Xiaoyuan Lou

Associate Professor
Nuclear Engineering
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EDUCATION

Georgia Institute of Technology, Atlanta, GA, USA
PhD, Materials Science and Engineering, 12/2010

The Ohio State University, Columbus, OH, USA
M.S., Materials Science and Engineering, 8/2005

Nanjing University, Nanjing, Jiangsu, China
B.S., Physics, 6/2002

PROFESSIONAL EXPERIENCE

Purdue University, West Lafayette, IN, USA **08/2022 ~ present**
Associate Professor

Manufacturing and materials technologies for fission and fusion energy

- Metal additive manufacturing
- Material degradation in high-temperature energy systems
- Structural alloys and composites

Auburn University, Auburn, AL, USA **2018 ~ 2022**
Associate Professor

My group mainly focuses on material degradation behavior in nuclear reactor environments, high-temperature material properties, novel corrosion-resistant alloys and composites, advanced manufacturing methods for nuclear applications.

Research areas and interests:

1) Environmentally assisted cracking and irradiation assisted stress corrosion cracking in high-temperature water
2) Creep and creep-fatigue
3) Metal additive manufacturing and additive alloy/composite development for nuclear systems
4) Corrosion and radiation resistant stainless steels
5) High-throughput alloy discovery and testing
6) Small-scale mechanical and corrosion testing

General Electric Global Research Center, Niskayuna, NY, USA **2011 ~ 2017**
Lead Material Scientist

My work involved understanding environmental degradation and fracture failure issues of various alloys used in high temperature and harsh environments of modern light water reactor, aircraft engine, energy storage and oil & gas exploration. I also served as technical lead for nuclear additive manufacturing.

Research areas:

1) Environment-assisted cracking of structural alloys in light water reactors
2) Additive manufacturing technology and additive alloy development
3) High temperature corrosion/oxidation/cracking of nickel based superalloys in turbine blade and disk
4) Degradation of sodium-metal halide molten salt battery
5) Development of environment resistant coating for high temperature turbine blade and disk
6) Water chemistry control and electrocatalytic mitigation technology for light water reactors

Georgia Institute of Technology, Atlanta, GA, USA **2006 ~ 2010**
Graduate Research Assistant

Research areas:

1) Stress corrosion cracking mechanism of carbon steel in fuel-grade ethanol environment
2) Cathodic reaction study and cathode material development for solid oxide fuel cells

The Ohio State University, Columbus, OH, USA **2003 ~ 2005**
Graduate Research Associate

Research areas:
The plasticity and deformation mechanism of magnesium sheet alloys

HONORS AND AWARDS

- Outstanding Faculty Teaching Award, Auburn University Samuel Ginn College of Engineering (2/2021)
- Best Paper Award, Journal of Nuclear Materials, 10/2020
- Top Cited Paper, Journal of Nuclear Materials, 2020-2021
- GE Above & Beyond Bronze Award for empower and inspire each other, 12/2016
- GE Above & Beyond Silver Award for outstanding leadership as principal investigator to develop additive manufacturing technology for nuclear application, 3/2015
- GE Above & Beyond Bronze Award for significant technical contribution to high temperature corrosion advanced technology program, 12/2014
- BP Scholarship, NACE, 03/2010
- 1st Place, Harvey Herro Award, NACE Corrosion 2010 Conference and EXPO, 03/2010
- Top Topics Research Front in Materials Science, Thomson Reuters
- Most Cited Paper in International Journal of Plasticity, 2009-2012

GRANTS (PI and Co-PI)

Purdue University

- **Novelis Global Research Center, PI, $50,000 (2022/9-2023/2)**

Auburn University

- **US Nuclear Regulatory Commission**, A high-throughput approach to establish the regulatory basis for qualifying laser additive-manufactured stainless steel for nuclear applications, **PI, $500,000 (2021-2024)**
- **US Department of Energy**, Technical Basis of Microstructure Criteria and Accelerated Testing for Qualifying Additively-manufactured 316H Stainless Steel for High-temperature Cyclic Service, **PI, $800,000 (2021-2024)**
- **Novelis Global Research Center,** High-throughput Al alloy development - Phase II, **PI, $90,000 (2021-2022)**
- **US Department of Energy**, HIP Cladding and Joining to Manufacture Large Dissimilar Metal Structures for Modular and GEN IV Reactors, **PI, $1,000,000 (10/2020-9/2023)**
- **US Department of Energy**, Enhancing Mechanical Testing Capabilities to Support High-throughput Nuclear Material Development, **PI, $210,000 (10/2020-9/2021)**
- **US DOE Nuclear Science User Facilities RTE**, The origin of exceptional IASCC resistance of the additively-manufactured stainless steel after hot isostatic pressing, **PI, $50,000 (2/2020-12/2020)**
- **Novelis Global Research Center,** high-throughput Aluminum alloy development, **PI, $90,000 (01/2020-12/2020)**
- **Auburn University Intramural Grants Program**, 1D and 2D carbon structured copper nanocomposites by laser based additive manufacturing, **PI, $20,000, (4/2019-4/2021)**
- **National Institute of Standards and Technology**, NIST Center for in-situ Metrology and Process Science for Advanced Manufacturing, **co-PI, $250,000 (total project funding of $3,087,090) (10/2018-09/2021)**
- **US DOE Idaho National Laboratory LDRD**, Mitigating irradiation assisted stress corrosion cracking by rapid alloy design, **co-PI, $360,000 (total project funding of $1,500,000) (10/2018-09/2021)**
- **US DOE Nuclear Science User Facilities RTE**, Heavy ion irradiation on SCC resistant austenitic stainless steel by laser additive manufacturing, **PI, $50,000 (6/2018-02/2019)**

General Electric Global Research (external grants)

- **Electric Power Research Institute**, Effect of chemical transients on stainless steel and nickel based alloys in BWR environments, **PI, $300,000 (08/2017-08/2019)**
- **Electric Power Research Institute**, Stress corrosion cracking of NitroMaxx alloy in BWR and PWR environments, **PI, $70,000 (11/2016-05/2017)**
- **US Department of Energy NEET**, Environmental Cracking and Irradiation Resistant Stainless Steel by Additive Manufacturing, **PI, $850,000 (10/2015-09/2017)**
- **US Department of Energy CRADA**, Evaluation of Additive Manufacturing for Stainless Steel Components, **PI (GE side), $80,000 (09/2015-07/2016)**
- **Electric Power Research Institute**-BWRVIP, Hydrogen and Memory Effect on Low Alloy Steel in Chloride Containing Environment, **PI, $240,000 (02/2015-12/2016)**
- **Electric Power Research Institute**-BWRVIP, Effects of ppb Level Chloride on Stress Corrosion Cracking Susceptibility of Pressure Vessel Steel in High Temperature Water, **PI, $500,000 (01/2011-08/2015)**
- **Electric Power Research Institute**-PSCR, Role of Creep and Creep Crack Growth in Stress Corrosion Cracking (SCC) of Austenitic Stainless Steel Materials, **Co-PI, $300,000 (09/2011-05/2014)**
- **Electric Power Research Institute**-PSCR, Rapid Fracture Phenomenon in High Temperature Water, **Co-PI, $200,000 (02/2011-12/2013)**

