Kathy Lu, Ph.D., Professor

Director of Artificial Intelligence-Guided Materials Thrust in College of Engineering
Director of the Graduate Assistance in Areas of National Need Program at Virginia Tech
Director of Materials for Challenging Conditions Lab
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Education

Ph.D., Materials Science and Engineering, Ohio State University, Columbus, OH, 2000
M.S., Materials Science and Engineering, Ohio State University, Columbus, OH, 1999
B.S., Ceramics, Tianjin University, Tianjin, China, 1990

Professional Experience

2015 – *Professor*, Department of Materials Science and Engineering
Virginia Polytechnic Institute and State University, Blacksburg, VA

2021 *Fulbright Distinguished Chair Visiting Professor*, Department of Physics
Chalmers University of Technology, Gothenburg, Sweden

2010 – 2015 *Associate Professor*, Department of Materials Science and Engineering
Virginia Polytechnic Institute and State University, Blacksburg, VA

2012 – 2013 *Humboldt Visiting Professor*, School of Materials Science
Technischen Universität Darmstadt, Darmstadt, Germany

2004 – 2010 *Assistant Professor*, Department of Materials Science and Engineering
Virginia Polytechnic Institute and State University, Blacksburg, VA

2001 – 2004 *Materials Development and Processing Scientist*
Energizer Battery Company, Westlake, OH

2000 – 2001 *Director of Materials Processing*, Center for Innovative Sintered Products
Pennsylvania State University, University Park, PA

Awards and Honors

1. 2023 Editor of Materials Letters
2. 2022-2027 Board of Trustees of the Science Museum of Virginia
3. 2022 Minerals, Metals & Materials Society (TMS) Fellow
4. 2022 Editorial Review Board Member of International Materials Reviews
5. 2021-2022 Board of Directors of Sigma Xi, The Scientific Research Honor Society
6. 2020 VEBELO Scientist Award
7. 2020 ELATES (Executive Leadership in Academic Technology, Engineering and Science) Fellow
8. 2020 Fulbright Distinguished Chair Award
9. 2017 Fellow of the American Ceramic Society
10. 2015 Virginia Tech Alumni Award for Research Excellence
11. 2015- Associate Editor of Journal of the American Ceramic Society

12. 2018-2022 JOM Journal Advisor and Guest Editor
13. 2014- Editorial Review Board of Frontiers in Energy Research, section Fuel Cells
14. 2014-2016 Editorial Board Member of Annals of Material Science & Engineering
15. 2012 College of Engineering Faculty Fellow Award, Virginia Tech
16. 2011 Friedrich Wilhelm Bessel Research Award, Alexander von Humboldt Foundation
17. 2008 Karl Schwartzwalder-Professional Achievement in Ceramic Engineering Award, American Ceramic Society
18. 2005 Ralph E. Powe Junior Faculty Enhancement Award, Oak Ridge Associated Universities
19. 2001 P/M Metallography Competition Award, APMI International

Academic Interests:

- Polymer derived ceramics and composites
- Materials degradation in harsh environments
- Machine learning and simulation in materials processing
- Data-driven materials processing and characterization
- Materials synthesis, processing, characterization, and fundamental studies
- Composites, hybrids, functional and structural materials, porous materials
- Ultrahigh surface area materials
- Coatings for harsh environments and long term uses

Research Contracts and Awards (total $10.8M, $7.5M own share)

1. AI-Guided Materials Thrust, College of Engineering, $125,000, 8/16/2022-6/30/2023, 100% responsibility.
2. AI-Guided Materials Thrust, College of Engineering, $176,000, 8/16/2021-6/30/2022, 100% responsibility.
3. Request of a Top Loading High Temperature Furnace for Education and Research in Polymer Derived Ultrahigh Temperature Ceramic Nanocomposites, Office of Naval Research, $224,479, 12/16/2021-12/15/2022, 100% responsibility.
4. Fundamental Understanding and Synthesis of Polymer Derived High Temperature Ceramic Nanocomposites, Air Force Office of Scientific Research, $499,462, 12/20/2021-6/19/2025, 100% responsibility.
5. Accelerated Experiments to Investigate Chloride-Induced Stress Corrosion Cracking, Institute for Critical Technology and Applied Science of Virginia Tech, $10,000, 10/28/2020-6/30/2021, lead PI: Juliana Pacheco Duarte.
6. Supplement Proposal to: GAANN--An Interdisciplinary Program in Multifunctional Material Synthesis and Advanced Manufacturing (MM-SAM), Department of Education, $50,370, 10/1/2020-9/30/2021, 100% responsibility.
7. Effect of Particle Surface Characteristics on Additive Manufacturability, Virginia Tech COE (in collaboration with CCAM), ~$33,000, 7/1/2020-6/30/2021, 100% responsibility.
8. ISS: Synthesis of Electrically Conductive Ti_3C_2-SiOC and TiC-SiC High Temperature Composites Under Microgravity and Normal Gravity Conditions, National Science Foundation, $399,997, 10/1/2020-9/30/2024, 100% responsibility.
9. New Coatings for Nuclear Fuel Waste Canister Storage and Transport, Department of Energy, $800,000, 10/1/2020-9/30/2023, lead PI, 65% responsibility.

10. Data Science Supplement for Lithographic Patterning of Co-Dispersed Nanomaterials for Device Applications, National Science Foundation, $60,427, 6/1/2020-5/30/2021, 100% responsibility.
11. Faculty Writing Group, VT Provost Office, $2000, 8/10/2020-5/15/2021, 100% responsibility.
12. Summer Undergraduate Research Experience--Creating High Performance SiOC Materials Using Mars's Abundant Natural Resources, Virginia Space Grant Consortium, $10,080, 5/15/2020-12/31/2020, 100% responsibility.
13. Materials Under Extreme Conditions, Institute for Critical Technology and Applied Science of Virginia Tech, $10,000, 10/25/2019-6/30/2020, 100% responsibility.
14. Faculty Writing Group, VT Provost Office, $2,000, 8/10/2019-5/15/2020, 100% responsibility.
15. Supplement for Collaborative Research: Integrated Design of Ultrahigh Surface Area Conductive Materials, National Science Foundation, $48,939, 12/1/2019-12/31/2020, 100% responsibility.
16. Additive Manufacturing of Load and Energy Absorbing Materials through an Integrated Experimental and Modelling Approach, National Science Foundation, $604,229, 5/1/2019-4/31/2022, lead PI with two Co-PIs, 40% responsibility.
17. Request for REU Supplement: Study of Polymer Derived SiOC Ceramics, National Science Foundation, $8,000, 6/1/2019-5/31/2020, 100% responsibility.
18. Request for REU Supplement: Lithographic Patterning of Co-Dispersed Nanomaterials for Device Applications, National Science Foundation, $8,000, 6/1/2019-4/30/2020, 100% responsibility.
19. An Interdisciplinary Program in Multifunctional Material Synthesis and Advanced Manufacturing (MM-SAM), Department of Education, $746,250, excluding $227,068 cost share, 10/1/2018-9/30/2022, lead PI, 28% responsibility.
20. C-SiOC-SiC Coated Particle Fuels for Advanced Nuclear Reactors, Department of Energy, $400,000 (including $62,400 subcontract), 10/1/2018-9/30/2021, 100% responsibility.
21. Oxidation Study of High Temperature Gas-Cooled Reactor TRISO Fuels at Accidental Conditions, Department of Energy, $800,000 (including $153,000 subcontract), 10/1/2018-9/30/2022, 100% responsibility.
22. From Chemistry to Multifunctional Materials -- A Collaboration between Virginia Tech and Virginia State University, Institute for Critical Technology and Applied Science of Virginia Tech, $10,000, 10/6/2017-6/30/2018, 100% responsibility.
23. Request for REU Supplement: Study of Ultrahigh Surface Area and Conductive SiOCs, National Science Foundation, $16,000, 5/15/2017-5/14/2018, 100% responsibility.
24. Request for REU Supplement: Nanoscale Sintering Understanding, National Science Foundation, $16,000, 5/1/2017-4/30/2018, 100% responsibility.
25. Hybrid Material Co-Dispersion and Lithographic Patterning for Nano-scale Device Applications, National Science Foundation, $302,150, 06/01/2017-05/31/2020, lead-PI, 50% responsibility.
26. Hot Isostatic Press for Advanced Manufacturing and Materials Development, Office of Naval Research, $895,000, 1/1/2017-12/31/2017, Co-PI, 2% responsibility.

