenwinkle
Nils Ellendt*	2003	Dipl Ing (Bremen)	25% V. Uhlenwinkle
Tim Lewandowski*	2003	Dipl Ing (Bremen)	25% V. Uhlenwinkle

Ralph Schmidt*	2004	Dipl Ing (Bremen)	25% V. Uhlenwinkle
Roland vonBargen*	2004	Dipl Ing (Bremen)	25% V. Uhlenwinkle
Farboud Bejnoud*	2005	Dipl Ing (Bremen)	25% V. Uhlenwinkle
Nils Hornig*	2008	Dipl Ing (Bremen)	25% V. Uhlenwinkle
Alex Mauer*	2009	Dipl Ing (Bremen)	25% V. Uhlenwinkle
Claas Knoop	2009	Dipl Ing (Bremen)	25% V. Uhlenwinkle
Daniel Beinker*	2011	Dipl Ing (Bremen)	25% V. Uhlenwinkle
Anna Bruner*	2012	Dipl Ing (Dresden)	
Nevaf Ciftci*	2012	Dipl Ing (Bremen)	25% V. Uhlenwinkle
Philipp Natzke*	2014	Dipl Ing (Dresden)	
Daniel Auras*	2016	Dipl Ing (Munich)	
Steffan Gawor	2016	Dipl Ing (Bremen)	25% V. Uhlenwinkle
STUDENTS AT CARNEGIE-MELLON UNIVERSITY			
George Spanos*	1981-82	BSc Engng (Materials)	50% with G. Warren
Steve Balsone*	1981-82	BSc Engng (Materials)	50% with G. Warren
John Erdeljac	1982-83	BSc Engng (Materials)	
Jackie Isaacs*	1982-83	BSc Engng (Materials)	50% with R.J. Fruehan
Brian Manley*	1983-84	BSc Engng (Materials)	
Wayne Willcomm	1983-84	BSc Engng (Materials)	50% with L. Biegler
David Vensel*	1984	BSc Engng (Materials)	
Curt Abel*	1984-85	BSc Engng (Materials)	
Nicholas Gianaris*	1984-85	BSc Engng (Materials)	
Brian Dadey	1985	BSc Engng (Materials)	
David Solomon	1985	BSc Engng (Materials)	
Denzil Boss*	1985-86	BSc Engng (Materials)	
Jean Gropp*	1987-88	BSc Engng (Materials)	
Judy Pappania	1987-88	BSc Engng (Materials)	
Dan Mallik*	1987-88	BSc Engng (Materials)	
Marie DeGregorio	1988	BSc Engng (Materials)	
Jeff Kochanowski	1988	BSc Engng (Materials)	
Sue Schefielbaum*	1988-89	BSc Engng (Materials)	

STUDENTS AT THE UNIVERSITY OF ALBERTA			
Derek B. Gilboe	1990-91	BSc Engng (Materials)	
Hugh Roth*	1992-93	BSc Engng (Materials)	
Ron Beaudouin*	1993-94	BSc Engng (Materials)	
Gerald Sterzik	1994-95	BSc Engng (Materials)	
Kristain Olsen*	1994-95	BSc Engng (Materials)	
Manuel Reider*	1995-96	BSc Engng (Materials)	
Juan Meha	1995-96	BSc Engng (Materials)	
Darien Sussman	1995-96	BSc Engng (Materials)	
Louis Morin	1995-96	BSc Engng (Materials)	
Ben Yee	1997-98	BSc Engng (Materials)	
Thomas Kamm	1997-98	BSc Engng (Materials)	
Jason Kachur	1997-98	BSc Engng (Materials)	
Victoria Orlick	1999-2000	BSc Engng (Materials)	
Errol JE Halberg*	2002	BSc Engng (Materials)	
Chris Borowski	2009-10	BSc Engng (Materials)	
Shengze Yin*	2012-13	BSc Engng (Materials)	
Pusong Wang*	2012-13	BSc Engng (Materials)	
Carlos Riveros	2013-14	BSc Engng (Materials)	
Advaita Bhatnagar	2014-15	BSc Engng (Materials)	50% with T. Wolfe
Justin Forth*	2015	BSc Engng (Materials)	
Justin Bekker	2015	BSc Engng (Materials)	
Lily Ren*	2015-16	BSc Engng (Materials)	50% with T. Wolfe
Carlos Ribieros	2015	BSc Engng (Materials)	
Pat Flood*	2015	BSc Engng (Materials)	
Dylan Rose*	2015	BSc Engng (Materials)	50% with T. Wolfe
Michaela Eifler	2017	BSc Engng (Materials)	
Bilal Bharadia*	2017-18	BSc Engng (Materials)	
Daniela Diaz Jimenez*	2018	BSc Engng (Materials)	
Vini Dheer	2018	BSc Engng (Materials)	
Nancy Bhardwaj*	2017-2018	BSc Engng (Materials)	50% with T. Wolfe

Yume Bhutia	2021, 2022	BSc Engng (Chemical)	
Emma Li	2021	BSc Engng (Materials)	
Jolene Borrelli	2022	BSc Engng (Materials)	
Alex Changyu	2022	BSc Engng (Comp. Eng)	50% A. Qureshi
Masoud Hajialiakbar	2022	BSc Engng	50% A. Qureshi
Mohammed Qasim Karjatwala	2022	BSc Engng	
Fayad Rahaman	2022	BSc Engng (Materials)	
Mikhail Kraskovkiy	2022	BSc Engng (Materials)	
Shreya Roy	2022	BSc Engng (Materials)	
Jarrod Angove	2022	BSc Engng (Materials)	
Alexandra Perez	2023, 2025	BSc Engng (Chemical)	Won best Poster Award at the Dean Research Gala
Alina Iunusova	2024	BSc Engng (Chemical)	
Patryk Szuc	2024	BSc Engng (Materials)	
Hannah Pfeil	2025	BSc Engng (Materials)	
Dennis Rojkovski	*2025, 2026*	*BSc Engng (Chemical)*	
Everett Gross	*2025, 2026*	*BSc Engng (Materials)*	
Saadallah Belim	*2025, 2026*	*BSc Engng (Chemical)*	
Erin Rees	*2025, 2026*	*BSc Engng (Materials)*	

V. Research Support

VIa. Current Research Support

Funding Organization and Program	Project Title	PI	Co-Investigators	Period Held	Amount per year - Cash
Stelco and Tata Steel Europe	The kinetics of TiN precipitation in steel (KiTiNs)	Y	D.G. Ivey and L. Li	Nov 15, 2025 – Nov 14, 2028	$91,833 Yr 1 $91,833 Yr 2 $77,333 Yr 3 $77,667 Yr 4
NSERC Alliance Advantage	The kinetics of TiN precipitation in steel (KiTiNs)	Y	D.G. Ivey and L. Li	Nov 15, 2025 – Nov 14, 2028	$183,667 Yr1 $183,667 Yr2 $154,667 Yr3 $149,667 Yr4
HI-AM 2.0: Disc Alloys	A study on the bi-metallic AM	Y		2025-2026	$25,092 Yr 1 $25,092 Yr 2

	manufacturing using Cold Spray				
NSERC Alliance Advantage	A study on the bi-metallic AM manufacturing using Cold Spray	Y		2025-2026	$50,184 Yr 1 $50,184 Yr 2
Stelco	A study on the development of new high strength low alloy steels (DevNew)	Y	D.G. Ivey	2025 - 2029	$105,800 Yr 1 $109,033 Yr 2 $109,033 Yr 3 $109,033 Yr4
NSERC-Alliance Advantage	A study on the development of new high strength low alloy steels (DevNew)	Y	D.G. Ivey	2025-2029	$226,445 Yr 1 $213,067 Yr 2 $213,067 Yr 3 $213,067 Yr 4
NSERC Alliance Grants	Multi material robotic hybrid additive wire arc manufacturing for energy industry	N	A. Qureshi	2022-2027	135,850, Yr 1 106,600, Yr 2 109,850, Yr 3 109,850, Yr 4
Syncrude	Multi material robotic hybrid additive wire arc manufacturing for energy industry	N	A. Qureshi	2022-2027	135,850, Yr1 106,600, Yr 2 109,850, Yr 3 109,850, Yr 4
NSERC Alliance Grants	Processing and performance of lattice composites (P2LaC)	Y	A. Qureshi	2022-2027	140.448, Yr1 69,350, Yr 2 77,950, Yr 3 77,950, Yr 4
Syncrude	Processing and performance of lattice composites (P2LaC)	Y	A. Qureshi	2022-2027	140,890, Y1 69,550, Yr 2 78,050, Yr 3 78,050, Yr 4
NSERC, EVRAZ NA, TC Energy, CRC Evans, SGS Canada, Acuren, Canmet	(Ti,Nb)(C,N) precipitate characterization: from hot rolling to girth welding (ETCS)	Yes	D.G. Ivey, W. Chen, L. Li	July 2021 to Dec 2026	$394,652
NSERC-Discovery	Developing new metallic alloys for Additive Manufacturing	Yes		Apr 2020 to Mar 2025	$55,000
EDTT-SEG	Additive Manufacturing using a Direct Energy Laser System for the Resource Sector	Yes	A. Qureshi J. Myatt	Mar 2020 to Mar 2025	$194,773
CFI-JELF	Additive Manufacturing using a Direct Energy Laser	Yes	A. Qureshi J. Myatt	Jan 2020 to	$194,773

	System for the Resource Sector			Mar 2025	

VIb. Past Research Support

Funding Organization and Program	Project Title	PI	Co-Investigators	Period Held	Amount per year - Cash
NSERC Research Tools and Instruments	High temperature differential scanning calorimeter for the analysis of metastable materials	Yes		Apr 2021 to Mar 2022	$149,997
NSERC Alliance Grants – Alberta Innovates - Advance	High Entropy Alloy Design for Dissolvable Tools using Machine Learning	Yes	A. Qureshi, J. Liu, X. Li	Jan 2021 to Dec 2023	$150,000
Syncrude	Fused filament fabrication for oil sands applications	Yes	A. Qureshi W. Moussa	Dec 2019 to Nov 2023	$62,000/yr
NSERC CRDPJ	The rapid solidification of Al-Ce alloys and FeCrMnNiCo high entropy alloy	Yes		April 2019-Mar 2023	$93,988 Yr 1 $69,333 Yr 2 $99,000 Yr 3 $99,000 Yr 4
Equispheres	The rapid solidification of Al-Ce alloys and FeCrMnNiCo high entropy alloy	Yes		April 2019-Mar 2023	$57,333 Yr 1 $57,333 Yr 2 $57,333 Yr 3 $57,333 Yr 4
UWATERL NETGP Univesrity of Waterloo	NSERC Network for Holistic Innovation in Additive Manufacturing (HI-AM)	No	Lead for the University of Alberta	June 2017-May 2022	$90,160
UOFAB NETGP	NSERC Network for Holistic Innovation in Additive Manufacturing (HI-AM)	No	Lead for the University of Alberta	June 2017-May 2022	$ 30,000 Yr1 $30,000 Yr 2 $30,000 Yr 3 $30,000 Yr 4 $30,000 Yr 5
NSERC - Engage	Additive Manufacturing of Dissolvable Downhole Tools and Materials	No	A. Qureshi (PI) J. Liu		$25,000

IRAP	Controlled corrosion based unit lattice cells for downhole tools via additive manufacturing and hybrid casting.	No	A. Qureshi (PI) J. Liu	Nov 2019 to Apr 2020	$53,266
NSERC CRDPJ	An evaluation of additive manufacturing of MMCs for oil sands applications	Yes	A. Qureshi, L. Li and T. Wolfe	Nov 2017-Nov 2021	$113,912Yr1 $110,912Yr2 $100,912Yr3 $100,912Yr4
SCL CRD Syncrude	An evaluation of additive manufacturing of MMCs for oil sands applications	Yes	A. Qureshi, L. Li and T. Wolfe	Nov 2017-Jan 2022	$74,296 $77,896 $71,896 $71,896
NSERC CRDPJ	Physical property measurement of slags for biomass processes	Yes		May 2017-Dec 2020	$39,320 $30,320 $30,320
ENERKEM CRD	Physical property measurement of slags for biomass processes	Yes		May 2017-Dec 2020	$20,000 $15,000 $15,000
NSERC CRDPJ	Microstructural Engineering of Tubular and Thicker Walled Pipeline Steels (METAPS)	Yes	D. Ivey, J. Luo and L, Li	Jan 2017-Dec 2020	$235,200 $235,200 $235,200 $235,200
MULTI/2 CRDPJ (EVRAZ Inc., TCPL)	Microstructural Engineering of Tubular and Thicker Walled Pipeline Steels (METAPS)	Yes	D. Ivey, J. Luo and L. Li	Jan 2017-Dec 2021	$160,000 $160,000 $160,000 $160,000
NSERC RGPIN (Discovery)	Advanced Techniques for Analysis and Design in Materials Processing	Yes		Apr 2014–Mar 2020	$29,000/yr
Boss Engage	Disolvable tool	No	A. Qureshi (PI), L. Jin	Oct 2019-Apr 2019	
European Space Agency	Chill Cooling for the Electromagnetic Levitator in relation with Continuous Casting of Steels (CCEMLCC)	Yes		Jan 2016-Dec 2019	$28,988 $27,946 $45,246

NSERC RGPIN (Discovery)	Advanced Techniques for Analysis and Design of Materials Processing	Yes		Apr 1998-Mar 2015	$510,513
NSERC – CRD	High Strength Microalloyed Steel for Strain-Based Pipeline Design	Yes	D. Ivey, A. Gerlich, A. Ben-zvi, J. Luo	Sept 2007-Aug 2011	$638,807
EVRAZ	High Strength Microalloyed Steel for Strain-Based Pipeline Design	Yes	D. Ivey, A. Gerlich, A. Ben-zvi, J. Luo	Dec 2006-Nov 2011	$590,000
NSERC MRS	Resource for the Innovation of Engineering Materials	Yes	10 co-applicants from across Canada	Apr 2007-Mar 2015	$254,530 $272,900 $272,900 $272,900 $272,900 $272,900
European Space Agency	ESA Topical Team Contract	Yes		2008-2011	$28,000
NCE – AUTO21	The Effect of Magnesium Granule Microstructure on the Properties of Semi-Solid Formed Test Samples (UofA funds only shown)	Yes	B. Davis (Queens) and E. Konopleva (Concordia)	Apr 2008-June 2010	$37,000 $37,000
NCE-AUTO21	Chemically Enhanced Formability of Automotive Aluminum Alloys	Yes		Apr 2008-June 2010	$28,400 $9,500
NCE	Chemically Enhanced Formability of Automotive Aluminum Alloys	Yes		2005-2006	$77,125
CSA – Space Science Ehancement Program	Non-Equilibrium Solidification of A1-Ni and A1-Fe droplets	Yes		Oct 2009-Mar 2013	$75,830 $56,450 $58,450
AITF	Nano-tungsten carbide based composites formed by reactive plasma transferred arc welding	Yes	T. Wolfe and G. Fisher (AITF)	Nov 2011-Mar 2013	$75,000
NSERC STPGP	ANR-Microstructural Modelling of Rapidly Solidified Droplets	Yes		Oct 2011-Sept 2015	$120,400 $110,400 $110,400

	and Spray Formed Strip of Al-Cu-Sc				
NGTC Novellis	Microstructural modelling of rapidly solidified droplets and spray formed strip of Al-Cu-Sc	Yes		Oct 2011-Sept 2015	$6,956 $6,956
CSA FAST	Quantitative analysis of Al-Ni, Al-Cu, Fe-C and D2 Tool Steel structures solidified under limited diffusion conditions	Yes		Mar 2012-Mar 2016	$131,915 $128,107 $135,810
UOFAB FAPESTP-CALDO	Microstructural analysis of Sn-Cu and Sn-Ag-Cu lead free solder alloys under fast and slow cooling	Yes		Oct 2013-Sept 2015	$12,500
NSERC – Engage (Kennametal)	Characterization of a rapidly solidified cobalt based alloy	Yes		July 2014-Mar 2015	$25,000
NSERC – Engage (Liburdi)	Investigation of crack susceptibility and microstructure of boron and silicon modified Rene 80 laser clad weld	Yes		Apr 2014-Dec 2014	$25,000
Education Abroad Group Award	CME Work Abroad Internships	Yes		May 2015-Apr 2016	$21,200
NSERC CRDPJ	Engineered Steels for Tubular and Pipe Products – ESTAP2	Yes	D. Ivey and J. Luo	Apr 2012-June 2017	$224,020 $380,052 $294,020 $294,020
NSERC – Evraz, TCPL, UT Quality, Enbridge, Alliance	Engineered Steels for Tubular and Pipe Products – ESTAP2	Yes	D. Ivey and J. Luo	Dec 2011 – June 2017	$160,000 $160,000 $310,000 $210,000
NSERC EGP	Characterizing slag properties for the KIVCET process	Yes		Mar 2017-Nov 2017	$25,000
European Space Agency	Thermophysical properties of liquid	Yes		Jan 2016-	$49,602 $68,467

	metals for industrial process design			Dec 2018	$30,164
NSERC CRDPJ	The rapid solidification of Al-10w%Si and Sc alloy	Yes		Jan 2016-Dec 2018	$72,500 $59,750 $59,750
Equispheres	The rapid solidification of Al-10w%Si and Sc alloy	Yes		Jan 2016-Dec 2018	$36,000 $30,000 $30,000
European Space Agency	Non-Equilibrium Solidification, Modelling for Microstructure Engineering of Industrial Alloys (NEQUISOL)	Yes		Nov 2015–Oct 2018	$28,310 $42,330 $29,956
European Space Agency	Support to NEQUISOL Experiments	Yes		Oct 2016-Sept 2018	$11,252 $10,280
Carnegie-Melon	Various Projects 1981 – 1988	Yes		1981-1988	$1,734,036 US

Sponsors
URI-AFOSR
United States Steel
Center for Iron and Steel Making Research
INSITEC-NSF SBIR
NSF-REU Supplement
National Science Foundation
National Steel Corp.
CDEC
Bethlehem Steel Corp.
Beckman Instruments
St. Joe Minerals Corp.
Western Pennsylvania Technology Center, Ben Franklin Partnership
Pennsylvania Science & Engineering Foundation
Teledyne Inc., TRAP
Lilly Endowment, Inc.