I also served as PI and Co-PI in a number of GE internal R&D programs to support GE's product lines for GE Power & Water, GE-Hitachi Nuclear, GE Aviation, GE Energy Storage, GE Transportation, GE Oil & Gas, etc. The details were not listed due to business confidential reason

TEACHING

Auburn University (2018-2022):

Couse Level	Course Name
Undergraduate	MATL3100 - Engineering Materials-Metals
Undergraduate	MATL3101 - Metallography Laboratory
Undergraduate/Graduate	MATL5500/6500 - Numerical Simulation of Materials Processing
Undergraduate/Graduate	MATL5600/6600 - Corrosion
Graduate	MATL7050 - Deformation and Failure of Engineering Materials

Teaching Award:

Outstanding Faculty Teaching Award, Auburn University Samuel Ginn College of Engineering (2/2021, elected by undergraduate student body)

PROFESSIONAL SERVICE

- Editorial board member of Scientific Reports-Nature
- Editorial board member of ASTM materials performance and characterization
- Committee members of Nuclear Science User Facilities (NSUF) Users Organization
- Member of ASME Division 5 Task Group on AM components
- Symposium organizers for *Additive Manufacturing for Energy Applications* (2020-2022) and *Environmental Degradation of Additively Manufactured Alloys* (2019-2022) in TMS
- JOM guest editor and technical advisor
- Panelist for NSF CMMI manufacturing machines and equipment
- Panelist for NSF advanced manufacturing
- Proposal reviewer for multiple programs (NEUP, NEET, NSUF, SBIR, RTE) in US Department of Energy

- Committee members of Corrosion & Environmental Effects Committee, Nuclear Materials Committee, and Additive Manufacturing Bridge Committee in TMS
- Paper reviewer for Journal of Nuclear Materials, Acta Materialia, Additive Manufacturing, Journal of the Electrochemical Society, Corrosion Science, JOM, Materials Characterization, Materials Letters, International Journal of Pressure Vessels and Piping, Electrochimica Acta, Journal of ASTM International, Corrosion, Corrosion Review, Fuel, Engineering Fracture Mechanics, Journal of Iron and Steel Research International, NACE Conference, TMS Conference
- 2/2020, chair, “Environmental Degradation of Additively Manufactured Alloys”, TMS 2020, San Diego, CA
- 8/2015, chair, “BWR SCC and Water Chemistry” session, 17th International Conference on Environmental Degradation of Materials in Nuclear Power Systems, Ottawa, Ontario, Canada, August 9-13, 2015
- 3/2015, chair, “Environment Assisted Cracking” session, NACE Corrosion 2015 Conference and EXPO, Dallas, Texas, USA
- 3/2014, vice chair, “Environment Assisted Cracking” session, NACE Corrosion 2014 Conference and EXPO, San Antonio, Texas, USA, March 9-13, 2014
- 8/2013, chair, “RPV SCC and Embrittlement” session, 16th International Conference on Environmental Degradation of Materials in Nuclear Power Systems, Asheville, NC, USA

PATENTS

- "Additive manufacturing method and materials” (US20180193916)
- "Grain boundary engineering for additive manufacturing” (US20180085830)
- "Article with improved resistance to sulfate corrosion and method for protecting article from sulfate corrosion" (US20170183508)

PUBLICATIONS

Journal Papers:

- J. Yang, L. Hawkins, L. He, S. Mahmood, M. Song, K. Schulze, X. Lou, “Intragranular irradiation-assisted stress corrosion cracking (IASCC) of 316L stainless steel made by laser direct energy deposition additive manufacturing: delta ferrite-dislocation channel interaction”, *Journal of Nuclear Materials*, 2022 (under review)
- J. Snitzer, X. Lou, “Sensitization of 316L stainless steel made by laser powder bed fusion”, *Corrosion*, 2022 (under review)
- H. Yin, B. Wei, A. Shmatok, J. Yang, F. Salek, L. Beckingham, B. Prorok, J. Wang, X. Lou, “On the nano-scale oxide dispersion via in-situ atmospheric oxidation during laser powder bed fusion”, *Additive Manufacturing*, 2022 (under review)
- Y. Wang, Y. Liang, A. Bansode, X. Lou, X. Zhang, B.S. Beckingham, M.L. Auad, “3D Printed Poly(acrylic acid-vinylimidazole) Ionic Polymer Metal Composite Actuators”, *Macromolecular Materials and Engineering*, 2200440, 2022
- H. Yin, Y. Zhang, L. Crilly, J. Yang, B.C. Prorok, R.L. Jackson, X. Lou, "Carbon nanotubes (CNTs) reinforced 316L stainless steel composites made by laser powder bed fusion: microstructure and wear response", *Wear*, 204281, 2022
- P. Deng, M. Song, J. Yang, Q. Pan, S. McAllister, L. Li, B.C. Prorok, X. Lou, "On the thermal coarsening and transformation of nanoscale oxide inclusions in 316L stainless steel manufactured by laser powder bed fusion and its influence on impact toughness", *Materials Science and Engineering A*, 142690, 2022
- J. Yang, L. Hawkins, M. Song, L. He, M. Bachhav, Q. Pan, L. Shao, D. Schwen, X. Lou, "Compositionally graded specimen made by laser additive manufacturing as a high-throughput method to study radiation damages and irradiation-assisted stress corrosion cracking", *Journal of Nuclear Materials*, 153493, 2022
- J. Yang, X. Liu, M. Song, L. He, S. Bankson, M. Hamilton, X. Lou, "Sensitization, desensitization and carbide evolution of Alloy 800H made by laser powder bed fusion ", *Additive Manufacturing*, 102547, 2022
- Q. Pan, M. Kapoor, S. Mileski, J. Carsley, X. Lou, " Technical basis for using laser direct energy deposition as a high-throughput method for combinatorial Al-Mn alloy development", *Materials & Design*, 212, 110290, 2021