27. Collaborative Research: Experiment and Modeling Integrated Design of Ultrahigh Surface Area and Conductive SiOCs, National Science Foundation, $300,611, 7/1/2016-6/30/2019, 100% responsibility.
28. Recycling Additive Manufacturing Powders, Commonwealth Center for Advanced Manufacturing, $20,000, 01/15/2016-04/30/2016, 100% responsibility.
29. MRI: Acquisition of an X-ray Photoelectron Spectrometer for the Development of Materials and Catalysts for Next Generation Energy Solutions, National Science Foundation, $525,000, 9/1/15-8/31/18, 10% responsibility.
30. Request for REU Supplement: Enhancing Undergraduate Research through Nanoscale Sintering Understanding, National Science Foundation, $10,000, 5/16/2016-5/15/2017, 100% responsibility.
31. Request for REU Supplement: Nanoscale Sintering Understanding, National Science Foundation, $10,000, 5/10/2015-5/09/2016, 100% responsibility.
32. Nanoscale Sintering Understanding, National Science Foundation, $300,682, 5/1/2015-4/30/2018, 100% responsibility.
33. Characterization of Additive Manufacturing Powders, Commonwealth Center for Advanced Manufacturing, $15,000, 12/3/2014-5/1/2015, 100% responsibility.
34. SiC-ODS Alloy Gradient Nanocomposites as Novel Cladding Materials, Department of Energy, $799,998 (with $160,000 subcontract), 10/1/2014-9/30/2017, 100% responsibility.
35. New Solid Oxide Fuel Cell Interconnect Coatings, Office of Naval Research, $360,543, 5/15/2014-5/14/2017, 100% responsibility.
36. GRDS: Nanoparticle-Based Superstructure Construction, National Science Foundation, $39,211, 8/20/2012-8/19/2013, 100% responsibility.
37. Understanding and Development of a Novel Glass Seal System for Solid Oxide Fuel Cells, Institute for Critical Technology and Applied Science of Virginia Tech, $36,469, 01/01/1012-12/31/2012, 100% responsibility.
38. Material Degradation in Severe High Temperature Environments of Solid Oxide Fuel/Electrolyzer Cells, Office of Naval Research, $388,091, 11/1/2010-10/31/2013, 100% responsibility.
39. Request for REU Supplement: Template-Assisted Nanoparticle Processing, National Science Foundation, $6,000, 11/1/2010-10/31/2012, 100% responsibility.
40. REU Supplement: Multi-Scale Study of Nanoparticle Sintering, National Science Foundation, $12,000, 11/1/2010-10/31/2012, 100% responsibility.
41. Development of High Quality Green Bodies for Sintering into Transparent Ceramics, Global Strategies Group (ONR), $31,698, 4/15/2010-8/15/2010, 100% responsibility.
42. Multi-Scale Study of Nanoparticle Sintering, National Science Foundation, $257,034, 07/01/2010-06/30/2013, 100% responsibility.
43. REU Supplement: Gellation in Nanoparticle/Clay Suspensions: Mechanisms and Applications, National Science Foundation, $6,500, 11/15/2009-07/30/2010, 50% responsibility.
44. REU Supplement: Template-Assisted Nanoparticle Processing, National Science Foundation, $6,000, 11/1/2009-06/30/2010, 100% responsibility.
45. REU Supplement: Template-Assisted Nanoparticle Processing, National Science Foundation, $6,000, 11/15/2008-06/30/2009, 100% responsibility.

46. REU Supplement: Gellation in Nanoparticle/Clay Suspensions: Mechanisms and Applications, $9,750, 11/15/2008-07/30/2009, 100% responsibility.
47. Nanopatterning and Quantitative Characterization of Nanostructured Materials, Institute for Critical Technology and Applied Science of Virginia Tech, $99,648, 7/1/2009-6/30/2011, 70% responsibility.
48. Template-Assisted Nanoparticle Processing, National Science Foundation, $287,526, 07/01/2008-06/30/2011, 100% responsibility.
49. Gellation in Nanoparticle/Clay Suspensions: Mechanisms and Applications, National Science Foundation, Co-PI, $300,000, 08/15/2008-06/30/2011, 50% responsibility.
50. Collaborative Proposal for a Multi-Physics/Multi-Scale Modeling Capability of Degradation Phenomena in Solid Oxide Fuel Cell (SOFC) Components", Institute for Critical Technology and Applied Science of Virginia Tech, Co-PI, $69,146, 1/2008-12/2008, 25% responsibility.
51. Bone Healing Grafts Fabricated by Nanoscale Assembly of Biological Building Blocks, Institute for Critical Technology and Applied Science of Virginia Tech, Co-PI, $105,000, 1/1/08-9/30/09, 10% responsibility.
52. ACS PRF Supplement for Underrepresented Minority Research, Petroleum Research Fund, $5000, 05/01/2006-09/30/2006, 100% responsibility.
53. Thin Film Coating and Sintering, Applied Materials, $17,000, 2007, 100% responsibility.
54. Travel Fund to "2007 John H. Barrett Memorial Lectures Series: Multi-scale Modeling and Simulation in Materials Science," University of Tennessee, $500, April 2007, 100% responsibility.
55. REU Supplement GOALI: Nanodesign and Efficient Processing of Boron Carbide Nanocomposites, National Science Foundation, $12,000, 09/01/2006-08/31/2007, 100% responsibility.
56. GOALI: Nanodesign and Efficient Processing of Boron Carbide Nanocomposites, National Science Foundation, $90,000, 09/01/2006-08/31/2007, 100% responsibility.
57. Multilayer Assembly of Nanoparticles Using Carbon Nanotube as Backbone Phase, Petroleum Research Fund, American Chemical Society, $35,000, 09/01/2006-08/31/2008, 100% responsibility.
58. Gradient Meshed and Toughened SOEC Composite Seal with Self-Healing Capabilities, Department of Energy, $315,331, excluding $81,194 cost sharing, 06/01/2006-03/12/2009, 70% responsibility.
59. Digital Manufacturing of Gradient Meshed SOFC Sealing Composites with Self-Healing Capabilities, Department of Energy, National Energy Technology Laboratory, $50,000, 02/22/2006-02/21/2007, 70% responsibility.
60. Gordon Conference of Solid-State Studies in Ceramics Chair's Fund, $1,000, 08/13-18/2006, 100% responsibility.
61. A Class Improvement Plan for MSE 4056, Virginia Tech Center for Excellence in Undergraduate Teaching, $3,130, 9/1/2006-5/10/2006, 100% responsibility.
62. Fellowship of NSF Summer Institute on Nano Mechanics and Materials, Northwestern University, $3,000, 2005, 100% responsibility.
63. Research on Issues of Diversity: Nanotechnology Readiness and its Implication for Higher Education Based on Defined Student Population and Faculty Profile, Small Grant Program of Virginia Tech., $4,400, 2004-2005, 100% responsibility.

64. Visiting Industrial Scholar Program, Oak Ridge Associated University, $700, 2004-2005, 100% responsibility.
65. Oak Ridge Associated Universities Ralph E. Powe Junior Faculty Enhancement Award, $10,000, 2005-2006, 100% responsibility.
66. Extrude Hone Corporation, Grant-in-aid, $41,000, 2004, 100% responsibility.

Professional leadership and service
National:

a) Professional leadership

1. Established and Direct *Materials for Challenging Conditions Lab* at Virginia Tech.
2. Director of the Research and Doctoral Universities Group and Executive Committee Member of Sigma Xi, the Scientific Research Honor Society, July 1, 2021-June 30, 2023.
3. Member of Committee on Awards of Sigma Xi, the Scientific Research Honor Society, July 1, 2021-June 30, 2023.
4. Member of AIME Henry deWitt Smith Scholarship Committee of TMS, 2021-2024.
5. TMS Materials Processing & Manufacturing Division (MPMD) Nominations & Awards Committee March 2020-March 2024 (Committee Chair March 2021-March 2024).
6. TMS Professional Development Committee, 2020 – 2023 (Chair 2021-2023).
7. Thapar Institute of Engineering and Technology promotion and tenure review, India, 2022.
8. ACerS Society Award Committee Co-Chair (2020-2021) and Chair (2021-2022).
9. ACerS Society Diversity and Inclusion Committee member (2021-2022).
10. TMS Materials Processing & Manufacturing Division (MPMD) Council, 2020-2022.
11. Member of the Ellen Swallow Richards Diversity Award and Frank A. Crossley Diversity Award Subcommittee of TMS, 2017-2022 (Chair 2021-2022).
12. National Planning Committee for the 10th Faculty Women of Color in the Academy Conference 2021-2022.
13. National Planning Committee for the 9th Faculty Women of Color in the Academy Conference 2020-2021.
14. National Planning Committee for the 8th Faculty Women of Color in the Academy Conference 2019-2020.
15. Promotion and tenure review for Thapar University, India, 2019.
16. Spriggs Phase Equilibria Award Committee for American Ceramic Society, 2017-2020, Chair (2019-2020).
17. Panelist of 2018 NSF Career Development Workshop in Ceramics, October 13-14, 2018, Columbus, Ohio.
18. Committee on Greaves-Walker Award for American Ceramic Society-NICE (2016-2017).
19. Member of ACerS/NICE: Arthur L. Friedberg Ceramic Engineering Tutorial and Lecture Award Committee, 2016-2017.
20. Panelist of NSF Workshop on Emerging Opportunities in Ceramics and Glass, Arlington, VA, September 12-14, 2016.
21. Chair of the Nanomaterials Technical Division, American Nano Society, 2014.
22. External Board Member of Tennessee Solar Conversion and Storage using Outreach, Research and Education (TN-SCORE), 2014-2015.
23. Advisory Board Member for Sintering 2017 International Conference, San Diego, CA, 2017.

24. Advisory Board Member, Sintering 2014 International Conference, Dresden, Germany, 2014.
25. Member of the Committee on Society Awards Karl Schwartzwalder-Professional Achievement in Ceramic Engineering Award Sub-Committee, 2009-2014.
26. Secretary of National Institute of Ceramic Engineers, 2011-2012.
27. Vice President of National Institute of Ceramic Engineers, 2012-2013.
28. President-Elect of National Institute of Ceramic Engineers, 2013-2014.
29. President of National Institute of Ceramic Engineers, 2014-2015.
30. Book proposal review for John Wiley & Sons, Inc.
31. Book proposal review for CRC Press.
32. PhD dissertation review for Thapar University, India.
33. PhD dissertation review for Indian Institute of Technology, Madras, India

b) Proposal reviews

1. Proposal Reviewer, National Science Foundation, October 2022.
2. Proposal Reviewer: Army Research Office (ARO), September 2022.
3. Proposal Reviewer: NASA National Lab, June 2022.
4. Proposal Reviewer, National Science Foundation, October 2021.
5. Proposal Reviewer, U.S. National Laboratory, August 2021.
6. Proposal Reviewer, Poland National Science Center Proposal Review, July 2021.
7. Proposal Reviewer, Army Research Office, October 2020.
8. Proposal Reviewer, National Science Foundation, September 2020.
9. Proposal Reviewer, Air Force Office of Scientific Research (AFOSR), June 2020.
10. Proposal Reviewer, National Science Foundation, May 2020.
11. Proposal Reviewer, National Science Foundation, April 2020.
12. Proposal Reviewer, Poland National Science Centre, April 2020.
13. Proposal Reviewer, Department of Energy, Office of Science, March 2020.
14. Proposal Reviewer, Department of Energy, Office of Technology Transitions, January 2020.
15. Proposal Reviewer, National Science Foundation, December 2019.
16. Proposal Reviewer, Department of Energy, Idaho Operations Office, October 2019.
17. Proposal Reviewer, Poland National Science Centre, March 2019.
18. Proposal Reviewer, Department of Energy, Office of Science, October 2018.
19. Proposal Reviewer, Department of Energy, NEUP pre-proposal review, October 2018.
20. Proposal Reviewer, US Army Research Office, September 2018.
21. Proposal Reviewer, Department of Energy, NEUP proposal review, June 2018.
22. Institute for Critical Technology and Applied Science of Virginia Tech junior faculty awards, February 2018.
23. U.S. Department of Energy, Idaho Operations Office, Fiscal Year 2018 Consolidated Innovative Nuclear Research, February-March 2018.
24. NSF CMMI Nanomanufacturing proposal review panel, November 2017.
25. NSF DMR Ceramic Program proposal review, April 2017.
26. Panelist, National Science Foundation, CMMI, March 2017.
27. Department of Energy's Office of Technology Transitions (OTT), March 2017.
28. DOE-NE's Consolidated Innovative Nuclear Research, March 2017.
29. Amy Research Office proposal review, December 2016.

