

Curriculum Vitae

I. Personal Information

Name: LIU, Jing

Address: 9211 – 116 Street NW, 12-289 DICE Building, Edmonton, AB T6G 1H9, Canada

Email: jing.liu.arrow@ualberta.ca

Group Site: <https://sites.google.com/ualberta.ca/ceaes-center/home>

Telephone: 1-(780) 492-8754

Fax: 1-(780) 492-2881

Professional Engineer Status: P.Eng. in Alberta since 2020

Education

Ph.D. *Materials Engineering, 2015*

University Name: The University of British Columbia (UBC)

Thesis Title: High temperature and high pressure corrosion of titanium in hydrometallurgical applications

Advisor Name: Professor Edouard Asselin and Professor Akram Alfantazi

B.Sc. *Oil & Gas Storage Engineering, 2008*

University Name: China University of Petroleum (East China)

Two years' study in Computational Mathematics, 09/2004 to 07/2006

Appointments

Assistant Professor, September 2019 – present

Department of Chemical and Materials Engineering, University of Alberta

Some highlights:

- *Teaching: MATE 202 (Materials Science II), MATE 345 (Corrosion, Oxidation, and Degradation), MATE 645 (Electrochemical Processes), and CHE 485/694 (Fuel Cells and Their Applications);*
- *Research: the recipient of 24 research grants in total, the lead PI for 19 (\$2.2 M in cash) and co-PI for 6 (\$4.7 M in cash).*
- *Service: organizing committee for multiple conferences (CMSC and NACE), Associate Editor for the Canadian Metallurgical Quarterly.*

Principal Metallurgist, August 2018 – August 2019

Metallurgy Department, Kemetco Research Inc., Richmond, BC

- *Developing and marketing ORP sensor for Gold and Copper mining sites. Sponsors: Barrick Gold Corporation, and Aurubis AG*
- *Lithium Recovery Testing and Boric Acid Purification. Sponsor: Noram Lithium Corp*

Postdoctoral Fellow, May 2015 – July 2018

Materials Engineering, UBC

Advisor Name: Professor Edouard Asselin

As a PDF, I worked on 3 NSERC-funded projects, all as the main contributor (the PI was my advisor at UBC, Professor Asselin):

- *Measuring Potential in a Pressure Oxidation Autoclave.
Sponsor: NSERC CRD with Barrick Gold Corporation*
- *New Materials for Improved Biomass Gasification Boiler Super-Heaters.
Sponsor: NSERC Engage with Nexterra Systems Corp*
- *Underground Corrosion Risk Assessment for Galvanized Steel Power Transmission Towers.
Sponsor: NSERC CRD with BC Hydro*

I was also the instructor for 3 courses: MTRL 263-Fluid mechanics, MTRL 264-Heat transfer, and APSC 279-Engineering Materials Laboratory

Academic Awards

Petro-Canada Young Innovator Award, March 2022

About the award: The Petro-Canada Emerging Innovator Awards recognize, promote, and support outstanding and innovative faculty researchers at the University of Alberta whose academic work benefits the learning environment of their department and whose research has potential to be of significance to society at large.

Title: Corrosion risk analysis of the next generation in situ extraction with captured CO₂.