- J. Yang, M. Song, L.R. Hawkins, X. Liu, L. He, X. Lou, "Effects of heat treatment on corrosion fatigue and stress corrosion crack growth of additive-manufactured Alloy 800H in high-temperature water", *Corrosion Science*, 191, 109739, 2021

- H. Yin, M. Song, P. Deng, L. Li, B.C. Prorok, X. Lou, "Thermal stability and microstructural evolution of additively manufactured 316L stainless steel by laser powder bed fusion at 500-800C", *Additive Manufacturing*, 41, 101981, 2021

- L. Jiang, M. Song, L. Yang, J. Yang, D. Du, X. Lou, Y. Chen, "A comparison study of void swelling in additively manufactured and cold-worked 316L stainless steels under ion irradiation", *Journal of Nuclear Materials*, 551, 152946, 2021

- C. Kim, H. Yin, A. Shmatok, B.C. Prorok, X. Lou, K.H. Matlack, "Ultrasonic nondestructive evaluation of laser powder bed fusion 316L stainless steel", *Additive Manufacturing*, 38, 101800, 2021

- X. Lou, P.L. Andresen, J. Yang, R. Pathania, T. Lian, R.G. Carter, "Mechanical and metallurgical considerations on the effects of ppb-level chloride on stress corrosion cracking of low alloy steels in high-temperature water", *Corrosion Science*, 179, 109136, 2021

- P. Deng, H. Yin, M. Song, D. Li, Y. Zheng, B.C. Prorok, X. Lou, "On the Thermal Stability of Dislocation Cellular Structures in Additively Manufactured Austenitic Stainless Steels: Roles of Heavy Element Segregation and Stacking Fault Energy", *JOM*, 72(12), 4232-4243, 2020

- P. Deng, M. Karadge, R.B. Rebak, V.K. Gupta, B.C. Prorok, X. Lou, "The origin and formation of oxygen inclusions in austenitic stainless steels manufactured by laser powder bed fusion", *Additive Manufacturing*, 35, 101334, 2020

- X. Lou and D. Gandy, "Advanced Manufacturing for Nuclear Energy", *JOM*, 71 (8), 2834-2836, 2019

- M. Song, M. Wang, X. Lou, R.B. Rebak, G.S. Was, "Radiation damage and irradiation-assisted stress corrosion cracking of additively manufactured 316L stainless steels", *Journal of Nuclear Materials*, 513, pp 33-44, 2019

- X. Lou, P.L. Andresen, R.B. Rebak, "Oxide inclusion in the laser additive manufactured stainless steel and its effects on impact toughness and stress corrosion cracking behavior", *Journal of Nuclear Materials*, 499, pp 182-190, 2018

- X. Lou, M. Song, P.W. Emigh, M.A. Othon, P.L. Andresen, "On the stress corrosion crack growth behaviour in high temperature water of 316L stainless steel made by laser powder bed fusion additive manufacturing", *Corrosion Science*, 128, pp 140-153, 2017

- X. Lou, M.A. Othon, R.B. Rebak, "Corrosion fatigue crack growth of laser additively-manufactured 316L stainless steel in high temperature water", *Corrosion Science*, 127, pp 120-130, 2017

- X. Lou, R. Pathania, P.L. Andresen, "Effects of chloride transients on stress corrosion crack in pressure vessel low alloy steels in high temperature water", *Corrosion Science*, 126, pp 305-316, 2017

- X. Lou and R.B. Rebak, "Exposure test evaluates coatings for seawater-cooled heat exchangers", *Materials Performance*, 2, pp 12-19, 2015

- L. Yang, S. Wang, X. Lou and M. Liu, "Electrical conductivity and electrochemical performance of cobalt-doped BaZr0.1Ce0.7Y0.2O3-delta cathode", *International Journal of Hydrogen Energy*, 36 (3), pp 2266-2270, 2011

- X. Lou, P.M. Singh, "Cathodic activities of oxygen and hydrogen on carbon steel in simulated fuel-grade ethanol", *Electrochimica Acta*, 56 (5), pp 2312-2320, 2011

- X. Lou, P.M. Singh, "Phase angle analysis for stress corrosion cracking of carbon steel in fuel-grade ethanol: experiments and simulation", *Electrochimica Acta*, 56 (4), pp 1835-1847, 2011

- M. Li, X.Y. Lou, J.H. Kim, R.H. Wagoner, "An efficient constitutive model for room-temperature, low-rate plasticity of annealed Mg AZ31B sheet", *International Journal of Plasticity*, 26 (6), pp. 820-858, 2010

- X. Lou, P.M. Singh, "Role of water, acetic acid and chloride on corrosion and pitting behaviour of carbon steel in fuel-grade ethanol", *Corrosion Science*, 52 (7), pp 2303-2315, 2010

- X. Lou, D. Yang, P.M. Singh, "Film breakdown and dissolution during stress corrosion cracking of carbon steel in bioethanol", *Journal of The Electrochemical Society*, 157 (2), pp. C86-C94, 2010

- X. Lou, D. Yang, P.M. Singh, "Effect of ethanol chemistry on stress corrosion cracking of carbon steel in fuel-grade ethanol", *Corrosion*, 65 (12), pp. 785-797, 2009

- X. Lou, Z. Liu, S. Wang, M. Liu, Y. Xiu and C.P. Wong, "Controlling the morphology and uniformity of a catalyst-infiltrated cathode for SOFCs by tuning wetting property", *Journal of Power Sources*, 195 (2), pp. 419-424, 2010

- X. Lou, S. Wang, Z. Liu, L. Yang, M. Liu, "Improving La0.6Sr0.4Co0.2Fe0.8O3-delta cathode performance by infiltration of a Sm0.5Sr0.5CoO3-delta coating", *Solid State Ionics*, 180 (23-25), pp. 1285-1289, 2009

- X.Y. Lou, M. Li, R.K. Boger, S.R. Agnew, R.H. Wagoner, "Hardening evolution of AZ31B Mg Sheet", *International Journal of Plasticity*, 23 (1): 44-86, 2007

- R.H. Wagoner, X.Y. Lou, M. Li, S.R. Agnew, "Forming behavior of magnesium sheet", *Journal of Materials Processing Technology*, 177: 483-485, 2006

- X.J. Zhang, X.Z. Fan, J. Yan, F. Xu, X.Y. Lou, J.L. He, Z.L. Wang, H.T. Wang, N.B. Ming, "Properties of leaky and degenerate modes in a prism-film coupler with waveguide structure", *Journal of Applied Physics*, 94 (11): 7025-7030, 2003