30. Office of Basic Energy Sciences (BES) of the Department of Energy Office of Science proposal reviews, December 2016.
31. National Science Foundation Division of Civil, Mechanical and Manufacturing Innovation (CMMI) Panel Review, December 2016.
32. Department of Energy Consolidated Innovative Nuclear Research, March 2016.
33. National Science Foundation Research Traineeship Program (NRT) Panel Review, June 2015.
34. Panelist, National Science Foundation Science and Technology Centers (STC), February 2015.
35. Proposal Review, National Science Foundation, DMR, March 2015.
36. Panelist, National Science Foundation Research Traineeship Program (NRT), September 2014.
37. Panelist, National Science Foundation, SBIR/STTR Phase I, February 2014.
38. Proposal Review, National Science Foundation, DMR, January 2014.
39. Proposal Review, National Science Foundation, DMR, February 2014.
40. Proposal Review, Qatar National Research Fund, February 2014.
41. Panelist, National Science Foundation, CMMI, May 2013.
42. Panelist, National Science Foundation, DMR, March 2013.
43. Panelist, National Science Foundation, CMMI, November 2012.
44. Review of proposals, Academy of Finland, Natural Sciences and Engineering Research, April 2012
45. Panelist, National Science Foundation, DMR, January 2012.
46. Panelist, National Science Foundation, CMMI, May 2011.
47. Panelist, National Science Foundation, CMMI, April 2010.
48. Panelist, National Science Foundation, CMMI, May 2009.
49. Proposal Review, National Science Foundation DMR, October 2009.
50. Proposal Review, ACS PRF Research Proposal Review, March 2009.
51. Proposal Review, National Science Foundation, DMR, October 2008.
52. Proposal Review, U.S. Civilian Research and Development Foundation, June 2008.
53. Proposal Review, NSF International Research Fellowship Program, December 2006.
54. Member of Selected Professional Fellowships Panel of AAUW Educational Foundation (January 1, 07-December 31, 2008).
55. Panelist, National Science Foundation Panel, CBET, November 2007.
56. Panelist, National Science Foundation Panel, CMMI/TTP Program, January 2007.
57. Panelist, National Science Foundation Panel, Engineering Division Nanomanufacturing Program, December 2006.
58. Proposal Reviewer, Department of Energy, Nuclear Energy Research Initiative, October 2005.
59. Panelist, National Science Foundation, DMR NIRT Program, March 2005.
60. Panelist, National Science Foundation, DMII/TTTP Manufacturing Program, January 2005.

c) Conferences organized/chaired

1. Symposium Co-Organizer and Session Chair, Powder Materials Processing and Fundamental Understanding, 2023 TMS Annual Meeting & Exhibition, San Diego, CA, March 19–23, 2023.

2. Symposium Co-Organizer and Session Chair, Advances in Powder and Ceramic Materials Science, 2023 TMS Annual Meeting & Exhibition, San Diego, CA, March 19–23, 2023.
3. Symposium Co-Organizer and Session Chair, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2022 Conference, Pittsburgh, PA, October 9-13, 2022.
4. Symposium Organizer and Session Chair, Materials Processing and Fundamental Understanding Based on Machine Learning and Data Informatics, Materials Science and Engineering 2022 Conference, Pittsburgh, PA, October 9-13, 2022.
5. Symposium Organizer and Session Chair, Powder Materials Processing and Fundamental Understanding, 2022 TMS Annual Meeting & Exhibition, Anaheim, CA, February 27, 2022-March 3, 2022.
6. Symposium Co-Organizer and Session Chair, Advances in Powder and Ceramic Materials Science, 2022 TMS Annual Meeting & Exhibition, Anaheim, CA, February 27, 2022-March 3, 2022.
7. Symposium Co-Organizer and Session Chair, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2021 Conference, Columbus, OH, September 29-October 3, 2021.
8. Symposium Organizer and Session Chair, Advances in Powder and Ceramic Materials Science, TMS 2021 Conference, virtual, March 14-18, 2021.
9. Symposium Organizer and Session Chair, Powder Materials for Energy Applications, TMS 2021 Conference, virtual, March 14-18, 2021.
10. Symposium Organizer, Topic P: Processing and Synthesis, MSE 2020 Congress, virtual, September 22-25, 2020.
11. Symposium Co-Organizer and Session Chair, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2020 Conference, virtual, October 4-8, 2020.
12. Symposium Organizer and Session Chair, Powder Materials for Energy Applications, TMS 2020 Conference, San Diego, CA, February 23-27, 2020.
13. Session Chair, Porous Ceramics: Novel Developments and Applications, 44th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, January 26-31, 2020.
14. Session Chair, Polymer Derived Ceramics and Glasses, 44th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, January 26-31, 2020.
15. Symposium Organizer and Session Chair, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2019 Conference, Portland, Oregon, September 29-October 3, 2019.
16. Session Chair, Green Technologies and Joining of Ceramics, 43th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, January 27-February 1, 2019.
17. Symposium Organizer and Session Chair, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2018 Conference, Columbus, Ohio, October 14-18, 2018.
18. Session Chair: Session: Corrosion, Frontiers in Materials Processing Applications, Research and Technology, Bordeaux, France, July 9-12, 2017.
19. Session Chair: Session: Solid Oxide Fuel Cells and Hydrogen Technologies, 12th Pacific Rim Conference on Ceramic and Glass Technology, Waikoloa, HI, May 21-26, 2017.

20. Symposium Organizer and Session Chair, International Conference on Sintering 2017, San Diego, November 12-16, 2017.
21. Symposium Organizer and Session Chair, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2017 Conference, Pittsburgh, PA, October 8-12, 2017.
22. Symposium Organizer and Session Chair, Curricular Innovations and Continuous Improvement of Academic Programs (and Satisfying ABET Along the Way): The Elizabeth Judson Memorial Symposium, Materials Science and Engineering 2016 Conference, Salt Lake City, Utah, October 23-27, 2016.
23. Symposium Organizer and Session Chair, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2016 Conference, Salt Lake City, Utah, October 23-27, 2016.
24. Session Chair, 145th TMS Annual Meeting & Exhibition, Nashville, TN, February 14-18, 2016.
25. Session Chair, 11th International Conference of Pacific Rim Ceramic Societies (PacRim-11), Jeju Island, South Korea, August 30-September 4, 2015.
26. Session Chair, 2015 TMS 144th Annual Meeting & Exhibition, Orlando, FL, March 15-19, 2015.
27. Symposium Organizer and Session Chair, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2015 Conference, Columbus, OH, October 4-8, 2015.
28. Session Chair, International Conference on Sintering 2014, Dresden, Germany, August 24-28, 2014.
29. Symposium Organizer and Session Chair, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2014 Conference, Pittsburgh, PA, October 12-16, 2014.
30. Session Chair, 8th International Symposium on Nanostructured Materials and Nanocomposites during 38th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, January 26-31, 2014.
31. Symposium Organizer and Session Chair, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2013 Conference, Montreal, QC, Canada, October 27-31, 2013.
32. Session Chair, Flow and Assembly of Dense Suspensions, 12th International Conference on Ceramic Processing Science, Portland, Oregon, August 4-7, 2013.
33. Session Chair, Solid Oxide Fuel Cells and Hydrogen Technology, 10th Pacific Rim Conference on Ceramic and Glass Technology including GOMD 2013 - Glass & Optical Materials Division Annual Meeting, Coronado, CA, June 2-7, 2013.
34. Symposium Organizer and Session Chair, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2012 Conference, Pittsburgh, PA, October 7-11, 2012.
35. Session Chair, 6th International Symposium on Nanostructured Materials and Nano-Composites: Synthesis, Functionalization, Processing and Self-assembly of Nanoparticles, 36th International Conference on Advanced Ceramics & Composites in Daytona Beach, Daytona Beach, FL, January 22-27, 2012.
36. Symposium Organizer and Session Chair, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2011 Conference, Columbus, OH, October 16-20, 2011.