II. Supervision of Graduate Students and Postdoctoral Fellows

Name	Year Admitted	Year Graduated	Degree	%Supervision/ Joint with	Present Position
<i>Shehzad Liaqat</i>	2023		<i>Ph.D.</i>	100%	
<i>Nima Zaghian</i>	2023		<i>Ph.D.</i>	50% with <i>Y. Zeng</i>	
<i>Ula Suliman</i>	2022		<i>Ph.D.</i>	50% with <i>S. Mohajernia</i>	
<i>Zhe Liu</i>	2022		<i>Ph.D.</i>	50% with <i>Y. Zeng</i>	
<i>Ziting Sun</i>	2022		<i>Ph.D.</i>	50% with <i>N. Maeda</i>	
<i>Haofei Sun</i>	2021		<i>Ph.D.</i>	100%	
<i>Haoxiang Wang</i>	2020		<i>Ph.D.</i>	100%	
<i>Alex Gross</i>	2023		<i>M.Sc</i>	100%	
<i>Emily Seto</i>	2023		<i>M.Sc</i>	100%	
<i>Henry Pedraza</i>	2022	2023	<i>M.Sc</i>	100%	<i>Scientist, Charter Coating Service (2000) Ltd.</i>
<i>Farhan Khalid</i>	2022		<i>M.Sc</i>	50% with <i>H.Zhang</i>	
<i>Idil M. Tuncer</i>	2021	2023	<i>M.Sc</i>	100%	
<i>Christine Vo</i>	2021	2023	<i>M.Sc</i>	50% with <i>W.Chen</i>	
<i>Ezz Ahmed</i>	2020	2022	<i>M.Sc</i>	40% with <i>H.Henein and A.Qureshi</i>	<i>Modelling Engineer, Avalon Construction LTD</i>
<i>Daniela Arango</i>	2020	2021	<i>M.Sc</i>	100%	<i>Physical Scientist, Natural Resources Canada, Devon</i>
<i>Mingzhang Yang</i>	2019	2021	<i>M.Sc</i>	50% with <i>H. Henein</i>	<i>Ph.D. student at U-Waterloo</i>
<i>Hongrui Yue</i>	2023		<i>PDF</i>	100%	
<i>Meifeng Li</i>	2021		<i>PDF</i>	100%	
<i>Yao Yang</i>	2020	2020	<i>PDF</i>	100%	<i>Assistant Professor, Shanghai Jiao Tong University</i>

Students' Achievements

Oral and Poster Presentations (Presenter's names are underlined)

- p1. (Oral) I.M., Tuncer, J. Liu*, Assessing the Feasibility of a 2-Step Method for Leaching Synthetic Scheelite in H₂SO₄ and H₂O₂ Solution, The 34th Canadian Materials Science Conference, June 2023, Winnipeg, Canada*

- p2. (Oral) H. Sun, Y. Zeng, **J. Liu***, Corrosion Assessment of Fe-based Alloys in Brine Water under Supercritical CO₂, The 10th Annual Pipeline Materials Workshop 2023, June 2023, Edmonton, Canada
- p3. (Oral) B. Taylor, H. Sun, Y. Zeng, **J. Liu***, Corrosion of Steels in Supercritical CO₂ Saturated Saline Water With Various Impurities, 10th Annual Pipeline Materials Workshop 2023, June 2023, Edmonton, Canada
- p4. (Oral) E. Seto, H. Wang, **J. Liu***, Influence of Alloying Elements on the Electrochemical Corrosion Behavior of Cantor High Entropy Alloys, AMPP Annual Conference and Expo, March 2023, Denver, CO, USA
- p5. (Oral) B. Taylor, H. Sun, Y. Zeng, **J. Liu***, Corrosion of 2Cr Steel in Supercritical CO₂ Saturated Saline Water With Cl, S and Br Anions, AMPP Annual Conference and Expo, March 2023, Denver, CO, USA
- p6. (Oral) H. Pedraza, H. Wang, X. Han, Y. Zeng, **J. Liu***, Investigating the thermal stability and corrosivity of biocrude oil at FCC feeding temperatures for co-processing applications, AMPP Annual Conference and Expo, March 2023, Denver, CO, USA
- p7. (Oral) H. Wang, A. Gross, and **J. Liu***, Feasibility Evaluations on Bio-oil and Vacuum Gas Oil Emulsions for Co-processing Applications. European Corrosion Congress, August 2022, Berlin, Germany
- p8. (Oral) E. Ahmed, H. Henein, A. Qureshi, **J. Liu***, Development of Aluminum-Based Dissolvable Alloys for Hydraulic Fracturing Applications, TMS 2022 Annual Meeting & Exhibition, February 2022, California, USA
- p9. (Oral) D. Arango, **J. Liu***, Electrochemical Study of Filiform Corrosion, The 60th Conference of Metallurgists, May 2021, Virtual Event, Canada
- p10. (Oral) H. Sun, L. Sun, T. Du, J. Wang, **J. Liu***, Effects of alloying elements on hot corrosion of boiler tube alloys and potential application of ceramic Ytria stabilization Zirconia, The 60th Conference of Metallurgists, May 2021, Virtual Event, Canada
- p11. (Oral) M. Li, C. Zhou, **J. Liu***, FeCoNiCrCu-xAl high-entropy alloy coating with gradient microstructure on 00Cr12 alloy. The 60th Conference of Metallurgists, May 2021, Virtual Event, Canada
- p12. (Oral) M. Yang, R.K Ahmad, A. Omnar, **J. Liu***, Implications of Contact-free Insulation on Mitigating Corrosion under Insulation, The 60th Conference of Metallurgists, May 2021, Virtual Event, Canada
- p13. (Oral) H. Wang, **J. Liu***, The Thermal Stability and Corrosivity of Bio-oil with Methanol Addition, The 60th Conference of Metallurgists, May 2021, Virtual Event, Canada
- p14. (Poster) A. Gross, H. Sun, **J. Liu***, High Temperature Oxidation of High Entropy Alloys, Dean Research Award Presentation, April 2023, Edmonton, Canada
- p15. (Poster) H. Wang, and **J. Liu***, Corrosion Assessment of Structural Alloys in Biomass-Derived Pyrolysis Oil via Electrochemical Approaches, AMPP Annual Conference and Expo, March 2023, Denver, CO, USA
- p16. (Poster) H. Sun, Y. Zeng, **J. Liu***, Corrosion Assessment of Fe-based Alloys in Brine Water under Supercritical CO₂, IPEIA, February 2023, Jasper, Canada
- p17. (Poster) H. Wang, A. Gross, and **J. Liu***, Corrosion Behaviors of Steels in Wood-Derived Pyrolysis Oil with Methanol Addition, NACE International, Northern Area Western Conference, April 2022, Edmonton, Canada