Conference Proceeding Papers:

- Q. Pan, M. Kapoor, S. Mileski, J. Carsley, X. Lou, Phase transformation and microstructure evolution of AA3104 alloy made by laser additive manufacturing, Light Metals 2022

- A.J. Summers, H. Yin, R.D. Fischer, B.C. Prorok, X. Lou, Q.P. He, Improving Linear Separability of Pulse Wave Laser Additive Manufacturing Classifiers with Rational Feature Engineering and Selection, 2022 American Control Conference (ACC), 2592-2597

- X. Lou, R. Pathania, R. Carter, "SCC Growth Behavior of Stainless Steels and Nickel-Base Alloys during Chemical Transients in BWR NWC Environments", Proceedings of NACE Corrosion 2021 Conference (NACE 2021)

- P. Deng, M. Karadge, R.B. Rebak, V.K. Gupta, B.C. Prorok, X. Lou, Evolution and Impact of Oxygen Inclusions in 316L Stainless Steel Manufactured by Laser Powder Bed Fusion, Proceedings of the 2020 Annual Conference on Experimental and Applied Mechanics, 75-80, 2021

- P. Deng, M. Karadge, R.B. Rebak, V.K. Gupta, B.C. Prorok, X. Lou, The Role of Extraneous Oxygen in the Formation of Oxide Inclusions in 316L Stainless Steel Manufactured by Laser Powder Bed Fusion, Proceedings of the 2020 Annual Conference on Experimental and Applied Mechanics, 75-80, 2021

- Q. Pan, M. Kapoor, S. Mileski, J. Carsley, X. Lou, High-throughput aluminum alloy discovery using laser additive manufacturing, Light Metals 2021: 50th Anniversary Edition, 140-146

- R.B. Rebak, X. Lou, Using Additive Manufacturing for Making Light Water Reactor Components, Proceeding of ASME Pressure Vessels and Piping Conference, 58981, 2019

- Xiaoyuan Lou, Teresa E. Perez, Raul B. Rebak, "Corrosion evaluation of nuclear reactor internal component made by additive manufacturing ", Proceeding of LatinCorr 2018

- Xiaoyuan Lou and Raj Pathania, “Effect of chloride transients on crack growth rates in low alloy steels in BWR environments”, Proceedings of 18th International Conference on Environmental Degradation of Materials in Nuclear Power Systems

- Xiaoyuan Lou, Peter L. Andresen, Tiangan Lian, Raj Pathania, "Effect of ppb levels of chloride on the stress corrosion cracking of pressure vessel steel", Proceedings of NACE Corrosion 2016 Conference (NACE 2016)

- Xiaoyuan Lou, Peter L. Andresen, Tiangan Lian, Raj Pathania, "Effect of ppb levels of chloride on the stress corrosion cracking of pressure vessel steel", Proceedings of 17th International Conference on Environmental Degradation of Materials in Nuclear Power Systems

- Xiaoyuan Lou, Evan Dolley, Martin Morra, Fran Bolger, Myles Connor, Ron Horn, "Stress corrosion cracking of the 316L stainless steel by additive manufacturing in high temperature water", Proceedings of 17th International Conference on Environmental Degradation of Materials in Nuclear Power Systems

- Xiaoyuan Lou and Raul Rebak, "Corrosion and flow accelerated corrosion of candidate coatings for seawater cooled heat exchanger", Proceedings of NACE Corrosion 2014 Conference (NACE 2014)

- Xiaoyuan Lou, Peter L. Andresen, and Tiangan Lian, "Rapid fracture phenomenon of metals in high temperature water", Proceedings of NACE Corrosion 2014 Conference (NACE 2014)

- Evan J. Dolley, Peter L. Andresen, Martin M. Morra, Xiaoyuan Lou, and Raul B. Rebak, "Cracking resistance of chromium rich alloys in high temperature water", Proceedings of NACE Corrosion 2014 Conference (NACE 2014)

- Xiaoyuan Lou, Peter L. Andresen, and Tiangan Lian, "Understanding rapid fracture phenomenon in high temperature water", Proceedings of 16th International Conference on Environmental Degradation of Materials in Nuclear Power Systems

- Xiaoyuan Lou and Peter L. Andresen, "Investigation of rapid fracture phenomenon in BWR water condition", Proceedings of NACE Corrosion 2012 Conference (NACE 2012)

- Xiaoyuan Lou and Preet M. Singh, "Corrosion and pitting behavior of carbon steel in fuel-grade ethanol under variations in ethanol chemistry", Proceedings of NACE Corrosion 2011 Conference (NACE 2011)

- Di Yang, Xiaoyuan Lou, Preet M. Singh, Richard W. Neu, "Threshold strain and cyclic stress effects on stress corrosion cracking of duplex stainless steel 2205 in chloride environment and white liquor", Proceedings of NACE Corrosion 2010 Conference (NACE 2010)

- Xiaoyuan Lou, Di Yang, Lindsey R. Goodman, Preet M. Singh, "Understanding the stress corrosion cracking of X-65 pipeline steel in fuel-grade ethanol", Proceedings of NACE Corrosion 2010 Conference (NACE 2010)

- Lindsey R. Goodman, Xiaoyuan Lou, Preet M. Singh, "Investigation of the stress corrosion cracking of carbon steel in fuel grade ethanol environments", Proceedings of the 2010 TMS Annual Meeting

- Xiaoyuan Lou, Lindsey R. Goodman, and Preet M. Singh, "Pitting corrosion of carbon steel in ethanol environment", Proceedings of NACE Corrosion 2009 Conference (NACE 2009)

- Harry Abernathy, Zhe Cheng, Xiaoyuan Lou, Meilin Liu, "Probing and mapping SOFC anode reactions using in situ Raman spectroscopy", Proceedings of the American Chemical Society 233rd National Meeting (ACS Spring 2007)

- Min Li, Xiaoyuan Lou, Sean R. Agnew, Robert H. Wagoner, "Constitutive modeling of slip, twinning, and untwinning in HCP Alloys", Proceedings of the 14th International Symposium on Plasticity (Plasticity 2008)

- Robert H. Wagoner, Xiaoyuan Lou, Min Li, Sean R. Agnew, "Cyclic and monotonic plasticity of magnesium sheet", Proceedings of the 12th International Symposium on Plasticity (Plasticity 2006)