37. Session Chair, 5th International Symposium on Nanostructured Materials and Nanotechnology: Development and Application, 35th International Conference & Exposition on Advanced Ceramics & Composites, Daytona Beach, FL, January 23-28, 2011.
38. Session Chair, Materials in Clean Power Systems VI: Clean Coal-, Hydrogen-Based Technologies, and Fuel Cells, TMS Annual Meeting & Exhibition, San Diego, CA, February 27-March 3, 2011.
39. Symposium Organizer and Session Chair, Controlled Processing of Nanoparticle-based Materials and Nanostructured Films, Materials Science and Engineering 2010 Conference, Houston, TX, October 17-21, 2010.
40. Symposium Organizer, Controlled Processing of Nanoparticle-based Materials and Nanostructured Films, Materials Science and Engineering 2009 Conference, Pittsburgh, Pennsylvania, October 25-29, 2009.
41. Session Chair, International Conference on Sintering 2008, La Jolla, California, November 16-20, 2008.
42. Symposium Organizer and Session Chair, Novel Processing of Nanoparticle and Composite Particulate Systems, Materials Science and Engineering 2008 Conference, Pittsburgh, Pennsylvania, October 5-9, 2008.
43. Symposium Organizer and Session Chair, Second International Symposium on Nanostructured Materials and Nanotechnology: Development and Applications, 32nd International Cocoa Beach Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 27-February 1, 2008.
44. Symposium Chair, Innovative 3D Nanoparticulate Material Processing, Materials Science and Engineering 2007 Conference, Detroit, Michigan, September 16-20, 2007.
45. Session Chair, Nanostructured Materials and Nanotechnology, the 107th Annual Meeting & Exposition of the American Ceramic Society, Baltimore, Maryland, April 10-13, 2005.

d) Manuscript reviewer:

1. 32nd International Conference & Exposition on Advanced Ceramics & Composites
2. 38th International Conference on Metallurgical Coatings and Thin Films
3. ACS Applied Materials & Interfaces
4. Acta Materialia
5. Advanced Engineering Materials
6. American Society for Engineering Education Southeastern Section Annual Meeting
7. Applied Energy
8. Applied Surface Science
9. Ceramic Transaction Proceedings 2009
10. Ceramic Transactions
11. Ceramics International
12. Chemical Engineering Journal
13. Crystal Growth & Design
14. Electrochimica Acta
15. Electrochemistry Communications
16. Extreme Mechanics Letters
17. Fuel Cells
18. International Journal for Numerical Methods in Fluids

19. International Journal of Applied Ceramic Technology
20. International Journal of Applied Glass Science
21. International Journal of Hydrogen Energy
22. Journal of Advanced Ceramics
23. Journal of Alloys and Compounds
24. Journal of Applied Electrochemistry
25. Journal of Asian Ceramic Societies
26. Journal of Fuel Cell Science and Technology
27. JOM
28. Journal of Materials Chemistry A
29. Journal of Materials Science
30. Journal of Materials Science & Technology
31. Journal of Nanoparticle Research
32. Journal of Nanoscience and Nanotechnology Letters
33. Journal of Nanosciene and Nanotechnology
34. Journal of New Materials for Electrochemical Systems
35. Journal of Nuclear Materials
36. Journal of Power Sources
37. Journal of the American Ceramic Society
38. Journal of the American Chemical Society
39. Journal of the Electrochemical Society
40. Journal of the European Ceramic Society
41. Langmuir
42. Materials Chemistry and Physics
43. Materials and Design
44. Materials Letters
45. Materials Research Bulletin
46. Materials Science and Engineering B
47. Metallurgical and Materials Transactions A
48. MS&T 09 Ceramic Transactions
49. Nanoscience and Nanotechnology Letters
50. Powder Technology
51. Proceeding of 30th International Conference on Advanced Ceramics and Composites
52. Proceeding of International Conference on Sintering 2008
53. Proceeding of the 107th American Ceramic Society Annual Meeting
54. Proceedings of the ASME 2010 Eighth International Fuel Cell Science, Engineering and Technology Conference, FuelCell2010
55. Proceedings of the ASME 2010 International Mechanical Engineering Congress & Exposition.
56. RSC Advances
57. Science of Advanced Materials
58. Scientific Report
59. Scripta Materialia
60. Surface and Coatings Technology
61. The Electrochemical Society Journals

University and departmental:

1. Research Contracts and Awards (total $10.8M, $7.5M own share).
2. Director of the DoEd funded GAANN program: https://eng.vt.edu/admissions/graduate-admissions/funding/internal-fellowships/gaann-fellowship.html.
3. Commission on Research, July 1, 2022-June 30, 2025.
4. Virginia Tech College of Engineering P&T Committee, 2017-2023.
5. University Council, 2020-2022.
6. Virginia Tech Academic Support Committee, 2019-2022.
7. Committee Member of Virginia Tech Alumni Award for Research Excellence, 2017-2021.
8. Virginia Tech College of Engineering Research Task Force 2.0 Proposal Reviews, 2022.
9. College of Engineering Research Task Force, 2020-2021.
10. COE Engineering Faculty Organization, 2019-2022.
11. Virginia Tech MSE P&T Committee, March 2016-February 2022.
12. MSE Graduate Committee, 2005-present.
13. Virginia Tech College of Engineering Chemical Engineering Department Head Evaluation Committee, 2017-2018.
14. Co-Lead of Virginia Tech Sustainable and Economical Materials Strategic Growth Area, 2016-2018.
15. Lead of Virginia Tech Intelligent Infrastructure for Human-Centered Communities Destination Area initiative, 2016.
16. Participant of Virginia Tech New Academic Leader series, 2016-2017.
17. Member of Commission on Graduate Studies & Policies (CGSP) of Virginia Tech, 2016-2019.
18. Virginia Tech College of Engineering Dean's Search Committee, 2016.
19. Virginia Tech College of Engineering Diversity Committee, 2016-2017.
20. Virginia Tech Mechanical Engineering Faculty Search Committee for the Advanced Manufacturing cluster, 2014-2015.
21. Virginia Tech Institute for Critical Technology and Applied Science JFC (Sustainability) review panel, March 2013.
22. MSE1004 Materials in Today's World, 2008-2015.
23. Department Faculty Search Committee Chair for the Advanced Manufacturing cluster, 2014-2015.
24. Department ABET Review committee, 2012.
25. Department Faculty Search Committee for the VT-Fire initiative 2009-2010.
26. Department Diversity Committee, Chair, 2007-2022.
27. Nominee and Participant of National Effective Teaching Institute, 2007.
28. Faculty study program at Virginia Tech's Center for Excellence in Undergraduate Teaching with a focus on learning theory and technology, 2005-2007.
29. Biomaterial Cluster Hiring Search Committee of Virginia Tech, 2005-2006.
30. Department Undergraduate Recruitment Committee, 2004-2006.
31. Ad-Hoc Committee on Restructuring Promotion & Tenure Committee for MSE Department of Virginia Tech, 2004-2005.

Community:

1. Science Museum of Western Virginia summer camp, 2015-present.
2. Engineering Freshmen Seminar and Communication Program Seminars, 2004-present.

3. C-Tech^2 and Imagination Camps: 2005-present.
4. Hypatia Female engineers, 2007-present.
5. VT Stars summer camp for economically disadvantaged high school students (2005, 2006).

Affiliations:

1. American Ceramic Society (1998-Present)
2. Materials Research Society (2001-Present)
3. American Association for the Advancement of Science
4. Sigma Xi, The Scientific Research Society (1998-Present)
5. TMS, The Minerals, Metals & Materials Society (2015-, lifetime member)
6. ASM International (since December 2021)
7. Alpha Sigma Mu International Professional Honor Society (2009-Present)
8. American Society for Engineering Education (2004-2012)
9. APMI International (2000-2008)
10. National Institute of Ceramic Engineers (2006-Present)

Patent:

1. K. Lu, M. K. Mahapatra, "Barium Oxide, Calcium Oxide, Magnesia, and Alkali Oxide Free Glass," US8,541,327, September 2013.
2. K. Lu, F. Shen, Tri-Layer CO_3O_4-SDC Protective Coating for Solid Oxide Fuel Cell Interconnects, U.S. Patent Application No: 62/318,369, April 2016.

Publications:

Books:

1. K. Lu, Nanoparticulate Materials-Synthesis, Characterization, and Processing, John Wiley & Sons, Inc., Hoboken, New Jersey, ISBN: 978-1-1182-9142-9, 464 pages, October 2012.
2. K. Lu, Materials in Energy Conversion, Harvesting, and Storage, John Wiley & Sons, Inc., Hoboken, New Jersey, ISBN: 978-1-118-88910-7, 448 pages, September 2014.

Books Edited:

1. N. P. Bansal, J. P. Singh, A. Bhalla, M. M. Mahmoud, N. Jose Manjooran, G. Singh, K. Lu, G. Brennecka, Processing and Properties of Advanced Ceramics and Composites VI, Ceramic Transactions, Volume 249, ISBN: 978-1-118-99549-5, 375 pages, September 2014, Wiley.
2. K. Lu, N. J. Manjooran, R. Murakam, and G. Pickrell, Advances in Synthesis, Processing and Applications of Nanostructures, Ceramic Transactions, Volume 238; ISBN: 978-1-1182-7327-2, August 2012, Wiley.
3. K. Lu, N. Manjooran, M. Radovic, G. Pickrell, E. Medvedovski, E. A. Olevsky, C. Li, G. Singh, and N. Chopra, Advances in Nanomaterials and Nanostructures, Ceramic Transactions, Volume 229, ISBN: 978-1-118-06002-5, August 2011, Wiley.
4. K. Lu, C. Li, E. Medvedovski, E. A. Olevsky, Processing of Nanoparticle Materials and Nanostructured Films, Ceramic Transactions, Volume 223, 2010, ISBN 978-0-470-92731-1, Wiley.
5. T. Hinklin, K. Lu, Processing of Nanoparticle Structures and Composites: Ceramic Transactions, Volume 208, ISBN: 978-0-470-40846-9, August 2009, Wiley.

Book Chapters:

1. K. Lu, K. Ning, "Nanoscale Sintering," *Metal Oxide Nanoparticles: Formation, Functional Properties and Interfaces*, First Edition. Edited by O. Diwald and T. Berger. © 2021 John Wiley & Sons Ltd. Part III, Chapter 8, page 271-301.
2. K. Lu, W. Li, and B. Chen, "Sintering of Porous Materials," *Sintering: Mechanisms of Convention Nanodensification and Field Assisted Processes*, Editors: Ricardo H. R. Castro, Klaus van Benthem, Springer, Engineering Materials 35, 2013, Volume 35, 115-136, DOI: 10.1007/978-3-642-31009-6_6.
3. K. Lu, "Shaping of 3D Nanoceramics and Their Composites," *Handbook of Nanoceramics and Their Based Devices*, American Scientific Publishers, Edited by T.Y. Tseng and H. S. Nalwa, vol. 2, p 151-177, ISBN:1-58883-116-7, Stevenson Ranch, CA, 2009.
4. K. Lu and X. Zhu, "Liquid Nanoparticles: Synthesis and Characterization," *Encyclopedia of Nanoscience and Nanotechnology*, American Scientific Publishers, Stevenson Ranch, CA, 2010. Editor: H. S. Nalwa, ISBN: 1-58883-146-7, Volume 15, 537-574, 2010.