VII SERVICE TO THE PROFESSION

VIIa. STATEMENT OF DR. HENEIN'S SERVICE TO THE PROFESSION

My service and leadership contributions to the professional community are numerous and varied at the local, national and international levels. Details follow the overview description.

I advised a professional student club in Materials Science and Engineering on Campus for 10 years

during which they were recognized four times with best chapter awards by several professional societies.

In addition to organizing and Chairing a number of International Conferences and Symposia, I have been instrumental in the leadership of the organization of at least four conferences in Alberta. These are:

- 31st Conf. of Metallurgists, MetSoc of CIM, Arrangements Chair, 1992,
- Control of Particulate Processes III, Engineering Foundation, Chair, 94-95,
- 37th Conf. of Metallurgists, MetSoc of CIM, Conf. Chair, 1998,
- 44th Conf. of Metallurgists, MetSoc of CIM, Pipelines for the 21st Century in honour of Prof. Doug Boyd, COM, 2005.

I also served as Editor-in-Chief of the Canadian Metallurgical Quarterly, an archival peer reviewed international journal in materials science and engineering, with Editorial Offices located at the University of Alberta from 1992 to 1996.

In addition, I have served as President of the Metallurgy and Materials Society of Canada in 1998-99 (about 1200 Canadian and International Members) and on the Boards of other professional societies in the US such as the Association of Iron and Steel Technology (AIST) and as Chair of Programming of The Metals Minerals and Materials Society (US). I served as the 2014 President of the Metals, Minerals and Materials Society. This professional Society of materials scientists and engineers has 17,000 members worldwide of which 40% are international. Only two previous Canadians have been honoured in this way; one of whom is the late Prof. J. Keith Brimacombe. I served as a Member of the Board of Trustees and President of the American Institute of Mining, Metallurgical and Petroleum Engineers (AIME). AIME is one the five founding engineering societies in the USA established in 1871 and presently represents over 200,000 materials scientists, mining, petroleum, iron and steel and materials engineers worldwide.

Reviewer activities included Chairing the Chemical and Metallurgy Discovery Grant Committee (1998), a member of the Network Centres of Excelence Selection Committee (2000 to 2002), as a member of panels for les Fonds Québécois de Recherche sur la Nature et les Technologies (2006, 07, 09) and as a member of the Accreditation Board team to McMaster University (2009), the University of Toronto (2015), the University of British Columbia (2017) and McGill University (2023).

VIIb. Professional Societies and Foundations

AIME:
President, 2019-2020
Trustee, Board of Trustees – 15-17
History Committee, *Member*, 16-17
Audit Committee, *Member*, 16-17
James Douglas Gold Medal Committee, *Member,* 00-04.
All-Institute Annual Meeting Programming committee, *Member*, 93-94.
Raymond Memorial Award Committee, *Member,* 87-88
All Institute Annual Meeting Programming Committee, *Member,* 84-86

AISI: AISI-Northwestern University Steering Committee on Expert Systems, 87-89

AIST formerly The Iron and Steel Society (ISS):
Life Member, 2007
ISS Board of Directors, *Member*, 93-95
Process Technology Division (PTD), ***Chairman****,* 93-94, ***Officer***, 91-95
Education Committee, *Founding Chairman*, 83-87, *Member,* 87-99

Advanced Technology Symposium Committee, *Member,* 91-99
Process Technology Forum Committee, ***Founding Chairman***, 88-89, *Member* 89-91
Steering Committee, PTD, *Member,* 85-88
John Chipman Award Committee, ***Chairman***, 92-93, *Member*, 86-88
Editorial Advisory Board, Iron and Steelmaker, *Member,* 84-87
113th AIME Annual Meeting, PTD Program ***Chairman***, 1984

ASM Int'l:

- Historical Landmark Award Selection Committee**,** *Member,* 21-24
- Henry Marion Howe/Marcus A. Grossman Young Author Award Selection Committee, *Member,* 05; ***Chair***, 06, 07

Pittsburgh Chapter -

Executive Committee,*Member,* 84-87
Education, Student Affairs and Awards Committees, ***Chairman***, 87-88
Nominating and Long Range Planning Commttees, *Member,* 88-89

Montreal Chapter -

Executive Committee, *Member,* 74-76
Young Members and the Welcoming and Retention Committees, ***Chairman***

CIM-The Metallurgical Society (MetSoc):

Metal Physics Medal, Member 14-16
Strategic Planning, Member 04-05
Awards Committee, Member, 02-07
CIM Council, *Member*, 99-00
Past-President and Chairman of the Board of Directors, 99-00
Executive Committee, *Member*, 95-98 and 99-00, ***Chairman***, 98-99
Board of Directors, *Member*, 95-99
Nominations Committee, ***Chairman***, 00; *Member*, 05-06, 12, 13
Awards Committee, ***Chairman,*** 97
Long Range Planning Committee, *Member,* 93
Membership Committee, *Member,* 90-91

German Materials Society (DGM)

Advisory Board of MSE 2018

The Institute of Materials, Mineals and Mining, UK

International Panel of Judges, Charles Hatchett Award, Member, 2016 – 2018

The J.Keith Brimacombe Foundation:

The J Keith Brimacombe Prize Committee, ***Chairman***, 99-12
Board of Trustees, *Member*, 98-12

The Minerals, Metal and Materials Society (TMS):

Ad-Hoc Nominating Review Committee, 17

International Affairs Committee, Chair, 15 - 17
Nominating Committee, Chair, 15-16, Member, 17-20
Awards and Professional Recognition Committee, Member, 16-17
Fellows Award Sub-Committee, Chair, 16-17
Fellows Award Sub-Committee, Member, 15-16
President and Chair of the Board of Directors, 14
Vice President, 13
Board of Directors, 09-16
Program Development Committee, Member, 13
2013 MS&T Plenary Committee, Member, 13
Ad-Hoc Committee on Education, Chair, 11-12
Ad-Hoc Committee on Quality Programming, Co-Chair, 11-12
Ad-Hoc Committee on Professional Development, Chair, 14
Ad-Hoc Working Group on Volunteerism, Member, 11
Honors and Profesionl Recognition Committee, Chair, 13
TMS-MetSoc Task Force, Member, 09-10
Conference Review Panel, Chair, 09-12
Content Capture and Delivery Committee, 09-12
Programming Director, 09-12
EPD Council, Member, 06-09
EPD Student Affairs, 06-09
Strategic Planning Advisory Committee, Member, 06-09
Powder Metallurgy Committee, Member, 06
Hardy and Mathewson Awards Sub-Committee, Member, 04-07, Chair, 06-08
Education Committee, Member, 05-08
Industry Strategy Committee, Member, 99-00
Nominating Committee, Member, 94-97
Honours and Awards Committee, Member, 95-96, 06-08
Educator, Leadership and Application to Practice Awards Committee, Chair, 95-96
Extraction & Processing Division, Planning Officer, 92-98
TMS Programming Committee, Member, 88-92
Extractive and Processing Division Programming Committee, Chair, 88-92.
Synthesis & Analysis in Materials Processing Committee, Member, 90-
Synthesis & Analysis in Materials Processing Committee, Chair,87-90.
TMS Book Publishing Committee, 86-88; Vice-Chairman, 87-88.
Physical Chemistry Committee, Member, 82-87

Journals

Editorships:

Materials, Member of Editorial Board, 2021 – 2023.
Powder Technology, Guest Editor, Vol. 108, Nos. 2-3, 2000.
Canadian Metallurgical Quarterly, Editor-in-Chief 92-96, Assoc. Editor 96-98

Review Boards and Committees:

International Journal of Iron & Steel Society of Iran, *International Board,* 05-14
Metallurgical & Materials Transactions, *Key Reader,* 82-91, 98-19
Canadian Metallurgical Quarterly, *Key Reader,* 90-93
Transactions of the Iron and Steel Society, *Key Reader,* 96, 99

Reviewer:

Acta Materialia. Applied Mathematical Modelling Journal, AIChE Journal, Atomization and Sprays (International Journal of the Institute of Liquid Atomization and Spray Systems), Canadian Journal of Chemical Engineering, Canadian Metallurgical Quarterly, Chemical Engineering Research and Design, Drying Technology, Industrial and Engineering Chemistry Research, International Transaction in Operational Research (ITOR), International Journal of Materials Research, Journal of Alloys and Compounds, Journal of Environmental Science & Health, Journal of Materials Science, Journal of Non-Crystalline Solids, Materials Characterization, Materials Science and Engineering A, Materials Science and Engineering Technology, Metallurgical and Materials Transactions, Modelling and Simulation in Materials Science and Engineering, Science and Engineering of Composite Materials, Transactions of the Canadian Society of Mechanical Engineers, Transactions ISS,

Canada Research Chairs

College of Reviewers, *Member*, 00-10.

Canada Foundation for Innovation

Innovation Fund Committee – Expert Panel on Welding (2025)
Multidisciplinary Assessment Committees (MACs), *Member,* 2012
Expert Committee #203, *Chair*, 2006
Leaders Opportunity Fund, 2011

Fonds Québécois de Recherche sur la Nature et les Technologies

Fonds de Recherce du Quebec, Committee 74, 2020-2021
Bourses d'enseignement en génie - Comité Génie des matériaux, métallurgique et minier, 2009
Programme Projet de Recherche en Equipe, Selection Committee 2006, 2007

Network Centres of Excellence:

Selection Committee, *Member,* 00-02
Expert Panel on Emerging Materials and Technologies, *Chair,* 99

Natural Science and Engineering Research Council of Canada:

Industrial Research Chair Review Committee, McMaster University, Chair, 2013
Inter-American Collaboration in Materials Research, *Member*, 05 and 07
Collaborative and International Opportunities, *LOI Reviewer*, 2002
Appeals Consultant, Research Grants, 01-02
Advisory Group on Materials Research, *Member*, 98-99
Chemical-Metallurgy Grant Selection Committee, *Chairman*, 98-99, *Member*, 96-98
Chemical-Metallurgy Reallocation Committee, *Member,* 97

Other:

Canada

- Materials and Manufacturing Ontario
- Ministere de L'Industrie du Commerce et Technologie du Québec
- Natural Science and Engineering Research Council: Research Grant, Collaborative Research Grant and Technology Partnership Programs
- Council of Ontario Universities on the MEng in Advanced Design Manufacturing - McMaster Univ., U. of Toronto, McMaster Univ., Queens Univ. and Univ. of Western Ontario, 2010.

International

Europe: **International Scientific Advisory Committee**, MAPEX, University of Bremen, Bremen, Germany (2015-)
International Scientific Committee, LabEx-DAMAS, Lorraine,
(2014-)
European Science Foundation (2006-2012)

Georgia: Rustaveli National Science Foundation (SRNSF) (2008-present)

UK: Engineering and Physical Sciences Research Council
Charles Hatchett Award, ajudication committee, IOM3, (2016-2019)

USA: Holloman Award for Materials and Society, ajudication committee, Acta Materialia, 2017
American Chemical Society (The Petroleum Research Fund)
International Copper Association
National Science Foundation
State of Missouri Research Assistance Program
Western Pennsylvania Advanced Technology Center (Ben Franklin Partnership)

Other Review Committees

Canadian Engineering Accreditation Board
Program Visitor for University of McGill University, Materials Engineering, 2023
Program Visitor for University of British Columbia, Materials Engineering, 2017
Program Visitor for University of Toronto, Materials Science and Engineering, 2015
Program Visitor for McMaster University, Materials Science and Engineering, 2009

Materials Innovation and Advisory Committee, Canmetmaterials
Member, 2013-2016

External Review Visiting Committee for the Department of Materials Science and Engineering, University of Toronto, 2013

External Examiner on M. Eng., M.Sc. and Ph.D. Theses for the following Universities:

Canada
DalTech of Dalhousie University
McGill Unversity
McMaster University
Toronto Metropolitan University
University of Alberta

University of British Columbia
University of Toronto

International

France:	l'Institut National Polytechnique de Lorraine, Nancy
India:	Thapar University,Punjab, India
Norway:	NTNU Norwegian University of Science and Technology, Trondheim
USA:	Carnegie-Mellon University
	Tufts University

Letters of Reference for academic tenure, promotion and named professorships for the following Universities:

Canada

Dalhousie University
Laurentian University
Ryerson University
McMaster University
Queens University
The University of British Columbia
The University of Saskatchewan
The University of Toronto
The University of Waterloo
The University of Windsor

International

Australia:	University of New South Wales
China	Tsinghua University
South Korea:	Pohang University of Science and Technology
USA:	Colorado School of Mines
	The Ohio State University
	The University of California, Berkeley
	The University of California, Irvine
	The University of Illinois, Urbana-Champaign
	The University of Nevada Las Vegas
	The University of Pittsburgh
	Worcester Polytechnic Institute

VII. Teaching

VIIa. Training Philosophy and Plan

TRAINING PHILOSOPHY

I have been teaching the Materials Engineering Design Course in the Fall Semester of the 4th undergraduate year of study (senior year). Working with the Teaching and Learning Centre at the UofA, I have transformed this course from a lecture delivered course to a Case Studies flipped classroom delivery. This aids the students learn how to carry out a project working in a group. They also learn how to deliver technical talks, run meetings, make agendas, keep minutes, write reports and engage with industrial mentors.

To maintain and improve my awareness of diversity and inclusivity, I attend Diversity Conferences or Symposia organized by national and international professional societies. I, also, work with several international institutions to recruit a diverse HQP to the UofA. This resulted in the only Dual Degree (DD) program for an MSc in the Faculty of Engineering with the Université de Lorraine and the first at the University of Alberta. Over twenty students have come to the UofA under this program. Many have worked with other Professors in Engineering. This effort has now been extended to a university wide DD for an MSc and a PhD. I am also leading an effort to establish a DD in MSc with l'Institut Mines Telecom (IMT) in France. IMT is an institute that represents all Ecole des Mines and Ecoles Telecom in France. These are all leading schools in the Ecole Superieure in the French undergraduate system of engineering education and are amongst the oldest of the schools in France as well as having the highest reputation in quality of graduates. I also lead a program for sending undergraduate UofA students abroad for research internships. The students are sent to several research labs in Europe and Japan. Over 100 students have participated in this program and about half subsequently enroll in graduate studies. These efforts ensure and promote the widest possible participation and recruiting of students in research.