- Xiaoyuan Lou, Min Li, Richard K. Boger, Sean R. Agnew, Robert H. Wagoner, "Deformation of O-temper AZ31B Mg sheet under monotonic and cyclic loading", Magnesium Technology 2006, Proceedings of Magnesium Technology Symposium at the 2006 TMS Annual Meeting

Published Technical Reports:

- Xiaoyuan Lou, "BWRVIP-324, Effect of Chemical Transients on Stainless Steels and Nickel Based Alloys in BWR Environments: Progress Report for 2019", Electric Power Research Institute Technical Report, 2019

- Raul Rebak, Xiaoyuan Lou, "Environmental cracking and irradiation resistant stainless steels by additive manufacturing", Final Project Report for NE0008428, US Department of Energy, 2018

- Xiaoyuan Lou, "Stress corrosion cracking of NitroMaxx alloy in BWR and PWR environments", Electric Power Research Institute Technical Report, 2017

- Xiaoyuan Lou, "Stress corrosion crack growth rate and chloride memory effect of pressure vessel steel during and after chloride transient in boiling water reactor environments", Electric Power Research Institute BWRVIP Technical Report, 2017

- Xiaoyuan Lou and Peter L. Andresen, "Effects of low level chloride on stress corrosion cracking of low alloy pressure vessel steels in BWR environments", Electric Power Research Institute BWRVIP Technical Report, 2015

- Xiaoyuan Lou and Peter L. Andresen, "Role of creep and creep crack growth in stress corrosion cracking (SCC) of austenitic stainless steel materials", Electric Power Research Institute PSCR Technical Report, 2014

- Xiaoyuan Lou and Peter L. Andresen, "Rapid fracture phenomenon in high temperature water", Electric Power Research Institute PSCR Technical Report, 2013

TALKS AND SEMINARS

Conference Talks:

- J. Le, V. Samarov, D. Gandy, R. Rebak, X. Lou, " Ferritic SA508 Low Alloy Steel to Austenitic 316L Stainless Steel by Powder Metallurgy Hot Isostatic Pressing", HIP 2022, September 11-14, 2022. Columbus, OH, USA

- **(Invited Talk)** X. Lou, J. Yang, L. Hawkins, L. He, D. Schwen "A nanomechanical approach to reveal the origins of superior intergranular cracking resistance in irradiated additively-manufactured stainless steel", TMS 2022 Annual Meeting, Feb. 27–Mar. 3, 2022, Anaheim, CA, USA

- X. Lou, H. Yin, J. Le "Compositionally graded joint of 316L stainless steel to A508 low alloy steel by additive manufacturing", TMS 2022 Annual Meeting, Feb. 27–Mar. 3, 2022, Anaheim, CA, USA

- J. Yang, L. Hawkins, M. Song, L. He, Z. Jiao, Y. Zhang, D. Schwen, X. Lou "Compositionally graded specimen: a high-throughput approach for nuclear material development", TMS 2022 Annual Meeting, Feb. 27–Mar. 3, 2022, Anaheim, CA, USA

- H. Yin, J. Yang, B. Wei, M. Bachhav, J. Wang, X. Lou "Oxide dispersion strengthened stainless steel by reactive additive manufacturing", TMS 2022 Annual Meeting, Feb. 27–Mar. 3, 2022, Anaheim, CA, USA

- Q. Pan, M. Kapoor, S. Mileski, J. Carsley, X. Lou "Phase transformation and microstructure evolution of Al-Mn alloy made by laser additive manufacturing", TMS 2022 Annual Meeting, Feb. 27–Mar. 3, 2022, Anaheim, CA, USA

- J. Yang, L. Boring, L. He, M. Song, Z. Jiao, Y. Zhang, D. Schwen, L. Shao, X. Lou, Mitigating irradiated assisted stress corrosion cracking with minor refractory element modification – a high-throughput approach using compositionally-graded specimen, Materials in Nuclear Energy Systems (MiNES), Nov. 8-11, 2021, Pittsburgh, PA

- **(Invited Talk)** X. Lou "Sensitization of Alloy 800H produced by laser powder bed fusion", The ASTM International Conference on Additive Manufacturing (ASTM ICAM 2021), Nov. 1-5, 2021, Virtual

- L. He, L. Hawkins, J. Yang, X. Liu, M. Song, X. Lou, Y. Zhang, L. Shao, D. Schwen, Advanced Characterization of Additively Manufactured 316L Stainless Steel for Nuclear Applications, M&M 2021, August 4, 2021, Virtual

- **(Keynote Talk)** J. Yang (student), X. Lou, Compositionally graded specimen as a high-throughput alloy screening method for evaluating irradiation-assisted stress corrosion cracking, 2021 Annual Meeting of International Cooperative Group on Environmentally-Assisted Cracking, May 17-20, 2021, Virtual

- X. Lou, R. Pathania, R. Carter, P.L. Andresen, "Effect of Chemical Transients on SCC of Stainless Steels and Nickel Base Alloys in BWR Normal Water Chemistry", NACE Corrosion 2021 Conference and EXPO, April 19-30, 2021, Virtual

- **(Invited Talk)** X. Lou, J. Yang, X. Liu, M. Song, L. He, "Sensitization/Desensitization And Carbide Evolution Of Alloy 800H Made By Laser Powder Bed Fusion", NACE Corrosion 2021 Conference and EXPO, April 19-30, 2021, Virtual

- J. Yang, X. Liu, M. Song, L. He, X. Lou, "Sensitization and Stress Corrosion Cracking of Alloy 800H by Laser Powder Bed Fusion", TMS 2021 Annual Meeting, March 15-18 2021, virtual

- X. Liu, J. Yang, M. Song, X. Lou, Y. Zhang, L. He, D. Schwen, "Proton Irradiation Induced Microstructural Evolution in Compositionally Graded Type 316L Stainless Steel", TMS 2021 Annual Meeting, March 15-18 2021, virtual

- Y. Zhang, M. Song, X. Liu, L. He, D. Schwen, X. Lou, "Improving Irradiation Resistance of Alloys by Controlling Defect Diffusion: A Modeling Perspective", TMS 2021 Annual Meeting, March 15-18 2021, virtual

- M. Song, J. Yang, X. Liu, X. Lou, Y. Zhang, L. He, D. Schwen, "A Superb Void Swelling Resistant Type 316L Stainless Steel Developed by Additive Manufacturing Enabled High Throughput Microalloying", TMS 2021 Annual Meeting, March 15-18 2021, virtual

- X. Lou, J. Yang, X. Liu, M. Song, L. He, Y. Zhang, D. Schwen, "Compositionally Graded Bulk Specimen: A High-throughput Approach for Nuclear Alloy Development and Qualification", TMS 2021 Annual Meeting, March 15-18 2021, virtual