Journal papers:

1. H. J. Choi, K. Lu, "High Compatibility SiOCN Coatings on Stainless Steel," Advanced Composites and Hybrid Materials, submitted.
2. H. Chaney, K. Lu, "New Findings Related to Carbothermal Reduction of Polysiloxane-derived Ceramics," ACS Applied Materials & Interfaces, submitted.
3. K. Lu, H. Chaney, "New Insight into SiOC Atomic Structure Evolution During Early Stage of Pyrolysis," Chemistry of Materials, submitted.
4. Y. Zhou, K. Lu, "Polymer-derived High Temperature Non-Oxide Materials: A Review," Advanced Engineering Materials, submitted.
5. K. Lu, S. Singh, "In-situ TEM Study of Kr Ion Irradiation Tolerance of SiFeOC Nanocomposite," Journal of the European Ceramic Society, 42 (15), 6942-6950, 2022.
6. S. Singh, K. Lu, "Structural Evolution and Electrical Conductivity of Ti_3C_2-SiOC Ceramics" Materials Science and Engineering B, 285, 115954, 2022.
7. P. A. Loughney, S. B. Mujib, T. L. Pruyn, G. Singh, K. Lu, V. Doan-Nguyen, "Enhancing Organosilicon Polymer-Derived Ceramic Properties," Journal of Applied Physics, 132, 070901, 2022.
8. Y.-J. Cho, K. Sun, G. Was, K. Lu, "In-situ Microstructure Observation of Oxidized SiC Layer in Surrogate TRISO Fuel Particles Under Krypton Ion Irradiation," Journal of Alloys and Compounds, 920(5), 165833, 2022.
9. K. Lu, S. Singh, L. Shao, "Kr Ion Irradiation Study of Polymer Derived SiFeOC-C-SiC Nanocomposite," Journal of the American Ceramic Society, 105, 5664– 5675, 2022.
10. W. Wang. S. Tamakloe. Z. Deng, L. Li, W. Cai, K. Lu, "Effects of Processing Temperature on the Corrosion and Tribocorrosion Resistance of Perhydropolysilazane-Derived Coatings on AISI 304 Steel," Surface & Coatings Technology, 439, 128463, 2022.
11. S. Singh, K. Bawane, Z. Hu, L. Yang, Y. Chen, L. Shao, K. Lu, "Helium Ion Irradiation Effects on Microstructure Evolution and Mechanical Properties of Silicon Oxycarbide," Ceramics International, 48 [11], 16063-16071, 2022.
12. S. K. D. Singh, J.-F. Dietiker, K. Lu, "Polysiloxane Coatings on Microspheres Based on

Multiphase Flow with Interface Exchange-Discrete Element Modelling," Particuology, 69, 88-99, 2022.

13. S. K. D. Singh, K. Lu, "SiOC Coatings on Yttria Stabilized Zirconia Microspheres Using a Fluidized Bed Coating Process," Powder Technology, 396 (A), 158-166, 2022.
14. N. Yang, C. Ophus, B. H. Savitzky, M. Scott, K. Bustillo, and K. Lu, "Amorphous and Crystalline Co-Existing SiOC Phase Analysis Using 4D-STEM," Materials Characterization, 181, 111512, 2021.
15. Y. J. Cho, D. Garcia, H. Yu, Z. Deng, L. Li, and K. Lu, "Oxidation Behaviors of Matrix-Grade Graphite During Water Vapor Ingress Accidents for High Temperature Gas-Cooled Reactors," Carbon, 185(15), 161-176, 2021.
16. A. Rau, K. Knott, and K. Lu, "Porous SiOC/SiC Ceramics Via an Active-Filler Catalyzed Polymer-Derived Method," Materials Chemistry Frontiers, 5, 6530-6545, 2021.
17. N. Yang, K. Lu, "Phase Content Prediction in Polymer-Derived Ceramics with Metal Additives," Journal of the American Ceramic Society, 104, 5379-5391, 2021.
18. Y. J. Cho, K. Lu, "Water Vapor Oxidation of SiC Layer in Surrogate TRISO Fuel Particles," Composites Part B: Engineering, 215 (15) 108807, 2021.
19. J. Zheng, K. Lu, "Electrically Conductive and Thermally Stable SiC-TiC Containing Nanocomposites via Flash Pyrolysis," Journal of the American Ceramic Society, 104(6) 2460-2471, 2021.
20. N. Yang, K. Lu, "Effects of Transition Metals on

30. K. Bawane, K. Lu, Q. Li, R. Bordia, “High Temperature Oxidation Behaviors of SiON Coated AISI 441 in Ar+O_2, Ar+H_2O, and Ar+CO_2 Atmospheres,” Corrosion Science, 166 (15)108429 (7 pages), 2020.
31. K. Bawane, K. Lu, “Microstructure Evolution for Nanostructured Ferritic Alloy with and without Cr_3C_2 Coated Silicon Carbide at High Temperatures,” Journal of Materials Science and Technology, 43(15) 126-134, 2020.
32. J. Zhao, H. Yang, Y. Li, K. Lu, “Photocatalytic Activity of CdS Nanoparticles Enhanced by the Interaction between Piezotronic Effect and Phase Junction,” Journal of Alloys and Compounds, 815, 1524942 (9 pages), 2020.
33. N. Yang, M. Gao, J. Li, K. Lu, “Nickel Crystallite-Containing Magnetoceramics from Water Assisted Pyrolysis of Polysiloxane and Nickel 2,4-Pentanedionate,” Journal of the European Ceramic Society, 103, 145–157, 2020.
34. K. Ning, K. Lu, H. Ju, “Sintering Behaviors of Micron-Sized Features Based on 3D Reconstruction," Journal of Materials Science, 54, 14635–14644, 2019.
35. K. Bawane, K. Lu, X. Bai, W.-Y. Chen, M. Li, “In-situ TEM Study of Microstructural Evolution in NFA and Cr_3C_2@SiC-NFA Composite during Ion Irradiation,” Materialia, 7, 100412 (12 pages), 2019.
36. X. Zhang, X. Zhang, J. Duan, K. Lu, “The Preparation of In-Situ $MoSi_2$-SiC-MoB Three-Phase Composite Completely Eliminating the PEST Phenomena,” Materials Chemistry and Physics, 235, 121730, 2019.
37. D. Erb, K. Lu, “Synthesis of SiOC Using Solvent-Modified Polymer Precursors,” Materials Chemistry and Physics, 237, 121844 (6 pages), 2019.
38. N. Yang, K. Lu, “Thermophysical Property and Electrical Conductivity of Titanium Isopropoxide – Polysiloxane Derived Ceramics,” Journal of the European Ceramic Society, 39 (14), 4029-4037, 2019.
39. K. Ning, K. Lu, “Understanding Ion Irradiation Resistance of a Silicon Diffused Nanostructured Ferritic Alloy-Chromium Carbide–Carbon Composite,” Composites Part B, 167, 746-753, 2019.
40. Y. Bai, J. Zhao, Y. Li, Z. Lv, K. Lu, “Preparation and Photocatalytic Performance of TiO_2/$PbTiO_3$ Fiber Composite Enhanced by External Force Induced Piezoelectric Field,” Journal of the American Ceramic Society, 102, 5415–5423, 2019.
41. Y. Bai, J. Zhao, Z. Lv, K. Lu, “Enhanced Piezo-phototronic Effect of ZnO Nanorod Arrays for Harvesting Low Mechanical Energy,” Ceramics International, 45 (12) 15065-15072, 2019.
42. K. Bawane, D. Erb, K. Lu, “Carbon Content and Pyrolysis Atmosphere Effects on Phase Development in SiOC Systems,” Journal of the European Ceramic Society, 39, 2846–2854, 2019.
43. K. Lu, D. Erb, K. Bawane, N. Yang, “Comparison of Traditional and Flash Pyrolysis of Different Carbon Content Silicon Oxycarbides,” Journal of the European Ceramic Society, 39 (10), 3035-3041, 2019.
44. Y. Lin, K. Lu, R. Davis, “Patterning of ZnO Quantum Dot and PMMA Hybrids with a Solvent Assisted Technique,” Langmuir, 35 (17) 5855-5863, 2019.
45. L. Wang, K. Lu, R. Ma, “Effects of Different Polymer Precursors on the Characteristics of SiOC Bulk Ceramics,” Applied Physics A, 125, 395 (13 pages), 2019.
46. K. Lu, M. Gervasio, “Simulation Study of Nanoparticle-Polymer Organic Suspension Stability,” Advanced Theory and Simulations, 2, 1900010 (14 pages), 2019.

https://doi.org/10.1002/adts.201900010.