My vision in training Highly Qualiied People (HQP) is to inspire and excite them about the world of discovery through scientific research and collaboration. A lot of my research is highly collaborative with colleagues at the UofA, in Europe and with Sponsors. Central to my training philosophy is to teach HQP the importance of building respect and trust of our collaborators and to maintain honest and open communication with Sponsors while safe guarding their confidential information. It is equally important to train HQP in the shared administrative responsibilities or running and maintaining a safe laboratory and shared facilities. I accomplish this by distributing lab duties amongst the HQP. More details are given under the Training Plan.

I hold individual meetings with new HQP to discuss research expectations, confidentiality as relevant, program duration, course recommendations, meeting practices, career ambitions, conference attendance, publication of research etc.

I require a short written progress report from each HQP every two weeks. Group meetings are held every two weeks with two presentations providing progress. Group discussion is encouraged. HQP are given the responsibility to develop the presentation schedule and provide it on the Group Calendar. Although I maintain an open door policy, I will from time to time call in HQP for one on one meetings. The frequency of these is on as need basis, usually more frequent at the start and end of the research residence of the HQP.

Semi-annual progress meetings are held with Sponsors where HQP orally present their research progress. Each HQP will attend at least one international conference to present their research and HQP are guided to attain the publication of peer reviewed paper(s) from their research.

I encourage my graduate students to serve as Teaching Assistants. This provides an opportunity to practice mentoring, and carrying out professional assessments. When an HQP is well advanced in their research, I will often hire an undergraduate to work on a smaller project related to the HQP research and supervised by the HQP. I work with the HQP on how to supervise and work with the undergraduate. I also meet regularly with the undergraduate student to monitor progress and ensure they accomplish a positive research experience.

Soft skills are required of a professional. Hence Ethics is a required course for graduate students. Our

Department has a rigorous safety protocol that must be followed by each HQP this is further amplified within my Group. I send HQP to Workshops on professional skills development organized by MITACS as well as the Emerging Leaders Alliance (http://emergingleadersalliance.org/). These activities I consider to be an integral part of the education of the HQP and a preparation for the profession. Included in these soft skills is learning about diversity and how to apply it in our scientific world.

RESEARCH TRAINING PLAN

During an orientation meeting with each HQP, I explain the broad goals of the project and explain the short term objectives that pertain to the research. I explain the interests of the Sponsor and the importance of reaching both a technological and fundamental contribution at the completion of the work. From the outset of the project, I provide sufficient latitude for HQP to take the project in a direction that they can justify. As time progresses the latitude the HQP has decreases. This ensures a timely completion and a positive research outcome for the HQP and the Sponsor.

During Group meetings, HQP take turns presenting a Progress Report on their project. This includes a proposed direction of future work. Both the results presented and the future work are discussed by all HQP in the Group. This often leads to a revised set of issues for the presenting HQP to address. Each of my HQP is trained to operate all equipment dealing with their project. I insist that all of them have desks close to each other in order to converse with each other about their work. Each HQP is also trained by myself, a colleague, a Research Associate, a Technologist or another HQP (or a combination of these) for data analysis and presentation. For example, when we have a successful proposal for beam time on a synchrotron or neutron scattering or a parabolic flight, HQP to participate in these experiments. See Budget Justification section f the proposal.

Some HQP spend additional time in the laboratory of the Sponsor. This enriches and contributes to focus the HQP on the direction of their work. Each HQP in my Group attends at least one Conference during their residence in the group. Attending conferences boost HQP moral and helps them focus on the direction of their research and develop professional networks.

All HQP participate in the administrative operation of the Group. This includes the maintenance of our Google Docs site and Group Calendar. The former is for orientation information and important resources. Other administrative duties and responsibilities shared by HQP include ordering lab supplies, overseeing equipment, who to see for assistance (personal and professional including myself), software facilities accessible to the Group, etc. This provides an opportunity for each HQP to experience how to run and take ownership of a research laboratory and how to collaborate with colleagues.

VIIb. Teaching Experience and Evaluations

Course	Description	Term	Enrol-ment
Mat E 470	Materials Process Engineering Dynamics	W2025	3
Mat E 464	Materials Process Engineering Design	F2024	23
CME 481	Coloquium I	W2023	19
Mat E 464	Materials Process Engineering Design	F2022	31

CME 483	Coloquium II	W2022	31
MAT E 694	Special Topics in Process Metallurgy	W2022	6
MAT E 470	Materials Process Engineering Dynamics	W2022	5
Mat E 464	Materials Process Engineering Design	F2021	31
MAT E 694	Special Topics in Process Metallurgy	W2021	3
MAT E 470	Materials Process Engineering Dynamics	W2021	4
Mat E 464	Materials Process Engineering Design	F2020	29
CME 483	Coloquium II	W2020	20
MAT E 464	Materials Process Engineering Design	F2019	20
MAT E 694	Special Topics in Process Metallurgy	W2019	8
MAT E 470	Materials Process Engineering Dynamics	W2019	1
CME 483	Coloquium II	F2019	20
MAT E 464	Materials Process Engineering Design	F2018	30
MAT E 464	Materials Process Engineering Design	W2017	34
MAT E 694	Special Topics in Process Metallurgy	W2017	6
MAT E 470	Materials Process Engineering Dynamics	W2017	7
	Sabbatical Leave (Sept 2016-June 2017)		
MAT E 221	Powder Fabrication and Process	W2016	44
MAT E 694	Advanced Topics in Materials Engineering (Lec)	W2016	5
MAT E 464	Materials Process Engineering Design	F2015	61
MAT E 221	Powder Fabrication and Process (Lec)	W2015	44
MAT E 221	Powder Fabrication and Process (Sem)	W2015	44
MAT E 464	Materials Process Engineering Design (Lec)	F2014	39
MAT E 221	Powder Fabrication and Process (Lec)	W2014	66
MAT E 464	Materials Process Engineering Design	F2013	36
MAT E 221	Powder Fabrication and Process (Lec)	W2013	51
MAT E 202	Materials Science II (Lec)	W2013	114
MAT E 221	Powder Fabrication and Process (Lec)	W2012	39
MAT E 470	Process Dynamics (Lec)	W2012	9
MAT E 464	Materials Process Engg Design (Lec)	F2009	*37*
MAT E 221	Powder Fabrication and Process (Lec)	W2010	51
MAT E 470	Process Dynamics (Lec)	W2010	13

MAT E 335	Phase Transformations I	F2008	40
MAT E 221	Powder Fabrication and Process (Lec)	W2009	50
MAT E 470	Process Dynamics (Lec)	W2009	30
MAT E 201	Introduction to Materials Science and Engineering	F2007	13
MAT E 202	Introduction to Materials Science and Engineering	F2007	91
MAT E 470	Process Dynamics	W2008	26
MAT E 221	Powder Fabrication and Processing	W2008	45
MAT E 251	Introduction to Materials Science and Engineering	F2005	13
MAT E 252	Introduction to Materials Science and Engineering	F2005	91
MAT E 440	Kinetics and Mass Transfer	W2006	33
MAT E 365	Materials Process Engineering Design	W2006	31

VIIc. International Placement of UofA Undergraduate Students (133)

Astrium GmbH, Friedrichshafen, Germany (2)
2013 - Brandon Kwong
2014 - Jacob John

Ecole des Mines a Nancy, Nancy, France (42):
2002 - Joel Pepin
2003 - Matthew Breakley
2004 - Jonathan Kaida
2005 - Jeremy Glasgow, Emilia Demczuk
2006 - Krista Lumsden, Chuck Watt
2007 - Parham Zabeti
2008 - Rebecca Pinto, Rachel Stewart
2009 - Jenna Snowdon, David Rutledge
2010 - Jennifer Morrison, Jordan Ramsey
2011 - Sarah Dyck
2012 - Marcus Ivey
2013 - Kim Nguyen
2014 - Benjamin Reeves
2015 - Dimple Ji, Cecilia Gee, Jean-Luc Olsen (ULorraine)
2016 - Sida Wang, Joon Park, Colin Reimer
2017 - Andrew Olsvik, Ji Young Yoon
2018 – S. Beck, M. Hashim
2019 – Dew Willow
2020 – Aleeza Batool
2022 – Keith Mateo
2023 – Danielle Beaulieu
2024 –Anakin Gill, Ben Damant, Alexander Nichols, Ben Burnstad, Patrik Szmuc, Tom Betts
2025 - Catherine Elizabeth MacKenzie
2026 – Karlie Mastel
2027 - Ariel O'Brien

Ecole des Mines de Paris a Sophia-Antipolis: (3)
2005 - Jennifer Brogly
2006 - Brendan Crozier
2007 - Stephen Chun

Ecole National Superieure des Industries Chimique (2)
2020 - Tina Zhou

2023-24 – Alexandra Perez

Hokkaido University (30):
2013 – Leo Lun
2014 – Alissa Adams, Justin Forth, Huayuan Jiang, Curtis Ness
2015 – Hyojae Park, Jennifer Stine, Andrew DiTimoteo
2016 – Kabir Nadkarni, Alberto Palomino, Jeremy Pui, Travis Stochinski
2017 – David Evans, Matthew Mun, Raymond Guan
2018 – C. Jar, S. Phan, D. Th. Chau
2019 – Zixuan Zhou, Yunqi Bai, Zane Kordich
2023 – Jason Shukla, Jooyoung Song, Dylan Fu
2024 –Angke He, Patrick Tiang, Michael Cauilfield, Thibaut Dumoulin, Bennet Klein
2025 - Marena Diaz Nakagawa

IFW Dresden (1):
2019 – Yanzhao Yang

NTNU, Trondheim, Norway (12):
2003 - Bill van Beek, Errol Hallberg
2004 - Michael Hlady
2005 - Shawn Wilson
2007 - Stephen Lob
2008 - Natasha Rajan, Benjamin Topinka
2009 - Glendon Tan
2010 - Darcy Stevens
2011 - Kyle LaPointe
2012 - Kyle Lapointe, Tessa-Rae Omelchenko

University of Bremen, Bremen, Germany (31):
2002 - Michael Komarnisky, Randy Klein
2003 - Ryan Atwater, Carol Chan
2004 - Karen Dube
2005 - James Hebers, Chris Leeuw
2006 - Sean Smith
2007 - Lisa Bodez
2008 - Alisa Ahmetovic, Krystina Sulatycki
2009 - Andrea Jeffrey, Ben Topinka, Krystina Sulatycki, Allison Woo
2010 - Ian Selleck, Brady Faught, Jennifer Becker, Chris Borrowski.
2011 - Kyle Nicholson, Sean Wagner
2012 - Stefani L'Abbe
2013 - Huxley Bentz
2014 - Carley Goudreau
2015 - Andre Marie Lumanglas, Dev Vajara, Tischler Cody
2016 - Shinning Li, Evan Chow
2019 – Mabintou Ouattara, Taher Rangwata

University of Rouen, France (1):
2014 – Jerome Ang

Germany Space Agency-Institute of Materials Science (6):
2013 - Adam Patterson
2016 - Max King
2017 - Steven Parth
2019 – David Boon
2024 – Cynthia Cui, Daniel Zhang

Fraunhofer Institute of Manufacturing Technology and Advanced Materials IFAM – Branch Dresden, Germany (4):
2014 - Nicholas Lohmeier
2016 - Dylan Rose

2017 - Asma El Haj 2018 – J. McIntosh
Leibniz Institute for Solid State and Materials Research, Dresden, Germany (1): 2014 – Jaskarn Shergill
Queensland University (1): 2016 – Josh Vani

VIII. Other (49 refereed contributions and Technical Reports)

H1. C.-A. Gandin and 11 others, "Chill cooling for the ElectroMagnetic Levitator in relation with Continuous Casting of steels (CCEMLCC), 3 Year Review," 20 pages, AO-2004-017, May 2020.

H2. H. Fecht and 9 others, "Thermophysical Properties of Liquid Metals for Industrial Process Design, Thermoprop III, 3 Year Review," 29 pages, AO-99022/AO-2009-1020, April 2020.

H3. C.-A. Gandin and 11 others, "Chill cooling for the ElectroMagnetic Levitator in relation with Continuous Casting of steels (CCEMLCC)," Final Report to ESA, 46 pages, AO-2004-017, May 2020.

H4. H. Fecht and 9 others, "Thermophysical properties of liquid metals for industrial process design, ThermoProp II," Final Report to ESA, 99 pages, AO-99022/AO-2009-1020, April 2020.

H5. D.M. Herlach, Ch-A. Gandin, A. Garcia-Escorial, H. Henein, A. Mullis, M. Rettenmayr, *"Non-equilibrium solidification, modelling for microstructural engineering of industrial alloy (NEQUISOL III)"*, Final Report to ESA, 63 pages, AO 2009-0829, December 2018.

H6. Ch-A. Gandin, et al., "*Chill cooling for the ElectroMagnetic Levitator in relation with Continuous Casting of steels (CCEMLCC)*", 3-Yearly Report to ESA, 34 pages, March 2017.

H7. D.M. Herlach, et al., "*Non-equilibrium solidification, modelling for microstructural engineering of industrial alloys*", 3-Yearly Report to ESA, 59 pages, March 2017.

H8. H. Henein, "*Engineering steels for tubular and pipe products – ESTAAP2*", NSERC-CRD, 6 pages, February 2016.

H9. **A-A. Bogno**, J. Chenand, H. Henein, "*Investigation of crack susceptibility and microstructure of boron and silicon modified Rene 80 laser clad weld*", Liburdi, 12 pages, May 1, 2015.

H10. Ch-A. Gandin, et al., "*Chill cooling for the ElectroMagnetic Levitator in relation with Continuous Casting of steels (CCEMLCC)"*, Final Report to ESA, 26 pages, May 1, 2015.

H11. **A-A. Bogno**, Y. Shengze, **P. Delshad Khatib**i, D. Sediako, H. Henein, "*Quantification of microsegregation of rapidly solidified A1-Si and D2 tool steel*", Canadian Neutron Beam Centre, CNBC-0965, 4 pages, January 17, 2015.

H12. **A-A. Bogno**, N. Cifti, D. Sediako, **P. Delshad Khatibi**, H. Henein, "*Generation of a TTT – diagram using an iron-based bulk amorphous alloy*", Canadian Neutron Beam Centre , CNBC-0977, 2 pages, January 17, 2015.

H13. D.M. Herlach, et al., "*Non-equilibrium solidification, modelling for microstructure engineering of industrial alloys (NEQUISOL)*", Final report to ESA, 42 pages, November 23, 2014.

H14. **C. Riveros**, **A-A. Bogno**, H. Henein, "*Characterization of a rapidly solidified cobalt based alloy*", submitted to Kennametal, 10 pages, May 5, 2014.

H15. Ch-A. Gandin, T. Volkmann, D.M. Herlach, V. Uhlenwinkel, H. Henein, "*Chill cooling for the electromagnetic levitator in relation with continuous casting of steels (CCEMLCC)*", ESA-ELIPS AO-2004-017 (European Space Agency), 3 Year Progress Report, 22 pages, March 2014.

H16. D.M. Herlach, Ch-A. Gandin, A. Garcia-Escorial, H. Heinen, "*Non-equilibrium solidification, modelling for microstructure engineering of industrial alloys (NEQUISOL)"*, ESA-ELIPS, AO-1999-023 (NEQUISOL I+II)/AO-2009-829 (NEQUISOL III), 3 Year Progress Report, 35 pages, March 2014.

H17. H. Henein, "*TMS board motions, minutes and musings*", JOM, 66(9), 1542-1543, September 2014.

H18. H. Henein, "*ANR-Microstructural modelling of rapidly solidified droplets and spray formed strip of A1-Cu-Sc*", Strategic Progress Report, NSERC, 13 pages, July 23, 2013.

H19. **J. Valloton**, **A. Ilbagi**, **P. Delshad Khatibi**, H. Henein, "*NEQUISOL Mid-Term Progress Report, UofA Contributions*", ESA Headquarters, Paris, France, April 4, 2013, 43 pages.

H20. **J. Valloton**, **P. Delshad Khabiti**, **A. Ilbagi**, H. Henein, "*CCEMLCC Mid-Term Progress Report, UofA Contributions*", ESA Headquarters, Paris, France, April 5, 2013, 35 pages.

H21. H. Henein, "*Quantitative analysis of A1-Ni, A1-Cu, Fe-C and D2 tool steel structures under limited diffusion conditions*", CSA-FAST Progress Report, Canadian Space Agency, 8 pages, March 19, 2013.