- p18. (Poster) H. Sun, J. Liu*, *Hot Corrosion of Fe and Ni-based Alloys in Waste-to-energy Environment at 850°C*, NACE International, Northern Area Western Conference, April 2022, Edmonton, Canada
- p19. (Poster) D. Arango, J. Liu*. *Localized corrosion of coated metal*, NACE International, Northern Area Western Conference, April 2022, Edmonton, Canada

Students' Awards (Scholarships, Fellowships, and Travel Awards)

- w1. *N. Zaghian, Corrosion Summer Institute and Corrosion Communication Awareness Training Award (CSI-CAT 2023), \$3,000.*
- w2. *F. Khalid, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship 2022-23, \$3,000.*
- w3. *Z. Liu, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship (2022-23), \$3,000.*
- w4. *Z. Liu, University of Alberta Doctoral Recruitment Scholarship (2022), \$10,000*
- w5. *E. Seto, NACE Scholarship for Achievement in Corrosion Engineering, 2022, \$1,000*
- w6. *H. Sun, Doctoral Scholarship for Studying Abroad, China Scholarship Council, 2021-2024, \$79,200.*
- w7. *H. Sun, University of Alberta Doctoral Recruitment Scholarship (2021), \$10,000.*
H. Sun, Student Research Grant of China Institute of University of Alberta (2021-2023)
- w8. *\$2,000.*
- w9. *A. Gross, NACE Scholarship for Achievement in Corrosion Engineering, 2021, \$1,000*
- w10. *H. Wang, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship (2021), \$5,000*
- w11. *H. Wang, Captain Thomas Farrell Greenhalgh Memorial Graduate Scholarship (2020), \$5,000*
- w12. *H. Wang, University of Alberta Doctoral Recruitment Scholarship (2020), \$10,000*

III. Publications

Refereed Journal Publications

(HQP's names are underlined; corresponding authors are noted by *)