47. L. Wang, K. Lu, “Phase Development of Silicon Oxycarbide Nanocomposites During Flash Pyrolysis,” Journal of Materials Science, 54(8), 6073-6087, 2019.
48. M. Gervasio, K. Lu, “Monte Carlo Simulation Modeling of Nanoparticle-Polymer Co-Suspensions,” Langmuir, 35 (1), 161–170, 2019.
49. K. Ning, K. Lu, R. Bortner, “High Dose Self-Ion Irradiated Silicon Carbide with Nanostructured Ferritic Alloy Aid,” Journal of Materials Science, 54(1), 605–612, 2019.
50. M. Gervasio, K. Lu, “Sub-Micron Features from Polymer-Derived SiOC via Imprint Lithography,” Journal of the European Ceramic Society, 39, 825-831, 2019.
51. K. Ning, H. Ju, K. Lu, “Effects of Ceramic Types on Evolution of Micron-Sized Features During Sintering,” Journal of the American Ceramic Society, 102(2) 569-577, 2019.
52. J. Zhao, Y. Liu, Y. He, K. Lu, “$Li_4Ti_5O_{12}$ Epitaxial Coating on $LiNi_{0.5}Mn_{1.5}O_4$ Surface for Improving the Electrochemical Performance through Solvothermal-Assisted Processing,” Journal of Alloys and Compounds, 779 (30) 978-984, 2019.
53. K. Shen, K. Lu, “Comparison of Different Perovskite Cathodes in Solid Oxide Fuel Cells,” Fuel Cells, 18(4), 457–465, 2018.
54. H. Ju, K. Ning, K. Lu, “Atmosphere Effects on Micron-Sized ZnO Ridges During Sintering,” Journal of the European Ceramic Society, 38 (15), 5007-5014, 2018.
55. R. Ma; K. Lu, D. Erb, “Effect of Solvent in Preparation of SiOC Bulk Ceramics,” Materials Chemistry and Physics, 218, 140-146, 2018.
56. K. Ning, K. Lu, “Fundamental Understanding of Centrifugal Micromolding for High Fidelity Patterns,” Journal of the European Ceramic Society, 38 (15), 5167-5173, 2018.
57. R. Ma, D. Erb, K. Lu, “Flash Pyrolysis of Polymer-Derived SiOC Ceramics,” Journal of the European Ceramic Society, 38 (15), 4906-4914, 2018.
58. D. Erb, K. Lu, “Effect of Additive Structure and Size on SiO_2 Formation in Polymer Derived SiOC Ceramics,” Journal of the American Ceramic Society, 101, 5378–5388, 2018.
59. K. Bawane, K. Ning, K. Lu, “High Temperature Oxidation Behavior of Silicon Carbide- Carbon Coated Nanostructured Ferritic Alloy Composites in Water Vapor Environment,” Corrosion Science, 139, 206-214, 2018.
60. K. Lu, L. Wang, “Accelerated Polymer to SiOC Nanocomposite Conversion,” Annals of Materials Science and Engineering, 3(1), 1030 (4 pages), 2018.
61. K. Ning, K. Lu, “Water Vapor Thermal Treatment of Silicon Carbide-Nanostructured Ferritic Steel Alloy (SiC-NFA) Composite Materials,” Applied Surface Science, 452, 248-258, 2018.
62. K. Ning, D. Bai, K. Lu, “Study of Self-Ion Irradiated Nanostructured Ferritic Alloy (NFA) and Silicon Carbide-Nanostructured Ferritic Alloy (SiC-NFA) Cladding Materials,” Nuclear Instruments and Methods in Physics Research B, 427, 44-52, 2018.
63. D. Erb, K. Lu, “Effect of SiO_2-forming Additive in Polysiloxane Derived SiOC Ceramics,” Microporous and Mesoporous Materials, 266, 75-82, 2018.
64. K. Ning, K. Lu, “Ion Irradiation Effect on Spark Plasma Sintered Silicon Carbide Ceramics with Nanostructured Ferritic Alloy Aid,” Journal of the American Ceramic Society, 101, 3662–3673, 2018.
65. D. Erb, K. Lu, “Influence of Vinyl Bonds from PDMS on the Pore Structure of Polymer Derived Ceramics,” Materials Chemistry and Physics, 209, 217-226, 2018.

66. K. Ning, K. Lu, “Water Vapor Thermal Treatment Effects on Spark Plasma Sintered Nanostructured Ferritic Alloy-Silicon Carbide Systems,” Journal of the American Ceramic Society, 101, 2208–2215, 2018.
67. K. Bawane, K. Ning, K. Lu, “High Temperature Treatment of Cr_3C_2@SiC-NFA Composites in Water Vapor Environment,” Corrosion Science, 131, 365-375, 2018.
68. G. Li, M. R. von Spakovsky, F. Shen, K. Lu, “Multi-scale Transient and Steady State Study of the Influence of Microstructure Degradation and Chromium Oxide Poisoning on SOFC Cathode Performance,” Journal of Non-equilibrium Thermodynamics, 43(1) 21-42, 2018.
69. H. Ju, K. Ning, K. Lu, “Sintering Behaviors of Micron-Sized Ceramic Rod Feature,” Acta Materialia, 144 (1) 534-542, 2018.
70. K. Ning, Z. Hu, K. Lu, “Spark Plasma Sintering of SiC-NFA Composites with Carbon Barrier Layer,” Journal of Nuclear Materials, 498, 50-59, 2018.
71. H. Ju, K. Ning, K. Lu, “Centrifuge-aided Micromolding of Micron- and Submicron-sized Patterns,” Journal of the European Ceramic Society, 38 (2), 637-645, 2018.
72. K. Lu, D. Erb, “Polymer Derived Silicon Oxycarbide Coatings,” International Materials Reviews, 63 (3), 139–161, 2018.
73. H. Ju, K. Ning, K. Lu, “Roughening and Destructive Effect of Sintering on Micron-Sized ZnO Features,” Acta Materialia, 141, 352-359, 2017.
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75. M. Gervasio, K. Lu, “Suspension-based Imprint Lithography of ZnO-PMMA Hybrids,” Soft Matter, 13, 5569 – 5579, 2017.
76. K. Lu, D. Erb, “Additive and Pyrolysis Atmosphere Effects on Polysiloxane-Derived Porous SiOC Ceramics,” Journal of the European Ceramic Society, 37 (15), 4547-4557, 2017.
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78. K. Ning, Z. Hu, K. Lu, “Spark Plasma Sintering of Silicon Carbide (SiC)-Nanostructured Ferritic Alloy (NFA) Composites with Chromium Carbide Barrier Layer,” Materials Science and Engineering A, 700 (17) 183–190, 2017.
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81. K. T. Faber, T. Asefa, M. Backhaus-Ricoult, R. Brow, J. Chan, S. Dillon, W. Fahrenholtz, M. W. Finnis, J. E. Garay, E. Garcia, Y. Gogotsi, S. M. Haile, J. Halloran, J. Hu, L. Huang, S. Jacobsen, E. Lara-Curzio, J. LeBeau, W. E. Lee, C. G. Levi, I. Levin, J. A. Lewis, D. M. Lipkin, K. Lu, J. Luo, J.-P. Maria, L. W. Martin, S. Martin, G. Messing, A. Navrotsky, N. Padture, C. Randall, G. S. Rohrer, A. Rozenflanz, T. Schaedler, D. Schlom, A. Sehirlioglu, A. Stevensen, T. Tani, V. Tikare, S. Trolier-McKinstry, H. Wang, and B. Yildiz, “The Role of Ceramic and Glass Science Research in Meeting Societal Challenges: A Report from an NSF-Sponsored Workshop on Emerging Opportunities,” Journal of the American Ceramic

Society, 100, 1777–1803, 2017.

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Anatase TiO_2," Journal of Physical Chemistry, 11 , 2015.

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Conference Proceedings:

Technical papers:

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2. K. Lu, W. Li, G. Li, "Understanding Diamond Nanoparticle Evolution During Zirconia Spark Plasma Sintering," Proceeding of the 38th International Conference and Exposition on Advanced Ceramics & Composites (ICACC 2014), Daytona Beach, Florida, January 26-31, 2014. Editors: A. Gyekenyesi, M. Halbig.
3. W. Li, M. Anderson, K. Lu, J. Y. Walz, "Fabrication of Porous Mullite by Freeze Casting and Sintering of Alumina-Silica Nanoparticles," Advances in Synthesis, Processing, and Applications of Nanostructures, Proceeding of Materials Science & Technology 2011 Conference and Exhibit (MS&T '11), October 16-20, 2011, Columbus, OH, Ceramic Transactions, Vol 238, John Wiley & Sons, 2012, Editors: K. Lu, N. Manjooran, R. Murakami, G. Pickrell, page 57-64.
4. K. Lu, B. Chen, "Single Nanometer TiO_2 Particle Synthesis and Soft Lithographic Molding," Proceedings of 2011 NSF Engineering Research and Innovation Conference, Atlanta, Georgia, January 4-7, 2011.
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Teaching papers:

21. C. B. Burgoyne, M. Roman, C. Evia, C. Suchicital, K. Lu, J. Jinscheck, "Work-in-Progress: Development and Implementation of a Web-Based Teaching Resource Site to Prepare International Teaching and Research Faculty for the American Classroom," Proceeding of ASEE/IEEE Frontiers in Education Conference (San Diego, CA, October 28-31, 2006), pp. M4G1-M4G2.
22. K. Lu, C. S. Kessler, "Nanotechnology Readiness among a Diverse Student Population," Proceeding of Mid-Atlantic Conference on the Scholarship of Diversity, Roanoke, VA, March 17-18, 2005.

Invited Talks

1. K. Lu, H. J. Choi, "Corrosion Resistant SiOCN Coatings on Steel with Repair Capability," 2023 TMS Annual Meeting & Exhibition, San Diego, CA, March 19–23, 2023.
2. H. J. Choi, K. Lu, "SiOCN Corrosion Resistant Coatings on Stainless Steel," Materials Science & Technology 2022, Pittsburgh, PA, October 9-13, 2022.
3. K. Lu, Y. J. Cho, "SiC Oxidation and Irradiation Resistance in Advanced Nuclear Reactor TRISO Fuel," Materials Science & Technology 2022, Pittsburgh, PA, October 9-13, 2022.
4. K. Lu, H. J. Choi, W. B. Wang, R. Cai, "Synthesis and Corrosion Study of Polymer-Derived Ceramic Coatings on 304 Stainless Steel," Pan American Ceramics Congress and Ferroelectrics Meeting of Americas (PACC-FMAs 2022), Panama City, Panama, virtual, July 24-28, 2022.
5. K. Lu, "Sintering Behaviors of Micron-Sized Features," Pan American Ceramics Congress and Ferroelectrics Meeting of Americas (PACC-FMAs 2022), Panama City, Panama, virtual, July 24-28, 2022.
6. K. Lu, S. Singh, "Structural Evolution and Electrical Conductivity of Polymer Derived Ceramics," TMS 2022 Annual Meeting & Exhibition, Anaheim, CA, February 27–March 3, 2022.
7. K. Lu, S. Singh, N. Yang, "Structural Evolution and Functionality of Polymer Derived SiOC Ceramics," 46th International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2022), Daytona Beach, FL, virtual, January 23 - 28, 2022.