H22. D.M. Herlach, J. Gegner, Ch-A. Gandin, A. Garcia-Escorial, H. Henein, G. U. Grun, M. Schneider, "*Non-equilibrium solidification, modelling for microstructure engineering of industrial alloys*", NEQUISOL II, Mid-Term Report, ESA, 30 pages, March 14, 2013.

H23. Ch-A. Gandin, D.M. Herlach, V. Uhlenwinkle, H. Henein, "*CCEMLCC*", Mid-Term Report, ESA, 30 pages, March 14, 2013.

H24. H. Henein, "*Non-equilibrium solidification of A1-Ni and A1-Fe droplets*", CSA-SSEP Final Report, Canasian Space Agency, 10 pages, March 19, 2013

H25. H. Henein, "*Engineered steels for tubular and pipe products – ESTAP2*", NSERC-CRD, Progress Report Year 1, 17 pages, March 19, 2013.

H26. H. Henein, "*High strength microalloyed steel for strain-based pipeline designs*", NSERC-CRD, Final Report, 48 pages, January 31, 2013.

H27. H. Henein, "*Space Science Enhancement Report (SSEP) – Progress Report on Non-Equilibrium Solidification of A1-Ni and A1-Fe droplets*", Canadian Space Agency, 22 pages, January 2011.

H28. **A. Ilbagi**, H. Henein, "*Phase quantification of rapidly solidified Al-Ni powders using Rietveld analysis*", NRC Canadian Neutron Beam Centre Experimental Report, Canadian Institute for Neutron Scattering, Chalk River, CO, USA, CNBC-2011-SD-10, 2 pages, 2012.

H29. H. Henein, D.G. Ivey, **J. Lu**o, "*High strength microalloyed steel for strain-based pipeline design*", NSERC-CRD Progress report, 29 pages, September 2011.

H30. H. Henein, "*Progress Report on Non-Equilibriumn Solidification of A1-Ni and A1-Fe droplets*", Space Science Enhancement Program (SSEP), Canadian Space Agency, 22 pages, January 2011.

H31. H. Henein, "P*rogress Report on high strength microalloyed steel for strain-based pipeline designs*", NSERC-EVRAZ CRD, 19 pages, September 3, 2010.

H32. H. Henein, "*Milestone 1: TEXUS 49 Rocket Campaign NEQUISOL Ni-Aq EML Experiment*", Travel Report, 9 pages, March 2011.

H33. H. Henein, "*Fabrication of Si-Ge-Nanostructure alloys by explosive-compaction-technology and development of energy-efficient thermoelectric batteries on their base*", STCU Project 4996, Global Partnership Canada, 6 pages, September 2010.

H34. H. Henein, "*Changing Lives Through Global Competency: a new model of engineering education*", JOM, 69 (4), 617-619, 2017.

H35. H. Henein, "*TMS board motions, minutes and musings*", JOM, 66(9), 1542-43, 2014.

H36. **A. Ilbagi**, H. Henein, "*Phase quantification of rapidly solidified Al-Ni powders using Rietveld analysis", NRC Canadian Neutron Beam Centre Experimental Report*, Canadian Institute for Neutron Scattering, Chalk River, CNBC-2011-SD-10, 2 pages, 2012.

H37. J. Chen, **A. Ilbagi**, H. Henein, U. Dahlborg, M. Calvo-Dahlborg, R. Lengsdorf, D.M. Herlach, "Neutron Diffraction Analysis of the Non-Equilibrium Solidification of Al-Fe and Al-Ni: Part 1", NRC-CNBC Annual Report 2008, Scientific Reports 2008, Canadian Institute for Neutron Scattering, Chalk River, CO, USA, 63-65, 2008.

H38. H. Henein, "*Volunteers, the key to Annual Meeting Success, Past and Present*", JOM, 62(5), 14, May 2010.

H39. H. Henein, "*Perspective on Programming*", JOM, 2010.

H40. H. Henein, "*The effect of magnesium granule microstructure on the properties of semi-solid formed test samples*", AUTO 21, Progress Reports, 6 pages, October 2009.

H41. H. Henein, "Canada's Scientific Contribution to Non-Equilibrium Solidification (NEQUISOL) Research in the Reduced-Gravity Environment - D2: Interim Report on Aluminum-based experiments, 4 pages, December 31, 2009.

H42. H. Henein, "Canada's Scientific Contribution to Non-Equilibrium Solidification (NEQUISOL) Research in the Reduced-Gravity Environment - D3: Interim Report on Nickel-based experiments, 4 pages, December 31, 2009.

H43. H. Henein, "Canada's Scientific Contribution to Non-Equilibrium Solidification (NEQUISOL) Research in the reduced-gravity environment – D4: Interim Report on Flight Sample Analysis, 5 pages, December 31, 2009.

H44. J. Chen, **A. Ilbagi**, H. Henein, U, Dahlborg, M. Calvo-Dahlborg, R. Lengsdorf, D.M. Herlach, "*Neutron diffraction analysis of the non-equilibrium solidification of A1-Fe and A1-Ni: Part 1*", NRC Canadian Neutron Beam Centre, Annual Report, 63-65, 2008,

H45. "*Under Strain – Pipe Forming*", Materials World, 7(7), 14, July 2009.

H46. "*An Impulse for Making Better Powder*", Metal Powder Report, 22- 25, March 1997.

H47. K. Olsen, G. Sterzik, H. Henein, "*An Atomization Technique for Upgrading Automotive Al Scrap*", JOM, 1995 October, 14-15.

H48. H. Henein, "*Carnegie-Mellon University, Computers in Process Metallurgy*", Journal of Metals, 36(10), 37-38, October 1984.

H49. H. Henein, "*Process Metallurgy*", CIT Engineering News, Carnegie-Mellon University, 3(2), 16-17, Fall 1983.

IX. Oral Presentations and Posters

IXa. Oral Presentations (315 Oral presentations)

I1. **A. Lim, S. Dehgahi**, H. Henein and A.J. Qureshi, "Characterization of porosity and shrinkage of 3D printed WC-10Ni by Direct Fused Granulate Fabrication," International Conference on Advanced manufacturing 2023, ASTM, Washington, DC, Oct 30 to Nov 3, 2023.

I2. J. Barry Wiskel, **R. Karl, M. Emakapor**, F. Fazeli, C. Cathcart, T. Zhou, S. Yu, D.G. Ivey and H. Henein, "Development and application of a thermal-microstructure model of laminar cooling of an API X70 microalloyed steel," International Conference on **Processing** & **Manufacturing of Advanced Materials:** Processing, Fabrication, Properties, Applications**,** 2023, Vienna, Austria, 6 pages.

I3. **Q.Champdoizeau**, J.Valloton, H.Henein, "Thermophysical properties and containerless solidification of Al-22.5wt%Cu in reduced gravity using the ISS-EML, Microgravity Symposium, TMS Annual Meeting, San Diego, March 2023.

I4. J. Valloton, **A. Sahoo**, M. da Silva Dias Filho, S. Vogel and H. Henein, Microstructural evaluation of containerless solidification of Al-Ce alloys, John A. Dantzig Symposium, TMS Annual Meeting, 2023, San Diego, CA, USA, March 19-23, 2023, 2 pages.

I5. **Anne McDonald**, Anqi Shao, Kimberley Meszaros,Ahmed Qureshi, Michel Rappaz, Tonya Wolfe, Hani Henein, Microstructure Map of Rapidly Solidified 17-4PH Stainless Steel, HiI-AM Conference 2023, June 27, 2023, Halifax, Nova Scotia.

I6. **A. McDonald**, A. Shao, K. Meszaros, A. Qureshi, M. Rappaz, T. Wolfe, H. Henein, "*Microstructure Map of Rapidly Solidified 17-4PH Stainless Steel*," MetSoc Conf. Proceedings, 2023, https://doi.org/10.1007/978-3-031-38141-6_67, pp 489 - 492.

I7. **R. Karl***, J. B. Wiskel, J. Valloton, **F. Rahaman**, H. Henein, C. Cathcart, T. Zhou, S. Yu, "Leveraging Infrared Video Imaging for In-Line Assessment of Oxide Descaler Functionality and Characterization," European Oxide Scale Conference 2022, Dec 2022.

I8. Jose Dias Filho, Aleeza Batool, Yifan Li, Ahmed Qureshi, Hani Henein, "*Effects of TiB2 in an Al-Cu-Sc Alloy in the Hybrid Investment Casting Process*," MS&T22 Materials Science & Technology, Pittsburgh, PA, Oct. 9 – 13, 2022.

I9. J. Valloton, N. Mahdi, L. Rabago, J. Chung, H Henein, "In-situ solidification of eutectic Al-33wt%Cu droplets," ICASP6, IOP Conference Series, Le Bischenberg, France, 20-24 June, 2022.

I10. J. Valloton and H. Henein, "Microstructural study of containerless solidification of Al-Ce alloys," ICASP6, IOP Conf Series, Le Bischenberg, France, 20-24 June, 2022.

I11. J. Valloton, N. Mahdi, L. Rabago, J. Chung and H. Henein, In situ processing of rapidly solidified Al-33wt%Cu droplets, HI-AM. Montreal, June 21-22, 2022

I12. **R. Samson**, T. Lehmann, T.B. Wolfe, H. Henein, A. Qureshi, Analysis of repair interface automated hybrid additive-subtractive manufacturing process, HI-AM Montreal, June 21-22, 2022

I13. **D. Rose**, J. Forth, H. Henein, T. Wolfe and A. Qureshi, "Denuded region formation in NiBSi-WC metal matrix composites deposited by plasma transferred arc additive manufacturing," HI-AM, Montreal, June 21-22, 2022.

I14. **E. Ahmed**, H. Henein, A. Qureshi, J. Liu, "Development of Aluminum-based Dissolvable Alloys for Hydraulic Fracturing Applications," TMS Annual Meeting 2022, 10 pages.

I15. J. Valloton, N. Mahdi, **L. Rabago**, H. Henein, "In situ processing of rapidly solidified Al-33wt%Cu droplets," TMS Annual Meeting 2022, 7 pages.

I16. **Q. Champdoizeau**, H. Henein and A.A Bogno, "The effect of nozzle design in the Discharge Crucible method," 21st Symposium on Thermophysical Properties, June 20-25, 2021.

I17. K. Meszaros, C. Lemelin and H. Henein, "The development of Case Studies in the delivery of a

Materials Engineering Process Design course," Canadian Materials Science Conference, June 3-4, 2021.

I18. H. Henein, "Why Materials Engineering?," First Year Night, University of Alberta, March 9, 2021.

I19. **Rémy Samson**, Thomas Lehmann, Tonya Wolfe, Hani Henein, Ahmed Qureshi, "In-situ automated scan-assisted repair by additive manufacturing," NSERC HI-AM Conference, June 1-2, 2021.

I20. **N. Bhardwaj**, T. Wolfe and H. Henein, "Fused Filament Fabrication of Metal Matrix Composites (MMC)," NSERC HI-AM Conference, June 1-2, 2021.

I21. J. Valloton, A-A. Bogno, M. Rappaz, H. Henein, "Evaluation of heat transfer during rapid solidification of Al-33wt%Cu," NSERC HI-AM Conference, June 1-2, 2021.

I22. Abdoul-Aziz Bogno, Aquinn Hazenberg, Hani Henein, Ahmed Jawad Qureshi, "Development of high-density materials for lightweight components by hybrid investment casting and atomization," 2021 NSERC HI-AM Conference, June 1-2, 2021.

I23. **Dylan Rose**, Justin Forth, Hani Henein, Tonya Wolfe, Ahmed Qureshi, "Semantic segmentation of plasma transferred arc additively manufactured NiBSi-WC optical microscopy images using a convolutional neural network," NSERC HI-AM Conference, June 1-2, 2021.

I24. **D. Diaz**, A-A Bogno and H. Henein, "Alloy Design for Laser Powder-Bed Fusion: Hypereutectic Al-Si Systems," NSERC HI-AM Conference, June 1-2, 2021.

I25. **G. Bonias**, H. Henein and T. Wolfe, "Residual stresses piloted optimization of functionally graded parts using PTAAM," 2021 NSERC HI-AM Conference, June 1-2, 2021.

I26. **Bilal Bharadia**, Abdoul-Aziz Bogno, Hani Henein, "Electrostatically Assisted Atomisation," 2021 HI-AM COnference, June 1-2, 2021.

I27. **Anne McDonald**, Abdul Abdul-Aziz Bogno, Hani Henein, Tonya Wolfe, "Microstructure of Rapidly Solidified 17-4 PH Stainless Steel," 2021 NSERC HI-AM Conference, June 1-2, 2021.

I28. **A. Sahoo**, A.A. Bogno and H. Henein, "Rapid Solidification of Al-10Si-0.4Sc Alloy," 2021 NSERC HI-AM Conference, June 1-2, 2021.

I29. Hani Henein, Jonas Valloton, Peter Galenko, Markus Rettenmayr "Batch 2 results for NEQUISOL, IWG Meeting, ESA, May 5, 2021.

I30. **Akankshya Sahoo**, Abdoul-Aziz Bogno and Hani Henein, "The Microstructure, Morphology and Mechanical Properties of Rapidly Solidified Al-10wt%Si-0.4wt%Sc Alloy," 2021 TMS Annual Meeting, March 15-18, 2021.

I31. J.Valloton, A-A. Bogno, M. Rappaz, H. Henein, "Numerical model of rapidly solidified droplets of Al-33wt%Cu eutectic," 2021 TMS Annual Meeting, March 15-18, 2021.

I32. Carlos Junior, Rodrigo Reyes, Leonardo Gomes, Jose Spinelli, Abdoul-Aziz Bogno, Hani Henein, "Evaluation of microstructures and hardness of Al-10Si-0.45 Mg-0.4Sc alloy powders solidified by impulse atomization," 2021 TMS Annual Meeting, March 15-18, 2021.

I33. **Akankshya Sahoo**; Abdoul Aziz Bogno; Hani Henein, "Study of the solidification pathways of hypo/hyper-eutectic Al-Ce over a wide range of thermal histories," 2021 TMS Annual Meeting, March 15-18, 2021.

I34. **Q. Champdoizeau**, J. Valloton and H. Henein, "Growth velocity and thermophysical properties of materials using Electromagnetic Levitation," United Nations Office for Outer Space Affairs, May 19, 2021.

I35. Jonas Valloton, Abdoul-Aziz Bogno, Christian Schlepütz, Guillaume Reinhart, Michel Rappaz, Hani Henein, "4D Characterization of Solidification in Al-based Droplets," 5th International

Congress on 3D Materials Science (3DMS 2021), June 29 - July 2, 2021.

I36. C.E.S. Junior, R.V. Reyes, L.F. Gomes, J.E. Spinelli, A.-A. Bogno, and H. Henein, "Evaluation of Microstructures and Hardness of Al-10Si-0.45Mg-0.4Sc Alloy Powders, Light Metals", 50th Edition, L. Perander, Editor TMS, Springer, 2021, pp 270-276.

I37. J. Valloton, A-A. Bogno, M. Rappaz, H. Henein, "Numerical model of Al-33wt%Cu eutectic growth during Impulse Atomization, Frontiers in Solidification, TMS 2021, Feb 2021.

I38. **Nancy Bhardwaj**, Hani Henein, Tonya Wolfe, "Fused Filament Fabrication of Metal Matrix Composites (MMC)," Symposium: Additive Manufacturing of Ceramics and Ceramic Composites: Materials Properties, Processes, and Modeling, Materials Science & Technology 2020, Nov 2-6, 2020.

I39. **M. Dias**, A.-A. Bogno, J. E. Spinelli, A.Garcia, H. Henein, Effect of Bi on the rapid solidification microstructure and properties of hypoeutectic Al-Si, Virtual COM 2020, October 14 and 15, 2020.

I40. J. Valloton, A.A. Bogno, C. Schleputz, M. Rappaz and H. Henein, Virtual COM 2020, October 14 and 15, 2020.

I41. **D. Diaz**, A.A. Bogno and H. Henein, Modification of Si morphology in hypereutectic Al-Si, combining alloying and rapid solidification, Virtual COM 2020, October 14 and 15, 2020.