- a1. M. Li, H. Henein, C. Zhou, **J. Liu***, "Towards high-entropy alloys with high-temperature corrosion resistance and structural stability", **Journal of Materials Science & Technology** 174 (2024): 133-144.
- a2. H. Pedraza, H. Wang, X. Han, Y. Zeng, **J. Liu***, "Corrosion and aging risk assessment of an injection system for FCC/Bio-oil co-feed", **Biomass and Bioenergy** 175 (2023) 106875.
- a3. E. Ahmed, H. Henein, A. Qureshi, **J. Liu***, The microstructure, mechanical behaviour, and dissolvability of novel Al-Cu-Zn-Mg-based alloys, **Canadian Metallurgical Quarterly** (2023): 1-20.
- a4. H. Sun, L. Sun, X Ren, C. Zhou, J. Li, T. Du, **J. Liu**, J. Wang*. "Outstanding molten calcium–magnesium–aluminosilicate (CMAS) corrosion resistance of directionally solidified Al₂O₃/Y₃Al₅O₁₂ eutectic ceramic at 1500 °C". **Corrosion Science**, 220(2023), 111289.
- a5. H. Sun, H. Wang, Y. Zeng, **J. Liu***, "Corrosion of steels in CCUS-EOR under supercritical conditions: research progress and prospective", **Renewable and Sustainable Energy Reviews: Volume 179**, June 2023, 113292.
- a6. H. Wang, **J. Liu***, "Emulsification and corrosivity study of bio-oil and vacuum gas oil mixtures with a novel surfactant system." **Fuel** 333 (2023): 126460.
- a7. M. Yang, J. B. Wiskel, D. G. Ivey, M. Gaudet, A. Hamilton, **J. Liu**, H. Henein*. "The effect of tempering conditions on carbides in P110 casing steels." **Materials Science and Technology** (2023) 39:9, 1068-1082.
- a8. M. Li, H. Zhang, Y. Zeng, **J. Liu***, "A perspective on investigating transition metal high-entropy alloys for high-temperature applications", **Acta Materialia** (2022): 118313.
- a9. M. Li, H. Zhang, Y. Zeng, **J. Liu***, "Adsorption and dissociation of high-pressure hydrogen on Fe (100) and Fe₂O₃ (001) surfaces: combining DFT calculation and statistical thermodynamics", **Acta Materialia** (2022): 118267.
- a10. D. Arango, **J. Liu***, "Investigation of the initiation and propagation of filiform corrosion on aluminum alloys by electrochemical techniques", **Canadian Metallurgical Quarterly** (2022): 1-13.
- a11. H. Liang, **J. Liu***, "Insights on the corrosion and degradation of MXenes as electrocatalysts for hydrogen evolution reaction", **ChemCatChem** 14 (6), e202101375.
- a12. M. Yang, **J. Liu***, "In-Situ Monitoring of Corrosion under Insulation using Electrochemical and Mass Loss Measurements." **International Journal of Corrosion**, 2022, 6681008.
- a13. H. Wang, A. Gross, **J. Liu***, "Influence of Methanol Addition on Bio-oil Thermal Stability and Corrosivity", **Chemical Engineering Journal** (433), 2022, 133692.
- a14. H. Sun, **J. Liu***, "Hot Corrosion of Corrosion Resistance Alloys in Waste-to-energy Environment at 850°C", **Engineering failure analysis**, (133), 2022, 105964.
- a15. H. Sun, C. Zhou, T. Du, Z. Wu, Q. Xian, L. Sun, **J. Liu**, J. Wang*. "Preparation, Microstructures, and Mechanical Properties of Directionally Solidified Al₂O₃/Lu₃Al₅O₁₂