– J. Yang, X. Liu, M. Song, L. He, Y. Zhang, X. Lou, "Irradiation-assisted Stress Corrosion Cracking (IASCC) of Austenitic Stainless Steels with Oversized Solutes in High temperature Water", TMS 2021 Annual Meeting, March 15-18 2021, virtual

– Q. Pan, M. Kapoor, S. Mileski, J. Carsley, X. Lou, "High-throughput Aluminum Alloy Discovery Using Laser Additive Manufacturing", TMS 2021 Annual Meeting, March 15-18 2021, virtual

– **(Invited Talk)** V. Gupta, A. Hoffman, X. Lou, R. Rebak, "From Flight to Fission: Additive Manufacturing Advances at GE in Nuclear Energy", TMS 2021 Annual Meeting, March 15-18 2021, virtual

– **(Invited JNM Best Paper Talk)** Miao Song, Mi Wang, Xiaoyuan Lou, Raul Rebak, Gary Was, "Radiation damage and irradiation-assisted stress corrosion cracking of additively manufactured 316L stainless steels", NuMat 2020, October 26-29 2020, virtual

– Yongfeng Zhang**,** Anus Manzoor , Dilpuneet Aidhy, Miao Song , Xiaoyuan Lou, lingfeng He, "The Effect of Minor Additives on Radiation Induced Segregation in Austenitic Steel Alloys", TMS 2020 Annual Meeting, San Diego, CA, USA, February 23-17, 2020

– **(Invited Talk)** Michael Mcmurtrey, Xiaoyuan Lou, Gary Was, "SCC and IASCC of printed 316L for use in the Nuclear Industry", TMS 2020 Annual Meeting, San Diego, CA, USA, February 23-17, 2020

– Jingfan Yang, Miao Song, Raul Rebak, Xiaoyuan Lou, "Stress Corrosion Cracking Growth Behavior of Additively Manufactured Alloy 800H in High Temperature Water", TMS 2020 Annual Meeting, San Diego, CA, USA, February 23-17, 2020

– Jingfan Yang, Xiang Liu, Miao Song, Lingfeng He, Xiaoyuan Lou, "Sensitization of Alloy 800H made by Laser Powder Bed fusion", TMS 2020 Annual Meeting, San Diego, CA, USA, February 23-17, 2020

– Miao Song, Jiang Li, Youxing Chen, Xiaoyuan Lou, "Comparison of Voids Swelling in Additively Manufactured and Cold-worked 316L SSs After Self-ion Irradiations at Elevated Temperatures", TMS 2020 Annual Meeting, San Diego, CA, USA, February 23-17, 2020

– Xiaoyuan Lou, Raj Pathania, Paul Emigh, Martin Morra, Effect of Chemical Transients on SCC of Stainless Steels and Nickel Base Alloys in BWR Environment, EPRI BWRVIP Mitigation Committee Meeting, June 4-7, 2019

– **(Invited Talk)** Miao Song, Xiaoyuan Lou, "Heavy ion irradiation of 3D Printed 316L Stainless Steels", MS&T 2019, Portland, OR, USA, September 29-October 3, 2019

– **(Invited Talk)** Xiaoyuan Lou, Mi Wang, Miao Song, Gary Was, Rebak Raul, "Environmental Cracking of Laser-fused Alloys under Nonirradiated and Irradiated Conditions", TMS 2019 Annual Meeting, San Antonio, TX, USA, March 10-14, 2019

– **(Invited Talk)** Xiaoyuan Lou, Jingfan Yang, Miao Song, Mi Wang, Gary Was, Raul Rebak, "Alloy 800/800H by Laser Powder Bed Fusion", TMS 2019 Annual Meeting, San Antonio, TX, USA, March 10-14, 2019

– Xiaoyuan Lou, Teresa E. Perez, Raul B. Rebak, "Corrosion evaluation of nuclear reactor internal component made by additive manufacturing ", LatinCorr 2018, Buenos Aaires, Argentina, Oct. 23-25, 2018

– Raul B. Rebak, Xiaoyuan Lou, "Additive manufacturing components for light water reactors ", EUROCORR 2018, ICE Krakow, Poland, Sep. 9-13 2018

– Xiaoyuan Lou, Peter Andresen, Raul Rebak, "On the stress corrosion crack growth of laser additive manufactured 316L stainless steel", NACE Corrosion 2018 Conference and EXPO, Phoenix, Arizona, USA, April 15-19, 2018

– Xiaoyuan Lou, Raul Rebak, Myles Connor, Francis Bolger, David Webber, Gary Was, Miao Song, Mi Wang, Frederick List, "Additive stainless steel for nuclear: from material aspects to quality part", TMS 2018 Annual Meeting, Phoenix, AZ, USA, March 11-15, 2018

– Xiaoyuan Lou and Raul Rebak, "Microstructural effects on environmental assisted crack growth behaviors of austenitic stainless steel by laser powder bed fusion", TMS 2018 Annual Meeting, Phoenix, AZ, USA, March 11-15, 2018

– Miao Song, Mi Wang, Gary Was, Xiaoyuan Lou, Raul Rebak, "Effects of proton irradiation on microstructure in additively manufactured 316L stainless steel made by laser powder bed fusion", TMS 2018 Annual Meeting, Phoenix, AZ, USA, March 11-15, 2018

- Mi Wang, Miao Song, Xiaoyuan Lou, Raul Rebak, Gary Was, "IASCC behavior of additively manufactured 316L stainless steel in light water reactor environments", TMS 2018 Annual Meeting, Phoenix, AZ, USA, March 11-15, 2018

- Xiaoyuan Lou and Raj Pathania, "Effect of chloride transients on crack growth rates in low alloy steels in BWR environments", 18th International Conference on Environmental Degradation of Materials in Nuclear Power Systems, Portland, OR, USA, August 13-17, 2017

- **(Invited Talk)** Xiaoyuan Lou, Paul Emigh, Michelle Othon, “Environmental assisted cracking of the additively manufactured austenitic stainless steel in high temperature water”, TMS 2017 Annual Meeting, San Diego, CA, USA, Feb, 2017

- Xiaoyuan Lou, Fred List, Gary Was, Myles Connor, “Environmental cracking and irradiation resistant stainless steel by additive manufacturing”, 2016 DOE Advanced Manufacturing Method Workshop, Germantown, MD, USA, Oct. 17-18, 2016