I42. A-A Bogno, M.C. Tamboli, A. Saboouraud, A.J. Qureshi and H. Henein, Manufacturing of 3D Lattice structures by hybrid investment casting Virtual COM 2020, October 14 and 15, 2020.

I43. **B. Bharadia**, A-A. Bogno and H. Henein, Electrostatic Atomisation of Metals, 2020 HI-AM Conference, Montreal, QC, Jun 25-26, 2020.

I44. **N. Bhardwaj**, H. Henein, and T. Wolfe, Fused Filament Fabrication of Metal Matrix Composites (MMC), 2020 HI-AM Conference, Montreal, QC, Jun 25-26.

I45. **J. Valloton**, T. Volkman and H. Henein, "Chill-Cooling of D2 tool steel under reduced gravity conditions," Microgravity Symposium, TMS Annual meeting, San Diego, CA, Feb 23- 27, 2020.

I46. **B. Bharadia**, **A-A. Bogno**, H. Henein, "*Electrostatic atomisation of metals"*, HI-AM Conference 2019, Vancouver, BC, Canada, June 26-27, 2019.

I47. T. Lehmann, T. Wolfe, H. Henein, A. Qureshi, *"In-situ sensing and measurement for quality control in metal additive manufacturing: Review and future directions"*, HI-AM Conference 2019, Vancouver, BC, Canada, June 26-27, 2019.

I48. **A. Sabouraud**, **A. Biswas**, **A-A. Bogno**, A. Qureshi, H. Henein, *"Hybrid additive manufacturing and casting processes for non ferrous alloys"*, HI-AM Conference 2019, Vancouver, BC, Canada, June 26-27, 2019.

I49. **D. Rose**, T. Wolfe, H. Henein, L. Li, "Influence of operating parameters during plasma transferred arc additive manufacturing on carbide concentration of 70wt% Ni-WC metal matrix composite components", HI-AM Conference 2019, Vancouver, BC, Canada, June 26-27, 2019. **Awarded 2nd Prize for Best Presentation at HI-AM.**

I50. **N. Bhardwaj**, T. Wolfe, H. Henein, *"Progress in applying fused filament fabrication to metal matrix composites (MMC)"*, HI-AM Conference 2019, Vancouver, BC, Canada, June 26-27, 2019.

I51. **S. Ibrahim**, T. Wolfe, H. Henein, L. Li, "*A study of plasma transfer arc–additive manufacturing using 17-4 ph powders*", TMS 2019 Annual Meeting & Exhibition, San Antonio, TX, USA, March 11-14, 2019.

I52. H. Henein, **A. Van der Laan**, J.B. Wiskel, D.G. Ivey, "*Modeling of the effect of run-*

out table cooling on the microstructure of a thick walled X70 skelp", Microalloyed Steel Symposium, Materials Science & Technology Conference and Exhibition 2018 (MS&T'18), Columbus, OH, USA, October 14-18, 2018.

I53. J.B. Wiskel, **J. Ma**, D.G. Ivey, H. Henein, "*Transverse strain aging behaviour of uncoated thick walled X70 UOE microalloyed steel pipes*", IPC2018-78102, Proceedings of 12th International Pipeline Conference (IPC2018), 7 pages, Calgary, AB, Canada, September 24-28, 2018.

I54. **D. Rose**, T. Wolfe, L. Li, H. Henein, "*Formation of denuded region in additive manufactured part using Plasma-Arc Welding*", Additive Manufacturing Symposium, 30th Canadian Materials Science Conference (CMSC 2018), University of Alberta, Edmonton, AB, Canada, June 19-22, 2018.

I55. **N. Bhardwaj**, T. Wolfe, H. Henein, "*Progress in applying fused filament fabrication to metal matrix composites*", Additive Manufacturing Symposium, 30th Canadian Materials Science Conference (CMSC 2018), University of Alberta, Edmonton, AB, Canada, June 19-22, 2018.

I56. **M. Arjomandpur**, **C. Chatelier**, J.B. Wiskel, D.G. Ivey, H. Henein, "*Microstructure and Mechanical Properties of X70 and Thick Walled X70 Steels*", Physical Metallurgy Symposium, 30th Canadian Materials Science Conference (CMSC 2018), University of Alberta, Edmonton, AB, Canada, June 19-22, 2018.

I57. **D. Diaz**, **A-A. Bogno**, **V. Dheer**, H. Henein, M. Rappaz, **J. Valloton**, *"Characterization of impulse atomized Al-Cu eutectic powders"*, Physical Metallurgy Symposium, 30th Canadian Materials Science Conference (CMSC 2018), University of Alberta, Edmonton, AB, Canada, June 19-22, 2018.

I58. J.E. Spinelli, **W. Hearn**, **A-A. Bogno**, H. Henein, "*A general formulation of eutectic silicon morphology and processing history*", Martin O., Ed., Light Metals 2018, 381-388, TMS 2018 Annual Meeting & Exhibition, Phoenix, AZ, USA, March 11-15, 2018.

I59. **A-A. Bogno**, H. Henein, M. Gallerneault, "Design and processing conditions of hypoeutectic Al-Cu-Sc alloys for maximum benefit of Scandium", Martin O., Ed., Light Metals 2018, 1609-1616, TMS 2018 Annual Meeting & Exhibition, Phoenix, AZ, USA, March 11-15, 2018.

I60. **M. Mohammadijoo**, L. Collins, R. Lazor, H. Henein, D.G. Ivey, *"Impact of martensite-Austenite constituent formation on the fracture toughness of the HAZ of HSLA pipeline steel"*, CanWeld 2017, 9 pages, Montreal, QC, Canada, September 13-14, 2017.

I61. **T. Wolfe**, J.M. Rojas, **D. Rose**, A. Qureshi, G. Fisher, H. Henein, *"Performance of PTA AM components for mining and energy applications"*, Alloy Development and Powder Manufacture for Additive Manufacturing, TMS 2018 Annual Meeting & Exhibition, Phoenix, AZ, USA, March 11-15, 2018.

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I63. **A-A. Bogno**, **J. Valloton**, M. Rappaz, H. Henein, *"A Study of Rapidly Solidified Al-Cu Eutectic, Light Metal Alloys: Processing for Performance"*, COM 2017, August 27-30, 2017.

I64. **A-A. Bogno**, **J. Valloton**, H. Henein, M. Gallerneault, "*Microstructural analysis for improvement in Al-Cu-Sc casting processes*", Materials for Transportation Symposium in the 3rd Pan American Materials Congress, E. Daalgard and P. Zambrano, TMS 2017

Annual Meeting, San Diego, CA, USA, February 2017.

I65. **A-A. Bogno**, **J. Valloton**, H. Henein, "*Scandium effect on undercooling and dendrite morphology of Al–4.5 wt.%Cu droplets, Applications of Solidification Fundamentals*", A. Phillion and A. Genau, eds, TMS 2017 Annual Meeting, San Diego, CA, USA.

I66. **T. Wolfe**, G. Fisher, H. Henein, "*Challenges Adopting Additive Manufacturing Processes into Mining and Energy Applications*", MS&T'16, Salt Lake City, UT, USA, October 23-27, 2016.

I67. **J. Valloton**, **P. Delshad Khatibi**, D. Herlach, H. Henein, "*Microstructural quantification of rapidly solidified D2 tool steel*", Symposium Materials Science of Additive Manufacturing, MS&T'15, Columbus, OH, USA, October 4-8, 2015.

I68. **A-A. Bogno**, **J. Valloton**, H. Henein, "*Scandium effects on nucleation undercooling in Al-Cu droplets generated by Impulse Atomization and Electro-Magnetic Levitation*", Symposium Materials Science of Additive Manufacturing, MS&T'15, Columbus, OH, USA, October 4-8, 2015.

I69. G. Zepon, N. Ellendt, **P. Delshad Khatibi**, H. Henein, C. Bolfarini, V. Uhlenwinkel, "*Microstructural evolution of D2 tool steel produced by powder atomization, droplet-on-demand and spray forming*", Euro PM2015 Congress & Exhibition, Reims, France, October 4-7, 2015.

I70. S. Sander, C. Tischler, H. Henein, U. Fritsching, "*PVP Particle Production via Electrospray Atomization*", ILASS – Europe 2016, 27th Annual Conference on Liquid Atomization and Spray Systems, Brighton, UK, September 2016.

I71. **M. Mohammadijoo**, H. Henein, D.G. Ivey, "*Microstructural characterization of the HAZ in welded microalloyed steels*", Microscopical Society of Canada, Edmonton, AB, Canada, June 2016.

I72. J.B.Wiskel, **J. Kennedy**, D.G. Ivey, H. Henein, " *Ultrasonic Velocity and Attenuation Measurements in L80 Steel and their Correlation with Tensile Properties*", 19th World Conference on Non-Destructive Testing 2016, 9 pages, Munich, Germany, June 13-17, 2016.

I73. J. B. Wiskel, **J. Kennedy**, K. Vasudev, D.G. Ivey, H. Henein, "*Assessment and modelling of ultrasonic velocities in X70 pipeline steel*", The 19th World Conference on Non-Destructive Testing, Munich, Germany, November 17-19, 2015.

I74. **P.Wang**, S.Nafisi, J.B. Wiskel, D.G. Ivey, H. Henein, L.Collins, "*Quantitative Microprobe Analysis of Centreline Segregation in Microalloyed Steels and the Effect of Homogenization*", AISTech 2016, Pittsburgh, PA, USA, May 16-19, 2016.

I75. **J. Valloton**, **A-A. Bogno**, D.M. Herlach, H. Henein, "*Microstructure Evolution in Containerless Solidification*", Frontiers in Solidification: An MPMD Symposium in Honor of Michel Rappaz, TMS 2016 Annual Meeting, Nashville, TN, USA, February 2016.

I76. **J. Valloton**, **A-A. Bogno**, D.M. Herlach, H. Henein, "*Microstructure Evolution in Undercooled Al-Fe Melts", Materials Research in Reduced Gravity*", TMS 2016 Annual Meeting, Nashville, TN, USA, February 2016.

I77. **T. Wolfe**, G. Fisher, H. Henein, "*Challenges Adopting Additive Manufacturing Processes into Mining and Energy Applications*", Symposium: Additive Manufacturing: Building the Pathway towards Process and Material Qualification, TMS 2016 Annual Meeting, Nashville, TN, USA, February 2016.

I78. J.B. Wiskel, J. Ma, D.G. Ivey, H. Henein, "*An Investigation of Aging Behaviour in*

Microalloyed Steel (X70) UOE Pipe Using a Box-Behnken Experimental Design", HSLA Steels 2015 & Microalloying 2015 & OES 2015, The Chinese Society for Metals (CSM) and Chinese Academy of Engineering (CAE), November 2015.

I79. **J. Valloton**, **P. Delshad Khatibi**, D. Herlach, H. Henein, *"Microstructural quantification of rapidly solidified D2 tool steel"*, Symposium: Materials Science of Additive Manufacturing, MS&T'15, Columbus, OH, USA, October 4-8, 2015

I80. **A-A. Bogno**, **J. Valloton**, **P. Natzke**, **S. Yin**, D.M. Herlach, H. Henein, *"Scandium effects on nucleation undercooling in Al-Cu droplets generated by Impulse Atomization and Electro-Magnetic Levitation"*, Materials Science of Additive Manufacturing, MS&T'15, October 2015.

I81. **J. Valloton**, D. M. Herlach, H. Henein, *"Dendrite Growth Kinetics in Undercooled Melts of D2 Tool Steels"*, 6th ISPS, International Symposium for Physical Sciences in Space, Kyoto, Japan, September 14-18, 2015.

I82. **A-A. Bogno**, **J. Valloton,** H. Henein, *"On the characterization of high undercooling induced rapid solidification microstructures of metallic alloys"*, COM 2015, Toronto, ON, Canada, August 23-26, 2015.

I83. **M. Mohammadijoo**, **S. Kenny**, J.B. Wiskel, D.G. Ivey, H. Henein, *"Cold-wire tandem submerged arc welding: a novel technique to increase the productivity of pipeline manufacturing"*, COM 2015, Toronto, ON, Canada, August 23-26, 2015.

I84. **N. Khodaie**, D.G. Ivey, H. Henein, *"Advanced Dilatometry Analysis Using Unit Cell Dilation (UCD) Method"*, International Conference & Exhibition on Advanced & Nano Materials, Ottawa, ON, Canada, August 10-12, 2015.

I85. A. García-Escorial, M. Lieblich, H. Henein, **A. Ilbagi**, R. Lengsdorf, D.M. Herlach, *"Containerless Solidification of the Al68.5Ni31.5 Raney Alloy"*, 22nd International Symposium on Metastable, Amorphous and Nanostructured Materials (ISMANAM 2015), Maison de Mutualité, Paris, France, July 13-17, 2015.

I86. **J. Ma**, J.B. Wiskel, D.G. Ivey, H. Henein, "*An Investigation into Transverse Tensile Properties of Uncoated Microalloyed Steel (X70) UOE Pipes Affected by Strain Aging*", Young Pipeliners Association of Canada Pipeline Conference 2015, Edmonton, AB, Canada, August 28, 2015.

I87. J.B. Wiskel, **J. Kennedy,** D.G. Ivey, H. Henein, *"Ultrasonic Velocity Evaluation of Three Grades of Heat Treated Steel"*, Canadian Institute for Non-Destructive Evaluation, Edmonton, AB, Canada, June 15-17, 2015.

I88. **A. Maitre**, **A-A. Bogno**, M. Bedel, G. Reinhart, H. Henein, *"Heterogeneous nucleation of the primary phase in the rapid solidification of Al-4.5wt%Cu alloy droplet"*, XIV MCWASP 2015, Modelling of Casting, Welding and Solidification Processes, Awaji Island, Hyogo, Japan, June 22-26, 2015.

I89. **C. Riveros**, **A-A. Bogno**, D. Li, H. Henein, *"Characterization of Rapidly Solidified CoCr-Base Bulk Metallic Glass"*, CMSC 2015, Halifax, NS, Canada, May 31 - June 3, 2015.

I90. **T. Wolfe**, T. Silva, G. Fisher, H. Henein, *"Performance Mapping of Tungsten Carbide Metal Matrix Composites for use in Severe Wear Applications"*, I. Roy; X. Zhang; T. Chen; G. Kusinski; J. Rodrigues; H. Elshahawi, Editors, Symposium: Advanced Materials and Reservoir Engineering for Extreme Oil & Gas Environments II, TMS 2015 Annual Meeting, Orlando, FL, USA, March 15-19, 2015.

I91. M. Bedel, G. Reinhart, Ch-A. Gandin, **A-A. Bogno**, H. Nguyen-Thi, H. Henein,

"Evolution of grain morphology with solidification velocity in rapidly solidified Al-4.5wt.%Cu droplets", MCWASP 2015, June 2015.

I92. **A-A. Bogno**, **P. Natzke**, **S. Yin**, H. Henein, *"Undercooling of rapidly solidified droplets and spray formed strips of Al-Cu (Sc)"*, Proceedings of Characterization of Minerals, Metals and Materials, J. Carpenter et al, Eds, TMS 2015 Annual Meeting, Orlando, FL, USA, March 15-19, 2015.

I93. **P. Delshad Khatibi**, **J. Valloton**, H. Henein, D.M. Herlach, *"University of Alberta Contribution to CCEMLCC II Project"*, Ecole National Superieur des Mines de Paris (Mines ParisTech), Paris, France, December 19, 2014.

I94. H. Henein, **A. Ilbagi**, **A-A. Bogno**, **A. Maitre**, *"Universty of Alberta Contribution to NEQUISOL III Project"*, Ecole National Superieur des Mines de Paris (Mines ParisTech), Paris, France, December 18, 2014.

I95. **A. Maitre**, D.G. Ivey, H. Henein, *"Precipitation in Continuously Cast Microalloyed Steels"*, MS&T'14, Pittsburgh, PA, USA, October 2014.

I96. **J. Kennedy**, J.B. Wiskel, D.G. Ivey, H. Henein, *"Characterization of L80 steel microstructure using ultrasonic measurements"*, MS&T'14, Pittsburgh, PA, USA, October 2014.

I97. J.B. Wiskel, J. Prescott, H. Henein, *"Finite element thermal analysis of surface cold spots observed during infrared video imaging of a moving hot steel strip"*, 12th Quantitative InfraRed Thermography Conference, (QIRT), Bordeaux, France, July 7-11, 2014.