- Eutectic Ceramics Prepared by Optical Floating Zone Method”. **International Journal of Applied Ceramic Technology**, 2022, 19 (2), 695-702.
- a16. M. Khouzani, X. Li, A. Bogno, Z. Chen, **J. Liu**, H. Henein, A. Qureshi*, “Fabrication of aluminum/stainless steel bimetallic composites through a combination of additive manufacturing and vacuum-assisted melt infiltration casting.” **Journal of Manufacturing Processes**, 69(2021):320-330.
- a17. X. Li, M. Khouzani, A. Bogno, **J. Liu**, H. Henein, Z. Chen, A. Qureshi*, “Investigation of Compressive and Tensile Behavior of Stainless Steel/Dissolvable Aluminum Bimetallic Composites by Finite Element Modeling and Digital Image Correlation.” **Materials**, 14(2021): 1-22.
- a18. S. Gawor, J.B. Wiskel, D.G. Ivey, **J. Liu**, H. Henein*, “Time Dependence of Hydrogen Induced Cracking of X70 Pipeline Steel Under Severe and Mild Sour Service Conditions Using Ultrasonic Analysis” In **International Pipeline Conference**. American Society of Mechanical Engineers, 84461(2021): 1-9.
- a19. X. Han, H. Wang, Y. Zeng, **J. Liu***, “Advancing the application of bio-oils by co-processing with petroleum intermediates: A review”. **Energy Conversion and Management: X**, 10 (2021) 100069:1-10.
- a20. Y. Liu*, Z. Ren, **J. Liu**, R.F. Schaller, E. Asselin, "Electrochemical Investigation and Identification of Titanium Hydrides Formed in Mixed Chloride Sulfuric Acid Solution", **Journal of The Electrochemical Society**, 166(2019), C3096-C3105.
- a21. H. Liang*, **J. Liu**, R.F. Schaller; E. Asselin. "A New Corrosion Mechanism for X100 Pipeline Steel Under Oil-Covered Chloride Droplets", **Corrosion** 74(2018):947-957.
- a22. H. Liang*, **J. Liu**, A. Alfantazi, E. Asselin. "Corrosion behaviour of X100 pipeline steel under a salty droplet covered by simulated diluted bitumen", **Materials Letters** 222(2018): 196-199.
- a23. **J. Liu***, Z. Ren, E. Asselin, "Spontaneous reduction of cupric complex on titanium dioxides in acidic sulfate–chloride media", **Journal of The Electrochemical Society**, 164(2016), H37-H41.
- a24. **J. Liu***, D. Dyson, E. Asselin, "Long-term hot corrosion behavior of boiler tube alloys in molten salts", **Oxidation of Metals** 86(2016): 135–149.
- a25. **J. Liu***, Z. Ren, A. Alfantazi, E. Asselin, "Turning Bulk Titanium into Rutile Nanorods in One Step: Synthesis, Mechanism and Application", **Crystal Growth & Design** 16.3 (2016): 1583–1590.
- a26. **J. Liu***, Z. Jiang, P. Servati, E. Asselin, "Etching Induced Stepped Nanostructure on $Pb(Mg_{(1-x/2)}Mn_{(x/2)}W_{1/2})O_3$ Ceramics", **Journal of the American Ceramic Society** 99(2016): 1125–1128.
- a27. **J. Liu***, A. Alfantazi, E. Asselin, “A New Method to Improve the Corrosion Resistance of Titanium for Hydrometallurgical Applications”, **Applied Surface Science** 332(2015): 480-487.
- a28. **J. Liu***, A. Alfantazi, E. Asselin, “Effects of Temperature and Sulfate on the Pitting Corrosion of Titanium in High-Temperature Chloride Solutions”, **Journal of The Electrochemical Society** 162.4(2015): C189-C196.
- a29. **J. Liu***, A. Alfantazi, E. Asselin, “The Anodic Passivity of Titanium in Mixed Sulfate-Chloride Solutions”, **Journal of The Electrochemical Society** 162.12(2015): E289-E295.

- a30. **J. Liu***, A. Alfantazi, E. Asselin, “High temperature corrosion of Ti under conditions relevant to pressure leaching: mass loss and electrochemistry”, *Corrosion* 71(2015): 352-366.
- a31. **J. Liu***, A. Alfantazi, E. Asselin, “Influence of cupric, ferric, and chloride on the corrosion of titanium in sulfuric acid solutions up to 85°C”, *Corrosion* 70(2014): 29-37.
- a32. **J. Liu***, A. Alfantazi, E. Asselin, “Characterization of Anodized Ti for Hydrometallurgical Applications – Evidence for the Reduction of Cupric on Ti Dioxide”, *Applied Surface Science* 283 (2013): 705–714.
- a33. **J. Liu***, Z. Li, Z. Cao, “Computational Simulation of Corrosion Perforation in the Oil-Tank Bottom with Cellular Automata”, *Advanced Materials Research* 399(2012): 1755–1762.