8. K. Lu, N. Yang, A. Rau, “Polymer Derived SiOC/SiC Ceramics with Different Additives,” 12th International Conference on High-Performance Ceramics (CICC-12), Suzhou, China, virtual, December 19-22, 2021.
9. K. Lu, “Polymer Derived Coatings for Corrosion Protection of Steels,” Materials Science & Technology 2021, Columbus, Ohio, virtual, October 17-21, 2021.
10. K. Lu, “Silicon Oxycarbide Materials,” Rutgers University Departmental Seminar, virtual, April 6, 2021.
11. K. Bawane, K. Lu, X.-M. Bai, K. Ning, W.-Y. Chen, M. Li, “High Temperature Corrosion and Irradiation Behavior of Silicon Carbide and Nanostructured Ferritic Alloy Composites,” TMS 2021 Annual Meeting & Exhibition, virtual, March 14-18, 2021.
12. K. Lu, J. Zheng, N. Yang, “Electrically Conductive SiOC and TiC-SiOC Nanocomposites via Flash Pyrolysis,” 45th International Conference & Exposition on Advanced Ceramics & Composites (ICACC), virtual, February 8–12, 2021.
13. K. Lu, “Polymer Derived Silicon Oxycarbides - A New Generation of Novel Materials,” Webinar on Materials Science, Engineering and Technology, virtual, October 17, 2020.
14. K. Lu, N. Yang, J. Zheng, “Effects of Transition Metals and External Field on the Evolution of Polymer-Derived Si-O-C ceramics,” Materials Science and Engineering 2020 Conference, virtual, October 4-8, 2020.
15. N. Yang, K. Lu, “Porous SiOC Bulk Ceramic Based on Perhydropolysilazane (PHPS) and Polysiloxane (PSO) Pyrolysis,” 44th International Conference and Expo on Advanced Ceramics and Composites (ICACC 2020), Daytona Beach, FL, January 26-31, 2020.
16. K. Lu, K. Bawane, N. Yang, “Polymer Derived Silicon Oxynitride (SiON) Coatings for Corrosion Protection of Steels,” 44th International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2020), Daytona Beach, FL, January 26-31, 2020.
17. K. Lu, N. Yang, D. Erb, “Polymer Derived Functional High Temperature Materials,” 44th International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2020), Daytona Beach, FL, January 26-31, 2020.
18. K. Lu, N. Yang, “Polymer Derived High Temperature Ti-SiOC,” Materials Science & Technology 2019, Portland, Oregon, September 29-October 3, 2019.
19. K. Lu, “Porous Silicon Oxycarbide Without Foreign Additives,” Eleventh International Conference on High-Performance Ceramics (CICC-11), Kunming, China, May 25-29, 2019.
20. K. Lu, “Phase Development of Silicon Oxycarbide Nanocomposites Under Different Conditions,” Eleventh International Conference on High-Performance Ceramics (CICC-11), Kunming, China, May 25-29, 2019.
21. K. Lu, K. Bawane, K. Ning, “Nanostructured Ferritic Alloy-Silicon Carbide Composites for Nuclear Applications,” 2019 TMS Annual Meeting & Exhibition, San Antonio, Texas, March 10-14, 2019.
22. K. Lu, D. Erb, L. Wang, and R. Ma, “Silicon Oxycarbide Through Flash Pyrolysis,” 43rd International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 27-February 1, 2019.
23. K. Lu, “Sintering Behaviors of Micron- and Submicron-sized Features,” Lehigh University MSE Departmental Seminar speaker, March 27, 2018.

24. K. Lu, D. Erb, “Effect of Reactive Additives on Polysiloxane Derived SiOC Porous Ceramics,” 42nd International Conference and Exposition on Advanced Ceramics and Composites, January 21-26, Daytona Beach, FL, 2018.
25. K. Lu, H. Ju, “Sintering Behaviors of Micron- and Submicron-Sized ZnO Features,” International Conference on Sintering 2017, San Diego, CA, November 12-16, 2017.
26. K. Lu, K. Ning, “SiC-NFA Composites for Nuclear Cladding Applications,” Frontiers in Materials Processing Applications, Research and Technology, Bordeaux, France, July 9-12, 2017.
27. K. Lu, D. Erb, “Additive and Pyrolysis Atmosphere Effects on High Surface Area Silicon Oxycarbides,” Frontiers in Materials Processing Applications, Research and Technology, Bordeaux, France, July 9-12, 2017.
28. K. Lu, “Solid Oxide Fuel Cell Interconnect Coatings,” 12th Pacific Rim Conference on Ceramic and Glass Technology, Waikaloa, HI, May 21-26, 2017.
29. K. Lu, “Polysiloxane-Derived Porous SiOC Ceramics,” 12th Pacific Rim Conference on Ceramic and Glass Technology, Waikaloa, HI, May 21-26, 2017.
30. K. Lu, K. Ning, K. Bawane, “Fabrication of Novel NFA-SiC Composites for Nuclear Applications,” AFC Integration Meeting, Oak Ridge, TN, March 28-30, 2017.
31. K. Lu, “Polymer Derived Ceramics and a World of Possibilities on Research, Education, and Friendship,” Humboldt Colloquium: Global Research in the 21st Century: Perspectives of the U.S. Humboldt Network, Washington D.C., March 2-4, 2017.
32. K. Lu, “Material Needs and Developments in Energy Conversion, Harvesting, and Storage,” Fifth Biennial Conference of the Combined Australian Materials Societies 2016, Melbourne, Australia, December 6-8, 2016 (Keynote).
33. K. Lu, “Understanding Current State of Materials Education for a Successful Career Tomorrow,” Materials Science & Technology 2016, Salt Lake City, UT, October 23-27, 2016.
34. K. Lu, K. Shen, “Study of Cathodes and Interconnect Coatings for Solid Oxide Fuel Cells,” Materials Day Symposium-Ceramics for Energy, Darmstadt, Germany, April 29, 2016.
35. K. Lu, K. Shen, “Perovskite-type Cathode Materials and Coatings for Solid Oxide Fuel Cells,” 2016 145th TMS Annual Meeting & Exhibition, Nashville, TN, February 14-18, 2016.
36. K. Lu, “FIB Guided Anodization Patterning, Morphology Control, and Feature Array Transfer,” University of North Carolina, Charlotte, 2/17/2016-2/18/2016.
37. K. Lu, “Growing Materials Education Diversity for a Successful Career Tomorrow,” Materials Science and Engineering 2015 Conference, Columbus, OH, October 4-8, 2015.
38. K. Lu, Z. Tang, Z. Hu, “Silicon Carbide and Oxide Dispersion Strengthened Steel Cladding Materials for Nuclear Applications,” Materials Science and Engineering 2015 Conference, Columbus, OH, October 4-8, 2015.
39. F. Shen, K. Lu, “Properties of Electrodeposition Co and Electrophoresis $Sm_{0.2}Ce_{0.8}O_{1.9}$ Protective Layer on AISI 441 for Solid Oxide Fuel Cells,” Materials Science and Engineering 2015 Conference, Columbus, OH, October 4-8, 2015.
40. K. Lu, K. Shen, “Study of Different New Cathode Materials and Electrocatalyst Incorporation in Solid Oxide Fuel Cells,” The 11th International Conference of Pacific Rim Ceramic Societies (PacRim-11), Jeju Island, South Korea, August 30-September 4, 2015.

41. K. Lu, F. Shen, "$(La_{0.6}Sr_{0.4})_xCo_{0.2}Fe_{0.8}O_3$ and Related Cathode Materials in Solid Oxide Fuel Cells," 2015 TMS 144th Annual Meeting & Exhibition, Walt Disney World, Orlando, FL, March 15-19, 2015.
42. K. Lu, "3D Microstructure Characterization of Nanoparticle-based Material Sintering," the International Conference on Sintering 2014, Dresden, Germany, August 24-28, 2014 (Keynote).
43. K. Lu, "Patterning, Morphology Control, and Feature Array Transfer through Focused Ion Beam Guided Anodization," University of Virginia, Charlottesville, VA, April 14, 2014.
44. K. Lu, M. Gervasio, "Formation and Characterization of Nanoparticle based Sub-micron Structures," 38th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, January 26-31, 2014.
45. K. Lu, W. Li, "Different Cathode Interactions and Performance Behaviors in Solid Oxide Fuel Cells," 10th Pacific Rim Conference on Ceramic and Glass Technology, San Diego, California, June 2-7, 2013.
46. K. Lu, "Development of a Nanoparticle-based Surface Templating Approach," 12th International Conference on Ceramic Processing Science, Portland, Oregon, August 4-7, 2013.
47. K. Lu, "Material Uses and Challenges in Solid Oxide Fuel Cells," Departmental seminar at Technische Universität Darmstadt, Darmstadt, Germany, November 2012.
48. K. Lu, B. Chen, K. Ramsburg, "ZnO Nanoparticle-based Surface Templating," 36th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, Florida, January 22-27, 2012.
49. K. Lu, T. Jin, "Interactions of Electrolyte-$(La_{0.8}Sr_{0.2})_xMnO_3$ Air Electrode Interconnect Tri-layers for Solid Oxide Fuel Cells," 36th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, Florida, January 22-27, 2012.
50. 8. K. Lu, W. Li, J. Walz, "Understanding of Silica-Kaolinite Composite Sintering," Materials Science & Technology 2011 Conference and Exhibit (MS&T '11), Columbus, OH, October 16-20, 2011.
51. K. Lu, B. Chen, Z. Tian, "Understanding Effect of Surface Morphology during Focused Ion Beam Guided Anodization," 35th International Conference & Exposition on Advanced Ceramics & Composites, Daytona Beach, FL, January 23-28, 2011.
52. K. Lu, "Search and Study of a Solid Oxide Fuel Cell Seal Material," 2011 TMS Annual Meeting & Exhibition, San Diego, CA, February 27-March 3, 2011.
53. 5. K. Lu, "Nanoparticle-Based Material Processing and Templating," Ohio State University, Columbus, OH, May 22, 2009.
54. K. Lu, "Energy and Nanoscale Materials," University of Maryland at Baltimore County, Baltimore, MD, May 9, 2008.
55. K. Lu, "Correlating Microscopic and Macroscopic Aspects in Solid-State Sintering," Extrude Hone Corporation, Irwin, PA, November 30, 2004.
56. K. Lu, "Particle Packing, Strength Evolution, and Densification in Solid-State Sintering," Naval Research Laboratory, Arlington, VA, October 22, 2004.
57. K. Lu, "Battery Research and Technology," Advanced Materials Laboratory at Sandia National Lab, March 15, 2004.