I98. **A-A. Bogno**, J. Eduardo Spinelli, H. Henein, *"Microstructural and hardness analysis of extruded An-0.7Cu solder alloy"*, Processing of Materials Symposium, Second Pan American Materials Conference, Sao Paolo, Brazil, July 21–25, 2014.

I99. **J. Kennedy**, J.B. Wiskel, D.G. Ivey, H. Henein, *"Effect of Microstructure on Ultrasonic Measurements in L80 and X70"*, CMSC 2014, Saskatoon, SK, Canada, June 2014.

I100. **J. Valloton**, D.M. Herlach, H. Henein, *"Dendrite Growth Kinetics in Undercooled Melts of D2 Tool Steels*", 4th ICASP, 4th International Conference on Advances in Soldification Processing, Beaumont Estates, Old Windsor, UK, July 8-11, 2014.

I101. G. Reinhart, **A-A. Bogno**, Ch-A. Gandin, H. Nguyen-Thi, E. Boller, S. Jacomet, L. Silva, H. Henein, *"Dendrite growth morphologies in rapidly solidified Al-4.5wt.%Cu droplets"*, 2014 ICASP, 4th International Conference on Advances in Soldification Processing, Beaumont Estates, Old Windsor, UK, July 8-11, 2014.

I102. **T. Wolfe**, G. Fisher, H. Henein, *"Wear and corrosion performance of modified Ni-based WC metal matrix composite overlays for use in severe wear applications"*, Symposium on Advances in Surface Engineering: Alloyed and Composite Coatings III, TMS 2014 Annual Meeting, San Diego, CA, USA, February 16-20, 2014.

I103. **A. Maitre,** R. Patte, F. Danoix, D.G. Ivey, H. Zapolshy, H. Henein, *"Austenite-ferrite transformation: A Monte Carlo Study"*, Symposium on the Phase Transformation and Microstructural Evolution — Fundamentals of Diffusion in Transformations in Steels, TMS 2014 Annual Meeting, San Diego, CA, USA, February 16-20, 2014.

I104. **A. Maitre**, S. Shah, D.G. Ivey, H. Henein, *"Ferroalloy induced precipitates in continuously cast microallloyed steels"*, Celebrating the Megascale: An EPD Symposium in Honor of David G.C. Robertson, TMS 2014 Annual Meeting, San Diego, CA, USA, February 16-20, 2014.

I105. **J. Valloton**, **P. Delshad Khatibi**, T. Volkmann, **A. Maitre**, D. Herlach, H. Henein, *"Dendrite growth kinetics of D2 tool steel undercooled melts"*, 5th ISPS, Orlando, FL, USA, November 2013.

I106. **A-A. Bogno**, **P. Delshad Khatibi**, H. Henein, Ch-A. Gandin, *"Quantification of Primary and Eutectic undercoolings of Impulse Atomized Al-Cu droplets"*, Light Metals, MS&T'13, Montreal, QC, Canada, October 27-31, 2013.

I107. **T. Wolfe**, G. Fisher, H. Henein, *"Enrichment of NiCrBSi-WC overlays for improvements in wear resistant properties"*, Symposium On Coatings for Corrosion and Wear-resistance Applications, MS&T'13, Montreal, QC, Canada, October 27-31, 2013.

I108. **N. Ciftci**, N. Ellendt, R. von Bargen, H. Henein, L. Mädler, V. Uhlenwinkel, *"Determination of amorphous fraction and crystallization kinetics of a [(Fe0.6Co0.4)0.75B0.2Si0.05}96Nb4 glassy powder*", 5th SDMA, Bremen, Germany, September 23-25, 2013.

I109. **P. Delshad Khatibi**, H. Henein, *"Microstructural investigation of D2 tool steel spray deposits"*, 5th SDMA, Bremen, Germany, September 23-25, 2013.

I110. **P. Delshad Khatibi**, H. Henein, *"In-situ measurements in a drop tube-impulse system"*, 5th SDMA, Bremen, Germany, September 23-24, 2013.

I111. **A-A. Bogno**, **P. Wang, S. Yin**, H. Henein, *"Microstructural Analysis of rapidly solidified droplets of Al-Cu-Sc"*, 8th Pacific Rim International Congress on Advanced Materials and Processing (PRICM-8), Waikoloa, HI, USA, August 4-9, 2013.

I112. **P. Delshad Khatibi**, H. Henein, *"On the annealing of rapidly solidified high chromium-high carbon tool steel"*, 8th Pacific Rim International Congress on Advanced Materials and Processing (PRICM-8), 10 pages, Waikoloa, HI, USA, August 4-9, 2013.

I113. **P. Delshad Khatibi**, **A. Ilbagi**, H. Henein, *"CCEMLCC Mid-Term Progress Report, UofA Contributions"*, ESA Headquarters, Paris, France, April 5, 2013. Presented by **J. Valloton***

I114. **A. Ilbagi**, **P. Delshad Khatibi**, H. Henein, *"NEQUISOL Mid-Term Progress Report, UofA Contributions"*, ESA Headquarters, Paris, France, April 4, 2013. Presented by **J. Valloton***

I115. **T. Wolfe**, G. Fisher, H. Henein, *"Evolution of microstructure of NiCrBSi-WC overlays for enhancement of wear resistant properties"*, Advanced Materials and Reservoir Engineering for Extreme Oil & Gas Environments, TMS 2013Annual Meeting, San Antonio, TX, USA, March 3-7, 2013.

I116. D.M. Herlach, J. Gegne, Ch-A. Gandin, D. Tourret, H. Henein, **A. Ilbagi**, A. Garcia Escorial, G.U. Grün, M. Schneider, *"Non-Equilibrium Solidification, Modeling for Microstructure Engineering of Industrial Alloys (NEQUISOL)"*, Materials Science in Reduced Gravity, TMS 2013 Annual Meeting, San Antonio, TX, USA, March 3-7, 2013.

I117. **P. Delshad Khatibi**, H. Henein, *"Investigations on the falling of droplets in an instrumented drop tube-impulse system*", Materials Science in Microgravity Research, D. Matson, R. Hyers and H. Henein, TMS 2013 Annual Meeting, San Antonio, TX, USA, March 3-7, 2013.

I118. **W. Huang**, **J. Lu**o, H. Henein, J. Jordan, *"Sulfide Stress Cracking Resistance of Low Alloy Steels for Casing Application in Sour Environments"*, NACE International Northern Area Western Conference, Victoria, BC, Canada, February 11-14, 2013.

I119. J.B. Wiskel, **B. Binesh,** A. Ben-Zvi, H. Henein, *"Configuration of a laminar cooling*

system using a Branch and Bound optimization methodology", MS&T'12, Pittsburgh, PA, USA, October 8-11, 2012.

I120. **S.J.A. Shah**, D.G. Ivey, H. Henein, *"Characterization of Commercial Grade Ferroniobium Alloys"*, Solidification, Crystal Growth and Microstructural Correlation with Properties of Materials: to Celebrate 75th Birthday of Prof. Martin E. Glicksman, MS&T'12, Pittsburgh, PA, USA, October 8-11, 2012.

I121. **W. Huang**, **J. Lu**o, H. Henein, J. Jordan, *"Corrosion assessment of low alloy steels for casing application in sour environments"*, Corrosion: Recent Advances & Sustainability Symposium, COM 2012, Niagara Falls, ON, Canada, October 1-3, 2012.

I122. **K. Jonsson**, D.G. Ivey, H. Henein, S. Nafisi, L. Collins, T. Garcin, W. Poole, *"The Effect of Microstructure on the Tensile Behaiour of X80 Microalloyed Steel"*, ASME 2012, 9th International Pipeline Conference, Calgary, AB, Canada, September 24-28, 2012.

I123. **A. Ilbagi**, H. Henein, D. Herlach, *"Quantification of primary phase undercooling of rapidly solidified droplets with 3D microtomography"*, 1st International Conference on 3D Materials Science 2012 (3DMS), A. Lewis, M. De Graef, J. Simmons, H. Poulsen, G. Spanos, Seven Springs Mountain Resort, Seven Springs, PA, USA, July 8-12, 2012.

I124. **J. Pepin**, H. Henein, D.G. Ivey, M. Yarmuch, G. Casey, C. Penniston, D. Boyd, "*Using polarity specific heat input to evaluate the effects of AC submerged arc welding (SAW) waveform variables on deposition rates and weld bead profiles*", 9th International Conference on Trends in Welding Research, ASM International, Chicago, IL, USA, June 4-8, 2012.

I125. **A. Ilbagi**, D. Tourret, H. Henein, Ch-A. Gandin, *"Neutron diffraction analysis and solidification modeling of Impulse-Atomized Al-36wt%Ni"*, 13th International Conference on Modelling of Casting and Solidification Processes MCWASP XIII, Styria, Austria, June 17-22, 2012.

I126. **S.J.A. Shah**, D.G. Ivey, H. Henein, *"Characterization of Commercial Grade Ferrotitanium and Ferroniobium Alloys"*, 24th Canadian Materials Science Conference, London, ON, Canada, June 5-8, 2012.

I127. **P. Delshad Khatibi**, H. Henein, D.G. Ivey, *"Effect of rapid solidification and heat treatment on D2 tool steel*", Randall M. German Honorary Symposium on Sintering and Powder-based Materials, TMS 2012 Annual Meeting, Orlando, FL, USA, March 11-15, 2012.

I128. **P. Delshad Khatibi**, **A. Ilbagi**, H. Henein, *"On-Line, real time diagnostics of a single fluid atomization system*", Materials Research in Microgravity, TMS 2012 Annual Meeting, Orlando, FL, USA, March 11-15, 2012.

I129. **S. Kenny**, H. Henein, D.G. Ivey, J.B. Wiskel, A. Gerlich, L. Collins, *"Submerged Arc Welding X70 Linepipe Steel with Three Electrodes"*, FabTech 2011, Chicago, IL, USA, November 2011.

I130. **K. Jonsson**, D.G. Ivey, H. Henein, S. Nafisi, L. Collins, *"The effect of microstructure on the mechanical properties of X80 microalloyed steel"*, MS&T'11, October 2011.

I131. **J. Pepin**, C. Penniston, H. Henein D.J. Ivey, L. Collins. D. Boyd, *"The Effects of Submerged Arc Welding (SAW) Waveform Variables on Productivity and HAZ Characteristics, for Single and Tandem Electrode Welds"*, COM 2011, Montreal, QC, Canada, October 2011.

I132. **J. Pepin**, M. Yarmuch, G. Casey, H. Henein, D.G. Ivey, L. Choi, *"The effects of current*

and voltage waveforms on submerged arc welding productivity", Canadian Welding Association Conference, Banff, AB, Canada, September 18-20, 2011.

I133. **N. Khodaie**, J.B. Wiskel, D. Ivey, H. Henein, *"Quantification of the kinetics of the austenite to ferrite transformation at moderate transformation temperatures in a microalloyed steel"*, 23rd CMSC, UBC Okanagan, Kelowna, BC, Canada, June 22-24, 2011.

I134. **A. Ilbagi**, **P. Delshad Khatibi**, H. Henein, *"The effect of hydrogen evolution during the rapid solidification of Al-9Si alloy"*, Paper # 2011-01-0058, PowderMet 2011, MPIF, San Francisco, CA, USA, May 18-21, 2011.

I135. I. Makarov, J. Jordan, **J. Lu**o, H. Henein, *"Hydrogen Uptake and Permeation of High Strength, low alloyed steels for Casing Applications"*, 2011 Northern Area Western Conference, Regina, SK, Canada, February 6-8, 2011.

I136. **P. Delshad Khatibi**, H. Henein, *"Microstructural investigation of D2 Tool Steel during Rapid Solidification using Impulse Atomization"*, Collected Proceedings: Processing and Properties of Powder-Based Materials, TMS 2011 Annual Meeting, San Diego, CA, USA, February 2011.

I137. **H. Kaftelen**, L. Öveçoğlu, H. Henein, N. Ünlü, *"Effect of Particle Size on The Microstructure and Hardness of TiC and ZrC Reinforced Al-4 wt. %Cu Metal Matrix Composites Fabricated by A Novel Casting Method"*, TMS 2011 Annual Meeting, San Diego, CA, USA, February 2011.

I138. **B. Binesh**, A. Ben-Zvi, J. B. Wiskel, H. Henein, "Optimized Temperature Control of a Steel Skelp in a Laminar Cooling System", TMS 2011 Annual Meeting, San Diego, CA, Feb 2011.

I139. C. Borowski, H. Henein, **A. Ilbagi**, *"Rapid solidification by impulse atomization of aluminum 40 weight percent nickel powders"*, 61st International Astronautical Congress 2010, IAC 2010, Prague, Czech Republic, September 27–October 1, 2010.

I140. C. Borowski, **A. Ilbagi**, H. Henein*, "The Rapid Solidification of Al-40wt%Ni Using a Drop Tube Apparatus",* Microgravity Science Symposium, 61st International Astronautical Congess, Prague, Czech Republic, September 27-October 1, 2010.

I141. **J. Pepin**, C. Penniston, D.G. Ivey, H. Henein, D. Boyd, *"The Effects of Changing AC SAW Waveform Variables"*, 2010 FABTECH EXPO, November 2-4, 2010.

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I263. K. Noderer, H. Henein, "*A Survey on the Use of Expert Systems in the Iron and Steel Industry"*, Ironmaking Conference, ISS, Detroit, MI, USA, March 26, 1990.

I264. H. Henein, D.J. Holve, *"On Line Sensor for Powder Metals Processing"*, Conference on Powder Metallurgy: Key to Advanced Materials Technology, ASM Int., Vancouver, BC, Canada, July 30-August 1, 1990.

I265. J. Suni, H. Henein, "*Prediction of Longitudinal Surface Cracking in Continuously Cast Slabs Using a Frame Based Facility"*, Symposium on Expert & Knowledge-Based System Applications in Materials Processing and Manufacturing, TMS 1990 Annual Meeting, Anaheim, CA, USA, February 1990.

I266. H. Henein, I. Hulthage, *"Billet Sequencing of Open Die Forging of 718"*, Symposium on Expert & Knowledge-Based System Applications in Materials Processing and Manufacturing, TMS 1990 Annual Meeting, Anaheim, CA, USA, February 1990.

I267. J. Suni, H. Henein, *"A Knowledge Based Approach to Predicting Longitudinal Surface Cracks in Continuously Cast Slabs"*, CIM Conference of Metallurgists, Halifax, NS, Canada, August 1989.

I268. **J.O.G. Parent**, J. Iyengar, H. Henein, *"Powder Blending in Metal Matrix Composites Systems"*, APMI Annual Meeting, San Diego, CA, USA, June 1989.

I269. G. Jiang, H. Henein, M.W. Siege1, *"An Overview of Intelligent Sensors for Atomization Processing of Molten Metals and Alloys*", APMI Annual Meeting, San Diego, CA, USA, June 1989.

I270. Z. Li, H. Henein, *"On the Dispersion and Heating of Powders Injected into a Confined Turbulent Gas Stream"*, TMS 1989 Annual Meeting, Las Vegas, NV, USA, 1989.

I271. J**.O.G. Parent**, J. Iyengar, H. Henein, *"Powder Blending in Metal-Matrix Composite Systems"*, TMS 1989 Annual Meeting, Las Vegas, NV, USA, 1989.

I272. M.W. Siegel, H. Henein, *"Sensors for Atomization Processing of Molten Metals in Research and Production"*, TMS 1989 Annual Meeting, Las Vegas, NV, USA, 1989.

I273. C. Abel, H. Henein, *"Heat Transfer Analysis of Horizontal Continuous Casting"*, Electric Furnace Conference, Pittsburgh, PA, USA, December, 1988.

I274. **B. Lally**, H. Henein, L. Biegler, *"Prediction of Optimal Operating Parameters for*

Direct Charging", 27th Annual Conference of Metallurgists, Montreal, QC, Canada, August 1988.

I275. H. Henein, "Heat Transfer Tutor and Caster for Educational Computing and Simulation", International Symposium on Computer Software in Chemical and Extractive Metallurgy, 27th Annual Conference of Metallurgists, Montreal, QC, Canada, August 1988.

I276. G. Jiang, M. Siegel, H. Henein, *"Intelligent Sensors for Atomization Processing of Molten Metals and Alloys"*, Fine Powder 88, CIM Conference of Metallurgists, Montreal, QC, Canada, August 1988.