Peer-reviewed Conference Proceedings

- a34. E. Seto, M. Li, **J. Liu***, “Predicting Corrosion Severity of Pipeline Steels in Supercritical CO₂ Environments Using Supervised Machine Learning”, AMPP Annual Conference and Expo, March 2024, New Orleans, LA, USA: 12 pages; **accepted**.
- a35. A. Gross, H. Sun, **J. Liu***, “Corrosion of Cr-Alloyed Steels in Supercritical CO₂ - Saturated Brine Water at 50 °C and 10 MPa”, AMPP Annual Conference and Expo, March 2024, New Orleans, LA, USA: 10 pages; **accepted**.
- a36. H. Sun, C. He, **J. Liu***, “Oxidation and Hot Corrosion Behavior of Alloy 800 and Inconel 625: Evaluation and Pre-Oxidation Treatment”, AMPP Annual Conference and Expo, March 2024, New Orleans, LA, USA: 11 pages; **accepted**.
- a37. E. Seto, H. Wang, **J. Liu***, “Influence of Alloying Elements on the Electrochemical Corrosion Behavior of Cantor High Entropy Alloys”, AMPP Annual Conference and Expo, March 2023, Denver, CO, USA: 12 pages.
- a38. B. Taylor, H. Sun, Y. Zeng, **J. Liu***, “Corrosion of 2Cr Steel in Supercritical CO₂ Saturated Saline Water With Cl, S and Br Anions”, AMPP Annual Conference and Expo, March 2023, Denver, CO, USA: 11 pages.
- a39. H. Pedraza, H. Wang, X. Han, Y. Zeng, **J. Liu***, “Investigating the thermal stability and corrosivity of biocrude oil at FCC feeding temperatures for co-processing applications”, AMPP Annual Conference and Expo, March 2023, Denver, CO, USA: 12 pages.
- a40. E. Ahmed, H. Henein, A. Qureshi, **J. Liu***, “Development of Aluminum-Based Dissolvable Alloys for Hydraulic Fracturing Applications”, TMS 2022 Annual Meeting & Exhibition, February 2022, California, USA: pp 1101–1114.
- a41. D. Arango, **J. Liu***, “Electrochemical Study of Filiform Corrosion”, The 60th Conference of Metallurgists, May 2021, Virtual Event, Canada: 10 pages.
- a42. H. Sun, L. Sun, T. Du, J. Wang, **J. Liu***, “Effects of alloying elements on hot corrosion of boiler tube alloys and potential application of ceramic Yttria stabilization Zirconia”, The 60th Conference of Metallurgists, May 2021, Virtual Event, Canada: 10 pages.
- a43. M. Li, C. Zhou, **J. Liu***, “FeCoNiCrCu-xAl high-entropy alloy coating with gradient microstructure on 00Cr12 alloy”, The 60th Conference of Metallurgists, May 2021, Virtual Event, Canada: 10 pages.

- a44. *M. Yang, R.K Ahmad, A. Omnar, J. Liu**, "Implications of Contact-free Insulation on Mitigating Corrosion under Insulation", The 60th Conference of Metallurgists, May 2021, Virtual Event, Canada: 10 pages.
- a45. *J. Liu**, Z. Ren, M. Tomlinson, and E. Asselin, "Effects of blinding agents on the adsorption behavior of carbon concentrates: an electrochemistry study", COM 2017, 56th Annual Conference of Metallurgists, Canada: 10 pages.
- a46. Z. Ren, T. Zhang, *J. Liu*, M. Tomlinson, and E. Asselin, " Characterization of Carbonaceous Matters Associated with Preg-robbing Ores", COM 2017, 56th Annual Conference of Metallurgists, Canada: 10 pages.
- a47. *J. Liu**, A. Alfantazi, E. Asselin, "Combined influence of metal and chloride ions on the corrosion of titanium at elevated temperatures", **Keynote lecture** for Conference of Materials Science & Technology 2015, Columbus, Ohio USA: 11 pages.
- a48. *J. Liu**, A. Alfantazi, E. Asselin, "Corrosion evaluation of anodized and unanodized Ti for application in pressure leaching", COM 2013, MetSoc of CIM Montreal, Canada: 10 pages.
- a49. *J. Liu**, A. Alfantazi, E. Asselin, "Uniform Corrosion of Ti Under Medium Temperature Chalcopyrite Concentrate Leaching", COM 2012, MetSoc of CIM Niagara, Canada: 10 pages.