- **(Invited Talk)** Xiaoyuan Lou, Fran Bolger, Myles Connor, “3D Metal Printing for Nuclear”, 2016 DOE Workshop: Pathway to SMR Commercialization, North Bethesda, MD, USA, 2016

- Xiaoyuan Lou, Paul Emigh, Peter Andresen, "SCC memory effect on pressure vessel steel after chloride transient in high temperature water”, 2016 BWRVIP Mitigation Committee Meeting, San Antonio, USA, June, 2016

- Xiaoyuan Lou, Paul Emigh, Michelle Othon, Martin Morra, Peter Andresen, "Stress corrosion cracking of the additively manufactured stainless steel by laser powder bed process”, 2016 Meeting of International Cooperative Group on Environmental Assisted Cracking of Water Reactor Materials, Qindao, China, May 15-20, 2016

- Xiaoyuan Lou, Peter L. Andresen, Tiangan Lian, Raj Pathania, "Effect of ppb levels of chloride on the stress corrosion cracking of pressure vessel steel", NACE Corrosion 2016 Conference and EXPO, Vancouver, BC, Canada, March 6-10, 2016

- Xiaoyuan Lou, Evan Dolley, Martin Morra, Fran Bolger, Myles Connor, Ronald Horn, David Webber, "Stress corrosion cracking of the additively manufactured 316L stainless Steel in high temperature water", Materials Science & Technology 2015, Columbus, OH, USA, October 4-8, 2015

- Xiaoyuan Lou, Yiteng Jin, Erica Sampson, Shizhong Wang, Martin Morra, "Measurement of high temperature pitting corrosion under mineral dust using electrochemical impedance spectroscopy", Materials Science & Technology 2015, Columbus, OH, USA, October 4-8, 2015

- Xiaoyuan Lou, Peter L. Andresen, Tiangan Lian, Raj Pathania, "Effect of ppb levels of chloride on the stress corrosion cracking of pressure vessel steel", 17th International Conference on Environmental Degradation of Materials in Nuclear Power Systems, Ottawa, Ontario, Canada, August 9-13, 2015

- Xiaoyuan Lou, Evan Dolley, Martin Morra, Fran Bolger, Myles Connor, Ron Horn, "Stress corrosion cracking of the 316L stainless steel by additive manufacturing in high temperature water", 17th International Conference on Environmental Degradation of Materials in Nuclear Power Systems, Ottawa, Ontario, Canada, August 9-13, 2015

- Xiaoyuan Lou, Peter L. Andresen, Tiangan Lian, Raj Pathenia, " Stress Corrosion Cracking Pressure Vessel Steel in ppb Levels of Chloride: Heat-to-Heat Comparison", The 2015 Annual Meeting of the International Cooperative Group on Environmentally-Assisted Cracking of Water Reactor Materials (ICG-EAC), Ann Arbor, MI, USA, May 17-22, 2015

- Xiaoyuan Lou, Peter L. Andresen and Peter Chou, "Creep and creep crack growth of austenitic stainless steel in high temperature air", The 2014 Annual Meeting of the International Cooperative Group on Environmentally-Assisted Cracking of Water Reactor Materials (ICG-EAC), Prague, Czech Republic, April 6-11, 2014

- Xiaoyuan Lou, Peter L. Andresen, Tiangan Lian, Raj Pathenia, "Updates on the effect of ppb levels of chloride on the stress corrosion cracking of pressure vessel steel", The 2014 Annual Meeting of the International Cooperative Group on Environmentally-Assisted Cracking of Water Reactor Materials (ICG-EAC), Prague, Czech Republic, April 6-11, 2014

- Xiaoyuan Lou and Raul Rebak, "Corrosion and flow accelerated corrosion of candidate coatings for seawater cooled heat exchanger", NACE Corrosion 2014 Conference and EXPO, San Antonio, Texas, USA, March 9-13, 2014

– Xiaoyuan Lou, Peter L. Andresen, and Tiangan Lian, "Rapid fracture phenomenon of metals in high temperature water", NACE Corrosion 2014 Conference and EXPO, San Antonio, Texas, USA, March 9-13, 2014

– Evan J. Dolley, Peter L. Andresen, Martin M. Morra, Xiaoyuan Lou, and Raul B. Rebak, "Cracking resistance of chromium rich alloys in high temperature water", NACE Corrosion 2014 Conference and EXPO, San Antonio, Texas, USA, March 9-13, 2014

– Xiaoyuan Lou, Peter L. Andresen, and Tiangan Lian, "Understanding rapid fracture phenomenon in high temperature water", 16th International Conference on Environmental Degradation of Materials in Nuclear Power Systems, Asheville, NC, USA, August 11-15, 2013

– Xiaoyuan Lou, Peter L. Andresen and Tiangan Lian, "Recent studies on the effect of ppb levels of chloride on the stress corrosion cracking of pressure vessel steel", The 2013 Annual Meeting of the International Cooperative Group on Environmentally-Assisted Cracking of Water Reactor Materials (ICG-EAC), Karuizawa, Nagano, Japan, May 9-24, 2013

– Xiaoyuan Lou, Peter L. Andresen and Tiangan Lian, "Effect of low concentration chloride on SCC of low alloy steel pressure vessel", The 2012 Annual Meeting of the International Cooperative Group on Environmentally-Assisted Cracking of Water Reactor Materials (ICG-EAC), Quebec City, QC, Canada, May 13-18, 2012

– Xiaoyuan Lou, Peter L. Andresen and Tiangan Lian, "Investigation of rapid fracture phenomenon in high temperature water", The 2012 Annual Meeting of the International Cooperative Group on Environmentally-Assisted Cracking of Water Reactor Materials (ICG-EAC), Quebec City, QC, Canada, May 13-18, 2012

– Xiaoyuan Lou and Peter L. Andresen, "Investigation of rapid fracture phenomenon in BWR water condition", NACE Corrosion 2012 Conference and EXPO, Salt Lake City, Utah, USA, March 11-15, 2012

– Xiaoyuan Lou and Preet M. Singh, "Corrosion and pitting behavior of carbon steel in fuel-grade ethanol under variations in ethanol chemistry", NACE Corrosion 2011 Conference and EXPO, Houston, Texas, USA, March 13-17, 2011

– Xiaoyuan Lou and Preet M. Singh, "Cathodic activity of carbon steel in simulated fuel-grade ethanol and its impact on hydrogen embrittlement", 218th The Electrochemical Society Meeting (Fall), Las Vegas, Nevada, USA, October 10-15, 2010