I277. **B. Lally**, H. Henein, L. Biegler, *"Prediction of Optimal Operating Parameters for Continuous Casting Slabs"*, Conference of Modelling of Casting and Welding Processes, AIME-TMS, Florida, USA, 1988.

I278. Z. Li, G. Jiang, D. Vensel, H. Henein, *"A Phenominological Study of the Injection of Powders into a Turbulent Gas Stream"*, W.O. Philbrook Symposium, AIME-ISS, Toronto, ON, Canada, April 17-20, 1988.

I279. **B. Lally**, H. Henein, L. Biegler, *"Prediction of Optimal Operating Parameters for Continuous Casting Slabs"*, Proceedings of Modelling of Casting and Welding Processes, AIME-TMS, Florida, USA, April 17-22, 1988.

I280. Z. Li, H. Henein, *"A Phenomenological Study of the Injection of Powders into a Turbulent Gas Stream"*, Electric Furnace Conference, ISS-AIME, Chicago, IL, USA, December 10, 1987.

I281. **B. Lally**, L. Biegler, H. Henein, *"A Model for Sequencing a Continuous Casting Operation to Minimize Costs"*, TMS 1987 Fall Extractive Meeting on Mathematical Modelling in Metals Processing, Palm Springs, CA, USA, November 29-December 2, 1987.

I282. **B. Lally**, L. Biegler, H. Henein, *"Optimization Modelling of Continuous Casting Billets"*, TMS 1987 Fall Extractive Meeting on Mathematical Modelling in Metals Processing, Palm Springs, CA, USA. November 29- December 2, 1987.

I283. J. Suni, H. Henein, *"Knowledge Based System to Predict Longitudinal Surface Cracking in Continuous Casting"*, TMS 1987 Fall Extractive Meeting on Mathematical Modelling in Metals Processing, Palm Springs, CA, USA , November 29-December 2, 1987.

I284. H. Henein, *"Segregation in the Processing of Abrasives"*, Abrasives and Grain Association Conference, Cleveland, OH, USA, October 28, 1987.

I285. H. Henein, *"Intelligent Sensors for Atomization Processing of Molten Metals and Alloys"*, APMI Pittsburgh Chapter, October 20, 1987.

I286. H. Henein, *"State-of-the-Art Modelling Tools for Continuous Casting"*, AISE National Conference, Pittsburgh, PA, USA, September 23, 1987.

I287. H. Henein, *"Educational Software: The Heat Transfer Tutorial"*, Conference on Computer Software for Chemical and Extractive Metallurgy Calculations, University of Missouri-Rolla, Rolla, MO, USA, May 31- June 4, 1987.

I288. B. Pollard, H. Henein, *"Segregation of Irregular Solids in Rotary Reactors"*, American Ceramics Society, Pittsburgh, PA, USA, April 26-30, 1987.

I289. D. Vensel, H. Henein, *"Gas/Particle Interactions in Turbulent Gas Streams"*, Ironmaking and Steelmaking Conference, ISS-AIME, Pittsburgh, PA, USA, April 1987.

I290. **B. Lally**, L. Biegler, H. Henein, *"The Optimization Modelling of Continuous*

Processes", ASM Pittsburgh Chapter Education Day on Process Automation, Computer Applications in the Metals Industry, Pittsburgh, PA, USA, March 7, 1986.

I291. D. Vensel, H. Henein, P.H. Dauby, *"The Relationship Between Steelmaking Operating Variables and the Mechanism of Scrap Melting"*, 68th Steelmaking Conference, ISS-AIME, Detroit, MI, USA, April 14-17, 1985.

I292. G.E. Diebold, J. Russ, H. Henein, G.W. Warren, M.W. Siegel, L. Biegler, *"Sensor Development For Hydrometallurgical Processes"*, 114th AIME Annual Meeting, New York, NY, USA, February 24-28, 1985.

I293. S.H. Kim, G.W. Warren, H. Henein, "Reaction Kinetics of Ferric Chloride Leaching of Lead Sulfide", 114th AIME Annual Meeting, New York, NY, USA, February 24-28, 1985.

I294. G.W. Warren, H. Henein, Z-M. Jin, *"Ferric Chloride Leaching of Sphalerite - An Electrochemical Approach"*, 114th AIME Annual Meeting, New York, NY, USA, February 24-28, 1985.

I295. N. Nityanand, H. Henein, *"Radial Segregation of Granular Solids in Horizontal Rotary Reactors"*, 114th AIME Annual Meeting, New York, NY, USA, February 24-28, 1985.

I296. W.R. Willkomm, H. Henein, L. Biegler, *"Modelling and Simulation of Hydrometallurgical Reactors"*, 23rd CIM Conference of Metallurgists, Quebec City, QC, Canada, August 19-22, 1984.

I297. G.W. Warren, H. Henein, Z-M. Jin, *"Mathematical Modelling of the Ferric Chloride Leaching of Sphalerite"*, 23rd CIM Conference of Metallurgists, Quebec City, QC, Canada, August 19-22, 1984.

I298. N. Nityanand, H. Henein, *"Radial Segregation in Rotary Kilns"*, Annual Meeting of the American Ceramics Society, Refractory Division Technical Program, Pittsburgh, PA, USA, April 29-May 2, 1984.

I299. R.J. Matway, H. Henein, J. Isaacs, R.J. Fruehan, *"Physical Modelling of the Combined or Mixed Blowing Processes"*, 4th PTD Conference on Mixed Gas Blowing, ISS-AIME, Chicago, IL, USA, April 1-4, 1984.

I300. N. Nityanand, B. Manley, C. Abel, H. Henein, *"An Experimental Investigation of Bed Behavior in Horizontal Rotary Reactors"*, 113th AIME Annual Meeting, Los Angeles, CA, USA, February 26-March 2, 1984.

I301. Z-M. Jin, G.W. Warren, H. Henein, *"An Experimental and a Mathematical Investigation of the Ferric Chloride Leaching of Sphalerite"*, 113th AIME Annual Meeting, Los Angeles, CA, USA, February 26- March 2, 1984.

I302. S.H. Kim, G.W. Warren, H. Henein, *"Relations Between the Ferric Chloride Leaching of Galena and Lead"*, 113th AIME Annual Meeting, Los Angeles, CA, USA, February 26-March 2, 1984.

I303. H. Henein, Co-Chairman, *"Review of Chemical and Process Metallurgy Research at C-MU"*, papers presented on: Physical Modelling of Mixed Blowing Processes, Reaction Kinetics in Ferric Chloride, Modelling of Rate Processed in Multiparticle Systems, Simulation of Continuous Agitation Leaching Operations, Carnegie-Mellon University, Pittsburgh, PA, USA, October 6, 1983.

I304. H. Henein, G.W. Warren, "The Kinetics of the Ferric Chloride Leaching of Galena and Sphalerite", 112th AIME Annual Meeting, Atlanta, GA, USA, March 9, 1983.

I305. H. Henein, J.K. Brimacombe, A.P. Watkinson, *"Segregation in Rotary Kilns"*, 112th AIME Annual Meeting, Atlanta, GA, USA, March 7, 1983.

I306. G.W. Warren, H. Henein, *"Ferric Chloride Leaching of Galena: Symposium of Laboratory Exercises in Extractive Metallurgy"*, TMS-AIME, 111th AIME Annual Meeting, Dallas, TX, USA, February 16, 1982.

I307. H. Henein, *"Teaching by Lecture"*, Post-Doctoral Conference, Lilly Endowment, Inc., Bloomington, IN, USA, December 5, 1981.

I308. H. Henein, *"Student Tensions"*, Post-Doctoral Conference, Lilly Endowment, Inc., Bloomington, IN, USA, December 5, 1981.

I309. H. Henein, J.K. Brimacombe, A.P. Watkinson, *"Bed Behaviour in Rotary Kilns"*, Second International World Congress of Chemical Engineers, Canadian Society of Chemical Engineers, Montreal, QC, Canada, October 5, 1981.

I310. H. Henein, J.K. Brimacombe, A.P. Watkinson, *"Bed Behaviour in Rotary Kilns"*, Extractive Metallurgy, TMS-AIME 109th AIME Annual Meeting, Las Vegas, NV, USA, February 27, 1980.

I311. H. Henein, *"Bed Behaviour and Heat Transfer in Rotary Kilns"*, Process Research Seminar, University of British Columbia, Vancouver, BC, Canada, September 14, 1978.

I312. H. Henein, J.K. Brimacombe, A.P. Watkinson, *"Bed Behaviour and Heat Transfer in Rotary Kilns"*, Extractive Metallurgy, TMS-AIME, 107th AIME Annual Meeting, Denver, CO, USA, February 28, 1978.

I313. H. Henein, J.K. Brimacombe, A.P. Watkinson, *"Surface Particle Dynamics and Heat Transfer to Rotary Kiln Beds"*, 16th Annual Conference of Metallurgists, CIM, August 22, 1977.

I314. H. Henein, L. Gourtsoyannis, R.I.L. Guthrie, *"An Experimental and Mathematical Evaluation of Shooting Methods for Projecting Buoyant Alloy Additions into Liquid Steel Baths"*, 14th Conference of Metallurgists, CIM, August 1975.

I315. L. Gourtsoyannis, H. Henein, R.I.L. Guthrie, *"Some Kinetic and Hydrodynamic Aspects of Making Aluminum and Ferro-Alloy Additions to Steel Baths"*, Symposium on Physical Chemistry and Additions of Alloy Additives, Process Technology, ISS-AIME, 103rd AIME Annual Meeting, Dallas, TX, USA, February 1974.

I316. H. Henein, R.I.L. Guthrie, R. Clift, *"Contacting Problems Associated with Aluminum and Ferro-Alloy Additions in Steelmaking-Hydrodynamic Aspects"*, Symposium of Physical Chemistry and Additions of Alloy Additives, Process Technology, ISS-AIME, 103rd AIME Annual Meeting, Dallas, TX, USA, February 1974.

I317. H. Henein, R.I.L. Guthrie, *"Contacting Problems Associated with Aluminum and Ferro-Alloy Additions in Steelmaking-Hydrodynamic Aspects"*, 12th Conference of Metallurgists, CIM, Quebec City, QC, USA, August 1973.

IXb. Poster Presentations (83 Posters)

J1. **V. Milani**, J.B. Wiskel, L. Li, D.G. Ivey, G. Lehnhoff, P. Schamuhn Kirk, and H. Henein Effect of Ti/N ratio on CTOD Fracture Toughness of Multi-pass Welds, IPC Conference, Calgary, September 24 to 27, 2024.

J2. **D. Beaulieu,** A. Nomine and H. Henein, "Impact of steels critical raw materials demand based on sustainability factors," Academia Stands for Green Deal, Mines Nancy, Nancy, France, May 10-11, 2023.

J3. **A. Akankshy**, A-A Bogno, J. Valloton, D.G. vey, H. Henein, Rapid solidification of Al-10Si-0.4Sc (wt%): precipitation behavior and its influence on mechanical properties, HI-AM Montreal, June 21-22, 2022.

J4. **A. E. McDonald**, H. Henein and T.B. Wolfe, "Effect of cooling rate on the microstructure of Rapidly solidified 17-4PH Stainless Steel, HI-AM Montreal, June 21-22, 2022.

J5. **A. Shao**, J. Borrelli, K. Meszaros, J. Valloton, A. Qureshi, H. Henein, " Modelling of a single pass wire and arc additive manufacturing, HI-AM Montreal, June 21-22, 2022.

J6. **G. Bonias**, H. Henein, T.B. Wolfe, Thermal and residual strss modeling of functionally graded deposits using PTAAM, HI-AM. Montreal, June 21-22, 2022.

J7. **J.M. da Silva Dias Filho**, A. Batool, Y. Li, A. Qureshi, H. Henein, Effect of TiB2 in an Al-Cu-Sc alloy in the Hybrid investment casting process, HI-AM. Montreal, June 21-22, 2022.

J8. **A. Sahoo**, A-A Bogno amd H Henein, *The Microstructure, Morphology and Mechanical Properties of Rapidly Solidified Al-10Si-0.4Sc Alloy*, TMS Annual Meeting, Virtual Meeting, March 15-18, 2021.

J9. **A. Sahoo**, A-A. Bogno and H. Henein. *The Microstructure, Morphology and Mechanical Properties of Rapidly Solidified Al-10wt%Si-0.4wt%Sc Alloy*, 2020 HI-AM Conference, Montreal, QC, Jun 25-26.

J10. **Q. Champdoi**, A-A. Bogno and H. Henein, *Spheroidization of Al-33Cu droplets microstructure*, 2020 HI-AM Conference, Montreal, QC, Jun 25-26.

J11. J. Jonas, A-A. Bogno and H. Henein, *Numerical model of Al-33wt%Cu eutectic growth during Impulse Atomization*, 2020 HI-AM Conference, Montreal, QC, Jun 25-26.

J12. **G. Bonias**, T. Wolfe and H. Henein, *Additive manufacturing of FGM parts using PTA*, 2020 HI-AM Conference, Montreal, QC, Jun 25-26.

J13. A-A Bogno, **M.C. Tamboli**, A.J. Qureshi, H. Henein, *Manufacturing of 3D lattice structures by hybrid investment casting*, 2020 HI-AM Conference, Montreal, QC, Jun 25-26.

J14. **R. Samson**, T. Lehmann, T. Wolfe, H. Henein and A. Qureshi, *In-situ volume reconstruction for additive manufacturing repairs: a review*, 2020 HI-AM Conference, Montreal, QC, Jun 25-26.

J15. **D. Diaz Jimenez**, A-A. Bogno and H. Henein, *Primary Si Modification via Rapid Solidification and Alloying*, 2020 HI-AM Conference, Montreal, QC, Jun 25-26.

J16. **S. El Moghazi**, J. Mercado Rojas, T. Wolfe, H. Henein, A. Qureshi, "*Effect of Process Parameters on Plasma Transferred Arc Additive Manufactured 17-4PH using the Taguchi Method,"* TMS Annual Meeting, San Diego, Feb 23-27, 2020.

J17. **M. Dias**, A-A. Bogno, J. Spinelli, A. Garcia, H. Henein," *Effects of Bi in rapid solidification of a hypoeutectic Al-Si alloy,*" TMS Annual Meeting, San Diego, Feb 23-27, 2020.

J18. **R. Raj**, J.B. Wiskel, D.G. Ivey, L. Li and H. Henein, "*Homogenization on manganese microsegregation in continuously cast microalloyed steel slabs*," MS&T 2019, Portland Oregon, Sept 30 to Oct 3, 2019. 3rd place Graduate Poster Category.

J19. **D. Diaz-Jimenez**, **A-A. Bogno**, **J. Valloton**, H. Henein, "*Rapid solidification of Al-Cu eutectic"*, HI-AM Conference 2019, Vancouver, BC, Canada, June 26-27, 2019.

J20. H. Henein, **A-A. Bogno**, **J. Valloton**, *"Numerical model of Al-33wt%Cu eutectic growth during impulse atomization"*, HI-AM Conference 2019, Vancouver, BC, Canada, June 26-27, 2019.

J21. **S. Ibrahim**, T. Wolfe, H. Henein and L. Li, *"Processing conditions of 17-4 PH using plasma transfer arc additive manufacturing"*, HI-AM Conference 2019, Vancouver, BC, Canada, June 26-27, 2019.

J22. **A. Sahoo**, H. Henein, **A-A. Bogno**, **W. Hearn**, "*Rapid solidification of impulse*

atomized Al-Si-Sc", Symposium: Additive Manufacturing and Welding: Physical and Mechanical Metallurgy of Rapidly Solidified Metals, TMS 2019 Annual Meeting & Exhibition, San Antonio, TX, USA, March 11-14, 2019.

J23. **P. Flood**, **A-A. Bogno**, H. Henein, *"Physical property measurement of metallic liquids using the Discharge Crucible method",* 30th Canadian Materials Science Conference (CMSC 2018), University of Alberta, Edmonton, AB, Canada, June 19-22, 2018.

J24. **L. Ren**, **A-A. Bogno**, H. Henein, *"The measurement of viscosity for an SiO2-FeO/Fe2O3-CaO Slag"*, 30th Canadian Materials Science Conference (CMSC 2018), University of Alberta, Edmonton, AB, Canada, June 19-22, 2018.