Patents

- a50. E. Asselin, H. Zebardast, *J. Liu*. "Apparatus, systems and methods for in situ measurement of an oxidation/reduction potential and pH of a solution." U.S. Patent 11,467,124, issued October 11, 2022.

Presentations

- *J. Liu*, "Comprehensive Investigation of Oxide Evolution on FeCrNiCoCu High Entropy Alloy." **Keynote Talk** for COM 2022, 61st Annual Conference of Metallurgists, Montréal, QC, Canada.
- *J. Liu*, "Influence of Methanol Addition on Bio-oil Thermal Stability and Corrosivity." **Invited Talk** for the 26th Canadian Symposium on Catalysis (CSC 2022), Vancouver, Canada.
- *J. Liu*, "Basic Corrosion Theory and Environmental Corrosion Cells." **Invited lecture** for AUT Winter School, 2022, Virtual.
- *J. Liu*, "Measuring Potential in a Pressure Oxidation Autoclave: The development of a robust in-situ oxidation/reduction potential sensor." **Invited Talk** for McMaster Automotive Resource Centre (MARC), 2020, Hamilton, ON, Canada.
- *J. Liu*, A. Alfantazi, E. Asselin, "The pitting corrosion of titanium in aggressive environments." **Invited Talk** for Conference of NACE 2016, Vancouver, BC Canada.
- *J. Liu*, E. Asselin, "Evaluation and Improvement of the Corrosion Resistance of Ti for the Chemical Process Industry." **Invited Talk** for Conference of NACE 2016, Vancouver, BC Canada.
- *J. Liu*, A. Alfantazi, E. Asselin, "Influence of cupric, ferric and chloride on the corrosion of Ti in sulfuric acid solutions below 100°C." February 2013, NACE Northern Area Western Conference, Victoria, BC, Canada.

V. Service

Conferences/Symposia Organized

- Chair, Organizing Committee, CMSC 2024, The 35th Canadian Materials Science Conference, Edmonton, Alberta, Canada, June 2024.
- Secretary, Organizing Committee, CMSC 2023, The 34th Canadian Materials Science Conference, Winnipeg, Manitoba, Canada, June 27-30, 2023.
- Poster Session Chair, Organizing Committee, NACE Northern Area Western Conference 2022, Edmonton, Alberta, Canada, April 11-14, 2022.
- Symposium Chair and Short Course Organizer, Corrosion in Energy Sectors, The 60th Conference of Metallurgists, COM 2021, virtual event, August 17-19, 2021.

Journal Editorship

- Associate Editor, *Canadian Metallurgical Quarterly*, 2022-present.
- Editorial board, *Resources Chemicals and Materials*, 2023-present.

Professional Affiliations

- Member of Association of Professional Engineers and Geoscientists of Alberta (APEGA)
- Program Committee member, The International Pressure Equipment Integrity Association (IPEIA), 2023-2025.
- Research Program Committee, AMPP (Association for Materials Protection and Performance, previously National Association of Corrosion Engineers), 2023-2025.
- Executive Committee Member, AMPP Edmonton Chapter 2021-present
- Executive Committee Member, ASME Northern Alberta Section (NAS), 2023-present

Services to the Department and University

- Engineering Undergraduate Student/Staff Committee (USSC), 2021-2024
- Member, Department's Faculty Searching Committee, June 2022
- Member, CME Safety Committee, September 2022-present
- Member, Review Committee for Alberta Innovates Graduate Student Scholarship, 2022-2023
- Member, Department's Faculty Searching Committee, March 2023-present
- Member, CME Advisory Board Selection Committee, June 2023-present