– **(Invited Talk)** Preet M. Singh, Xiaoyuan Lou, Lindsey R. Goodman, "Corrosion and stress corrosion cracking of carbon steel in fuel-grade ethanol", 218th The Electrochemical Society Meeting (Fall), Las Vegas, Nevada, USA, October 10-15, 2010

– Xiaoyuan Lou and Preet M. Singh, "Local passivation breakdown of carbon steel in bio-ethanol during stress corrosion cracking" (Invited for the special issue of Electrochimica Acta), 8th Spring Meeting of the International Society of Electrochemistry, Columbus, Ohio, USA, May 2-5, 2010

– Xiaxi Li, Matthew Lynch, Mingfei Liu, Xiaoyuan Lou, Meilin Liu, "Study of the morphological influence on SOFC cathode kinetics", 217th The Electrochemical Society Meeting (Spring), Vancouver, Canada, April 25-30, 2010

– Di Yang, Xiaoyuan Lou, Preet M. Singh, Richard W. Neu, "Threshold strain and cyclic stress effects on stress corrosion cracking of duplex stainless steel 2205 in chloride environment and white liquor", NACE Corrosion 2010 Conference and EXPO, San Antonio, Texas, USA, March 14-18, 2010

– Xiaoyuan Lou, Preet Singh, "Film breakdown in bio-ethanol during stress corrosion cracking", NACE Corrosion 2010 Conference and EXPO, San Antonio, Texas, USA, March 14-18, 2010

– Xiaoyuan Lou, Di Yang, Lindsey Goodman, Preet Singh, "Understand the stress corrosion cracking of X-65 pipeline steel in fuel-grade ethanol", NACE Corrosion 2010 Conference and EXPO, San Antonio, Texas, USA, March 14-18, 2010

– Xiaoyuan Lou and Preet M. Singh, "Passivation kinetics of carbon steel in simulated fuel-Grade ethanol", 215th The Electrochemical Society Meeting (Spring), San Francisco, California, USA, May 24-29, 2009

– Xiaoyuan Lou, Lindsey R. Goodman, and Preet M. Singh, "Pitting corrosion of carbon steel in ethanol environment", NACE Corrosion 2009 Conference and Expo, Atlanta, GA, USA, March 22-26, 2009

– **(Invited Talk)** Harry Abernathy, Zhe Cheng, Xiaoyuan Lou, Meilin Liu, "Probing and mapping SOFC anode reactions using in situ Raman spectroscopy", The American Chemical Society 233rd National Meeting & Exposition (ACS Spring 2007), Chicago, IL USA, March 25-29, 2007

– Min Li, Xiaoyuan Lou, Robert H. Wagoner, "Constitutive modeling of plasticity incorporating slip, twinning, and untwinning", The 14th International Symposium on Plasticity (Plasticity 2008), Kailua/Kona, Hawaii, USA, January 3-8, 2008

– Robert H. Wagoner, Xiaoyuan Lou, Min Li, Sean R. Agnew, "Forming behavior of magnesium sheet", The 11th International Conference on Metal Forming, University of Birmingham, UK, September 11-13, 2006

– **(Invited Keynote Lecture)** Robert H. Wagoner, Xiaoyuan Lou, Min Li, Sean R. Agnew, "Cyclic and monotonic plasticity of magnesium sheet", The 12th International Symposium on Plasticity (Plasticity 2006), Helifax, Nova Scotia, Canada, July 17-22, 2006

– Xiaoyuan Lou, Min Li, Richard K. Boger, Sean R. Agnew, Robert H. Wagoner, "Hardening evolution of AZ31B-O Mg sheet", 2006 TMS Annual Meeting, San Antonio, Texas, USA, March 12-16, 2006

– Min Li, Xiaoyuan Lou, Frederic Barlat, Robert H. Wagoner, "Constitutive behavior of AZ31B Mg sheet: development and implementation of constitutive model", 2005 TMS Annual Meeting, San Francisco, California, USA, February 13-17, 2005

– Xiaoyuan Lou, Richard K. Boger, Frederic Barlat, Robert H. Wagoner, "Constitutive behavior of AZ31B Mg sheet: measurement and analysis of mechanical properties", 2005 TMS Annual Meeting, San Francisco, California, USA, February 13-17, 2005

Seminars and short courses:

– Xiaoyuan Lou, Degradation of Additively Manufactured Alloys in Nuclear Environments, Graduate Seminar at University of Wisconsin at Madison, 4/21/2022

– Xiaoyuan Lou, Metal Additive Manufacturing for Nuclear, Graduate Seminar at University of Michigan, 2/11/2022

– Xiaoyuan Lou, Metal Additive Manufacturing for Nuclear - Qualification, Materials, and Beyond, Graduate Seminar at Purdue University, 1//26/2022

– Xiaoyuan Lou, Metal Additive Manufacturing for Nuclear - Qualification, Materials, and Beyond, Graduate Seminar at University of Pittsburgh, 1/7/2022

– Xiaoyuan Lou, Recent progress to understand the irradiation-assisted stress corrosion cracking of stainless steels made by laser powder bed fusion, Graduate Seminar at The University of Alabama, 10/22/2021

– Xiaoyuan Lou, Perspectives on qualifying laser additively manufactured stainless steel for nuclear structural use, Graduate Seminar at The University of Alabama at Birmingham, 11/4/2020

– Xiaoyuan Lou, Laser additive manufacturing as a high-throughput tool for alloy development, Invited talk in Novelis Global R&D Center, August 11, 2019

– Xiaoyuan Lou, Metal Additive Manufacturing at Auburn University, Invited talk in Northrop Grumman, May 16, 2018

– Xiaoyuan Lou, Environmental Cracking Resistant Stainless Steel by Additive Manufacturing, Invited talk in Carpenter Technology R&D Center, May 15, 2018

– Xiaoyuan Lou, "Environmental Cracking and Irradiation Resistant Stainless Steel by Laser Additive Manufacturing", Auburn University Graduate Seminar, Auburn, AL, USA, October 30, 2017

– Xiaoyuan Lou, "Environmental Cracking and Irradiation Resistant Stainless Steel by Laser Additive Manufacturing", Auburn University Graduate Seminar, Auburn, AL, USA, October 30, 2017

– Xiaoyuan Lou, "Stress corrosion cracking of structural materials in modern light water reactor", Florida International University Graduate Seminar, Miami, FL, USA, October 10, 2014

– Xiaoyuan Lou, "R&D activity on nuclear material degradation at GE Global Research", Invited Talk in Suzhou Nuclear Power Research Institute, Suzhou, China, December 12, 2012