J25. **S. Ibrahim**, T. Wolfe, L. Li, H. Henein, *"A Study of Plasma Transfer Arc – Additive Manufacturing using 17-4 PH powders"*, 30th Canadian Materials Science Conference (CMSC 2018), University of Alberta, Edmonton, AB, Canada, June 19-22, 2018.

J26. **R. Raj**, L. Li, J.B. Wiskel, H. Henein, "Dissolution and coarsening of Niobium precipitates during slab homogenization", 30th Canadian Materials Science Conference (CMSC 2018), University of Alberta, Edmonton, AB, Canada, June 19-22, 2018.

J27. **S. Gawor**, J.B. Wiskel, J.L. Luo, H. Henein, L. Collins, R. Stankievech, *"Gracking behavior of X65 steel using modified NACE TW084-2016 test"*, 30th Canadian Materials Science Conference (CMSC 2018), University of Alberta, Edmonton, AB, Canada, June 19-22, 2018.

J28. **S. Ouhiba**, J.B. Wiskel, R. Stankievech, J.L. Luo and H. Henein, *"Influence of inclusions and centreline segregation on hydrogen induced cracking of L80 Steel"*, NACE International, 2017 Northern Area Western Conference, Edmonton, AB, Canada, February 13-17, 2017.

J29. **P. Wang**, J.B. Wiskel, D.G. Ivey, H. Henein, L. Collins, *"Characterization of centreline segregation in microalloyed steel continuous slabs"*, Microscopical Society of Canada, Edmonton, AB, Canada, June 2016.

J30. **S. Ouhiba**, J.L. Luo, D.G. Ivey, J.B. Wiskel, H. Henein, R. Stankievech, *"Characterization of sulphide stress cracking and hydrogen induced cracking in L80 steel using different microscopy techniques"*, Microscopical Society of Canada, Edmonton, AB, Canada, June 2016.

J31. G.R. Moreno, J.E. Spinelli, **A-A. Bogno**, H. Henein, "*Correlation between microstructure and mechanical properties of atomized Sn-3.0wt%Ag-0.7wt%Cu solder alloy powders*", 22nd International Symposium on Metastable, Amorphous and Nanostructured Materials (ISMANAM 2015), Maison de Mutualite, Paris, France, July 13-17, 2015.

J32. **A. Lecoanet**, D.G. Ivey, H. Henein, *"Simulation of the Temperature Profile During Welding with COMSOL Multiphysics® Software Using Rosenthal's Approach"*, Proceedings of the 2014 COMSOL Conference, Boston MA, USA, October 2014.

J33. **J. Valloton**, D.M. Herlach, H. Henein, *"Dendrite Growth Kinetics in Undercooled Melts of D2 Tool Steels",* ISSET Space Exploration Symposium 2014, University of Alberta, Edmonton, AB, Canada September 25-26, 2014.

J34. M. Bedel, G. Reinhart, **A-A. Bogno**, X. Xing, H. Nguyen-Thi, E. Boller, B. Fayard, Ch-A. Gandin, H. Henein, "*Characterization of rapidly solidified A1-4.5wt%Cu droplets by synchrotron X-ray micro-tomography*", 3DMS, 2nd International Congress on 3D Materials Science 2014, Annecy, France, June 29-July 2, 2014.

J35. **A. Ilbagi, P. Delshad Khatibi, D. Beinker**, H. Henein, "*In-situ measurement of cooling rate during solidification in a drop tube-impulse system*", 9th Annual UofA Space Exploration Sympsosium (ISSET 2012), Telus World of Science, Edmonton, AB, Canada, September 28, 2012.

J36. **A. Ilbagi**, H. Henein, J. Chen, D.M. Herlach, R. Lengsdorf, Ch-A Gandin, D. Tourret, A. Garcia-Escorial, "Containerless solidification and characterization of industrial alloys (NEQUISOL)", 9th Annual UofA Space Exploration Symposium (ISSET 2012), Telus World of Science Edmonton, AB, Canada, September 28, 2012.

J37. **S. Zakaria**, D.G. Ivey, A. Gerlich, H. Henein, C. Penniston, L.E. Collins, *"Study on the microstructure and mechanical properties of submerged arc welded X80 steel"*, Graduate Research Symposium, Faculty of Engineering, University of Alberta, Edmonton, AB, Canada, July 2011.

J38. **A. Ilbagi**, **P. Delshad Khatib**i, **D. Beinker**, H. Henein, "In-situ measurement of cooling rate during solidification in a drop tube-impulse system", ISPS 4, Bonn, Germany, July 2011.

J39. **A Ilbagi**, H. Henein, J. Chen, D. M. Herlach, R. Lengsdorf, Ch-A. Gandin, D. Tourret, A. Garcia-Escorial, "*Containerless Solidification and Characterization of Industrial Alloys (NEQUISOL)*", 4th ISPS, Bonn, Germany, July 11-15, 2011.

J40. **A. Ilbagi**, **P. Delshad Khatibi**, **D. Beinker**, H. Henein, "*On-Line real time diagnostics of a single fluid atomization system*", 23rd CMSC, UBC Okanagan, Kelowna, BC, Canada, June 22-24, 2011.

J41. **P. Delshad Khatibi**, **A. Ilbagi**, H. Henein, "*The effect of rapid solidification and heat treatment on the microstructure and properties of D2 tool steels*", 23rd CMSC, UBC Okanagan, Kelowna, BC, Canada, June 22-24, 2011.

J42. **W. Huang**, **J. Lu**o, H. Henein, I. Makarov, J. Jordan, "*Corrosion assessment of different alloy chemistry and microstructure of L80 steel for sour gas service*", 2011 Northern Area Western Conference, Regina, SK, Canada, February 6-8, 2011.

J43. **J. Pepin**, C. Penniston, M. Yarmuch, D. Ivey, H. Henein, "*The Effects of Changing AC SAW Waveform Variables*", 2010 FABTECH Expo, Atlanta, GA, USA, November 2-4, 2010.

J44. **J. Pepin**, C. Penniston, H. Henein, D.G. Ivey, J.B. Wiskel, J.D. Boyd, "*Effects of Submerged Arc Welding Parameters on Bead Geometry and Notch-Toughness of X70 Linepipe Steels",* 2009 FABTECH Expo, Chicago, IL, USA, November 15-19, 2009. Awarded 2nd place in Student Poster Competition

J45. **J. Pepin**, D.G. Ivey, J.B. Wiskel, H. Henein, C. Penniston, J.D. Boyd, "*The Effects of Manipulating Heat Input and Current Waveform on Submerged Arc Bead-on-Plate Weld Profiles*", COM 2009, Sudbury, ON, Canada, August 23-26, 2009.

J46. **A. Ilbagi**, H. Henein, "*Rapid Solidification of Al-Ni Alloys*", Graduate Student Symposium, University of Alberta, Edmonton, AB, Canada, May 21, 2009.

J47. H. Henein, J. Chen, **A. Ilbagi**, D.M. Herlach, Ch-A. Gandin, A. Garcia-Escorial, "*Non-Equilibrium Solidification for Quantitative Microstructure Engineering of Ni and Al alloys*", University of Alberta Space Exploration Symposium, Edmonton, AB, Canada, September 26-27, 2008.

J48. X. Li, J.B. Wiskel, H. Henein, D.G. Ivey, O. Omotoso, "*Quantitative Characterization of Microstructure in High Strength Microalloyed Steels Using X-ray Diffraction*", CME Graduate Research Symposium, Department of Chemical and Materials Engineering,

University of Alberta, Edmonton, AB, Canada, May 27, 2008.

J49. **J. Lu**, D.G. Ivey, H. Henein, "*Characterization of Nano-precipitates in Microalloyed Steels*", CME Graduate Research Symposium, Department of Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada, May 27, 2008.

J50. H. Henein, D. Herlach, Ch-A. Gandin, A. Garcia-Escorial, C. Jefferies, "*Non-Equilibrium Solidification for Quantitative Microstructure Engineering of Ni and Al alloys*", Life and Physical Sciences Workshop, Canadian Space Agency, St. Hubert, QC, Canada, March 3-5, 2008.

J51. **A. Prasad**, H. Henein, Ch-A. Gandin, "*Microstructure and microsegregation in rapidly solidified Impulse Atomized Al-Cu alloys*", LMT 2007, September 2007.

J52. **T.B. Wolfe**, H. Henein, "*Heat Input Effects on Segregation of MMC Coatings Deposited by Plasma Transferred Arc Welding*", Graduate Student Symposium, Department of Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada, May 29, 2007.

J53. **J. Pepin**, D.G. Ivey, H. Henein, "*Welding Microalloyed TMCP Steels & HAZ Characteristics (A Literature Review)*", Graduate Student Symposium, Department of Chemical & Materials Engineering, University of Alberta, Edmonton, AB, Canada, May 29, 2007.

J54. **J. Lu**, D.G. Ivey, H. Henein, "*Matrix Dissolution to Extract and Quantify Precipitates in Microalloyed Steels*", Graduate Student Symposium, Department of Chemical and Materials Engineering, University of Alberta, Edmonton, AB, Canada, May 29, 2007.

J55. **E. Niemi**, **J. Lu**, J.B. Wiskel, H. Henein, " ..", COM 2005, Calgary, AB, Canada, August 21-24, 2005.

J56. **E. Hallberg**, H. Henein, "*The Influence of Convection Currents on Impurity Segregation during Zone Refinement*", COM 2005, Calgary, AB, Canada, August 21-24, 2005.

J57. **J. Lu**, H. Henein, D.G. Ivey, "*Quantification of precipitates in microalloyed steels*", COM 2005, Calgary, AB, Canada, August 21-24, 2005. 2nd Place Poster Prize.

J58. C. Watt, H. Henein, M. Kazakevich, J. Johansson, Ch-A. Gandin, E. Maire, "*Visualization of a Rapidly Solidified Al - 0.6 wt% Fe particle using Micro-Tomography*", COM 2005, Calgary, AB, Canada, August 21-24, 2005. 3rd Place Poster Prize.

J59. **A. Prasad**, H. Henein, E. Maire, "*Use of X-Ray tomography in studying Rapid Solidification*", CLS 7th Annual Users' Meeting and Workshops, University of Saskatchewan, Saskatoon, SK, Canada, November 17-21, 2004.

J60. **C. Townsend**, S. Corbin, H. Henein, P. Apté, "*Characterization of the Al-Al2O3 and Al-ZrO2 interface in the liquid metal processing of MMC's*", Design, Manufacturing and Applications of Composites, the 5th Joint Canada-Japan Workshop on Composites, Yonezawa, Japan, September 2004.

J61. H. Herringer, Ch-A. Gandin, G. Lesoult, H. Henein, "*Heat and Solute Flow Modelling in Dropelt Solidifcation*", Euromat 2003, Lausanne, Switzerland, September 1-5, 2003.

J62. **K. Sandy**, J.B. Wiskel, H. Henein, "*Interface Reactions in B4C-Ni and WC-Ni*", Conference of Metallurgists, Vancouver, BC, Canada, August 24-27, 2003.

J63. H. Henein, "*Bulk-Nano and Bulk Amorphous Alloys through Controlled Process Engineering*", Canadian Nano Mission to Europe, November 16 - December 5, 2002.

J64. **M. Rieder**, B. Wiskel, H. Henein, B. Nelson, "*Modeling the Forming of a Microalloyed*

SteelPipe", Steel Workshop, McMaster University, Hamilton, ON, Canada, June 4-6, 2001.

J65. **A. Prasad**, H. Henein, E. Maire, "*A Microstructural Analysis of an Impulse Atomized Al-5Cu Alloy*", PM2Tek 2001, New Orleans, LA, USA, May 13-17, 2001. Awarded Honourable Mention in Research and Development Category.

J66. H. Henein, "*Computer Aided Education in Materials Science and Engineering Education*", TMS 2000 Annual Meeting, Nashville, TN, USA, March 2000.

J67. W. Hum, G. Serianis, Z. Champsi, H. Henein, "*Computer Aided Education in Materials Science and Engineering Education*", 38th Conference of Metallurgists, Quebec City, QC, Canada, August 22-25, 1999.

J68. K. Lindenback, J.B. Wiskel, H. Henein, "*MELT - Materials Engineering Learning Technologies*", TMS 1999 Annual Meeting, San Diego, CA, USA, February 28 - March 4, 1999.

J69. M. Jamal, K. Lindenback, V. Orlick, J.B. Wiskel, K. Roberge, H. Henein, "*MELT - Materials Engineering Learning Technologies*", 37th Conference of Metallurgists, Calgary, AB, Canada, August 16-19, 1998.

J70. **C. Townsend**, H. Henein, S.F. Corbin, P. Apte, "*Characterization of the Metal-Ceramic Interface in the Liquid Metal Processing of MMCs*", Composites at Lake Louise, Lake Louise, AB, Canada, October 12-16, 1997.

J71. E. Maire, D.S. Wilkinson, H. Henein, J.D. Embury, "*The Microstructure and Mechanical Behaviour of Al/Cu Alloys with a Heterogeneous Spacial Distribution of the Second Phase Particles*", Composites at Lake Louise, Lake Louise, AB, Canada, October 12-16, 1997.

J72. K. Roberge, J. Shook, H. Henein, "*Computer Aided Instruction in Materials Science and Engineering Education*", 36th Conference of Metallurgists, Metallurgical Society of CIM, Sudbury, ON, Canada, August 20, 1997.

J73. **C. Townsend**, H. Henein, S. Corbin, P. Apte, "*Interfacial Characterization of Aluminum-Alumina and Aluminum-Zirconia Composites*", TMS 1997 Annual Meeting, Orlando, FL, USA, February 9-13, 1997.

J74. J. Shook, K. Roberge, H. Henein, "*Showcasing of Arrowroot v2.4b, Gendia v2 and BMDPro v2.5.7b*", TMS 1997 Annual Meeting, Orlando, FL, USA, February 9-13, 1997.

J75. T. Le, R. Stefaniuk, H. Henein, J-Y Huot, *"Discharge Coefficients in Melt Atomization Delivery Tubes"*, 35th Conference of Metallurgists, Montreal, QC, Canada, August 25-29, 1996.

J76. H. Henein, "*Computer-Aided Instruction in Materials Science and Engineering Education*", Instructional Fair '96, University of Alberta, Edmonton, AB, Canada, March 12-13, 1996.

J77. R. Beaudoin, H. Henein, V.E. Merchant, "*Drilling of Ceramics Using Lasers*," 34th Conference of Metallurgists, Vancouver, BC, Canada, August 19-24, 1995.

J78. K. Olsen, G. Sterzik, H. Henein, "*Upgrading Scrap Automotive Aluminum Alloys with the Impulse Atomization and Quench Technique*", 34th Conference of Metallurgists, Vancouver, BC, Canada, August 19-24, 1995.

J79. G. Sterzik, C. Ward, T. Le, H. Henein, "*Image Analysis of Confined Sprays in Molten Metal Atomization*", 34th Conference of Metallurgists, Vancouver, BC, Canada, August 19-24, 1995.

J80. R.M.E. Paterson, H. Henein, "*A Computer Aided Instructional Approach to Teaching*

Introductory Numerical Methods to Engineers", Joint Conference of the American Society of Engineering Education and the Canadian Conference on Engineering Education, Edmonton, AB, Canada, June 26-29, 1994.

J81. **D. Yuan**, J. Fallavollita, R. Eadie, H. Henein, "*A Novel Technique for Making Metal and Alloy Powders with narrow Size Distributions*", Research Revelations '94, University of Alberta, Edmonton, AB, Canada, March 5, 1994.

J82. Z-J. Xing, H. Henein, "*Isokinetic Sampling During Gas Atomization of Molten Metals*", Workshop on the Control of Particulate Processes, Engineering Foundation, Santa Barbara, CA, USA, January 1993.

J83. **K. Pillai**, H. Henein, "*Heat Generation in Horizontal Rotary Reactors*", 31st Conference of Metallurgists, Met.Soc.- CIM, Edmonton, AB, Canada, Auust 23-26, 1992.

J84. **D. Yuan**, H. Henein, R. Eadie, "*The Production of Metal Powders Using a Pulsating Atomizer*", 31st Conference of Metallurgists, Met.Soc.- CIM, Edmonton, AB, Canada, August 23-26, 1992.