Presentations and Posters

1. K. Lu, H. Chaney, “Studying SiOC Atomic Structures via Synchrotron X-ray and Reactive Force Field Potential Studies,” 2023 TMS Annual Meeting & Exhibition, San Diego, CA, March 19–23, 2023.
2. K. Lu, Y. Zhou, H. Chaney, N. Yang, “Inquiry of SiOC Structural Evolution via Synchrotron X-ray and Reactive Force Field Simulation,” Materials Science & Technology 2022, Pittsburgh, PA, October 9-13, 2022.
3. Y. J. Cho, H. Chaney, K. Lu, “Composition and Property Prediction of Polymer-Derived Silicon Oxycarbides,” Materials Science & Technology 2022, Pittsburgh, PA, October 9-13, 2022.
4. H. Chaney, K. Lu, “Molecular Dynamic Simulations of Polymer Derived Ceramics,” Materials Science & Technology 2022, Pittsburgh, PA, October 9-13, 2022.
5. D. Dhariwal, K. Lu, “Simulation of ZrO_2 Phase Transformation for Superelasticity Understanding,” Materials Science & Technology 2022, Pittsburgh, PA, October 9-13, 2022.
6. K. Lu, Y. J. Cho, H. Chaney, K. Flint, “Machine Learning of Gold Nanoparticle/Polymer Hybrid Films,” Pan American Ceramics Congress and Ferroelectrics Meeting of Americas (PACC-FMAs 2022), Panama City, Panama, July 24-28, 2022.
7. W. Wang, S. Tamakloe, W. Cai, K. Lu, “Tribocorrosion Performance of Polymer-Derived Ceramic Coatings on 304 Stainless Steel,” TMS 2022 Annual Meeting & Exhibition, Anaheim, California, February 27–March 3, 2022.
8. K. Lu, S. Singh, “Ion Irradiation Study of Polymer Derived SiFeOC-C-SiC Composite,” TMS 2022 Annual Meeting & Exhibition, Anaheim, California, February 27–March 3, 2022.
9. K. Lu, S. Singh, K. Bawane, “Ion Irradiation Effects on Microstructure Evolution and Mechanical Properties of Silicon Oxycarbide,” TMS 2022 Annual Meeting & Exhibition, Anaheim, California, February 27–March 3, 2022.
10. K. Lu, S. Singh, “In-situ Temperature Dependent Ion Irradiation Tolerance of SiFeOC Nanocomposite,” 46th International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2022), Daytona Beach, FL, virtual, January 23 - 28, 2022.
11. K. Lu, Y. J. Cho, “In-situ Microstructure Observation of Oxidized SiC Layer in Surrogate TRISO Fuel Particles,” 46th International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2022), Daytona Beach, FL, virtual, January 23 - 28, 2022.
12. Y. J. Cho, K. Lu, “A Data Informatics Approach for Polymer-Derived Silicon Oxycarbides,” 46th International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2022), Daytona Beach, FL, virtual, January 23 - 28, 2022.
13. S. Singh, K. Lu, “SiOC Coatings on Yttria Stabilized Zirconia Microspheres Using a Fluidized Bed Coating Process,” Materials Science & Technology 2021, Columbus, Ohio, October 17-21, 2021.
14. Y. J. Cho, T.-C. Cheng, K. Lu, “Ti_3C_2 MXene-Polyvinyl Alcohol Hybrids for Photothermal Self-Healing,” Materials Science & Technology 2021, Columbus, Ohio, virtual, October 17-21, 2021.
15. Y. J. Cho, K. Lu, “Modeling of Graphite Oxidation in Water Vapor Ingress Accidental Conditions for High Temperature Gas-Cooled Reactors,” Materials Science & Technology 2021, Columbus, Ohio, virtual, October 17-21, 2021.

16. A. Rau, K. Lu, “Porous SiOC/SiC Ceramics Via an Active-Filler Catalyzed Polymer-Derived Method,” Materials Science & Technology 2021, Columbus, Ohio, virtual, October 17-21, 2021.
17. K. Lu, S. Singh, “Structural Evolution and Electrical Conductivity of Ti_3C_2-SiOC systems,” TMS 2021 Annual Meeting & Exhibition, virtual, March 14-18, 2021.
18. K. Lu, S. Singh, “Simulation of C-SiOC Coatings on Yttria Stabilized Zirconia Microspheres in a Fluidized Bed Coater Based on Multiphase Flow with Interface Exchange,” TMS 2021 Annual Meeting & Exhibition, virtual, March 14-18, 2021.
19. Y. J. Cho, K. Lu, “Oxidation Behaviors of Matrix-Grade Graphite in Water Vapor Ingress Accidents for High Temperature Gas-Cooled Reactors,” TMS 2021 Annual Meeting & Exhibition, virtual, March 14-18, 2021.
20. K. Lu, K. Bawane, N. Yang, W. Wang, R. Cai, “Polymer Derived Silicon Oxynitride (SiON) Coatings for Corrosion Protection of Steels,” Charmers University of Technology, Gothenburg, Sweden, February 16, 2021.
21. K. Lu, L. Kong, A. Rau, N. Yang, “ZnO Nanoparticle-Poly(methyl methacrylate) Hybrid Ultraviolet Shielding Films,” Materials Science & Technology 2020, virtual, October 4–8, 2020.
22. K. Lu, N. Yang, “Effect of Transition Metals on the Evolution of Polymer-Derived SiOC Ceramics,” MSE 2020 Congress, virtual, September 22-25, 2020.
23. K. Lu, L. Kong, R. Islam, Y. J. Cho, “Flexible Gold Nanoparticle-Polystyrene Hybrids for Photo-Induced Healing,” MSE 2020 Congress, virtual, September 22-25, 2020.
24. K. Lu, N. Yang, “Phase Content Prediction in Multi-element Polymer-derived Ceramics,” MSE 2020 Congress, virtual, September 22-25, 2020.
25. N. Yang, C. Ophus, B. H. Savitzky, M. Scot, K. Bustillo, and K. Lu, “Study of Co-Existing Amorphous and Crystalline SiOC Microstructures using 4D-STEM,” The Molecular Foundry's 2020 User Meeting, virtual, August 20-21, 2020.
26. K. Lu, K. Bawane, X.-M. Bai, M. Li, “Microstructural Evolution of NFA and Cr_3C_2@SiC-NFA Composite during Ion Irradiation,” 149th TMS Annual Meeting & Exhibition, February 23-27, 2020, San Diego, CA.
27. K. Lu, K. Bawane, X.-M. Bai, “Microstructural Evolution of a Nanostructured Ferritic Alloy Composite during In-situ Ion Irradiation,” 149th TMS Annual Meeting & Exhibition, February 23-27, 2020, San Diego, CA.
28. K. Bawane, K. Lu, Q. Li, R. Bordia, “High Temperature Oxidation Behaviors of SiON Coated AISI 441 in Different Atmospheres,” 149th TMS Annual Meeting & Exhibition, February 23-27, 2020, San Diego, CA.
29. Y. J. Cho, K. Lu, “High Temperature Oxidation Behaviors of Nuclear Graphite Under Water Vapor Ingress,” 44th International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2020), Daytona Beach, FL, January 26-31, 2020.
30. Y. J. Cho, K. Lu, “High Temperature Oxidation Behaviors of SiC Under Air/Water Vapor Ingress Conditions,” 44th International Conference and Exposition on Advanced Ceramics and Composites (ICACC 2020), Daytona Beach, FL, January 26-31, 2020.
31. K. Lu, N. Yang, “Nickel-SiOC Magnetoceramics from Water Assisted Pyrolysis of Polymers,” Materials Science & Technology 2019, Portland, Oregon, September 29-October 3, 2019.

32. K. Lu, K. Bawane, “In-situ Ion Irradiation Study of Silicon Carbide-Carbon Coated Nanostructured Ferritic Alloy,” Materials Science & Technology 2019, Portland, Oregon, September 29-October 3, 2019.
33. K. Lu, Y. J. Cho, “Oxidation Study of High Temperature Gas-Cooled Reactor TRISO Fuels at Accidental Conditions,” The 5th Workshop on HTGR SiC Material Properties, Oak Ridge, TN, May 21–22, 2019.
34. K. Lu, Y. Lin, R. Davis, “Patterning of ZnO Quantum Dots and Poly(Methyl Methacrylate) Hybrids,” 2019 TMS Annual Meeting & Exhibition, San Antonio, Texas, March 10-14, 2019.
35. K. Bawane, K. Lu, J. Hu, M. Li, “In-situ Ion Irradiation Response of a Silicon Carbide-Carbon Coated Nanostructured Ferritic Alloy Composite,” 43rd International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 27-February 1, 2019.
36. K. Bawane, K. Lu, “Microstructural Evolution of NFA and Cr_3C_2@SiC-NFA Derived Materials Under Thermal Treatment,” Materials Science & Technology 2018, Columbus, OH, October 14-18, 2018.
37. K. Lu, L. Wang, “Effects of Precursors on Preparation of SiOC Bulk Ceramics,” Materials Science & Technology 2018, Columbus, OH, October 14-18, 2018.
38. K. Lu, D. Erb, “Influence of Bond Characteristics of Polymer Precursors on the Pore Structure of Polymer Derived Ceramics,” Materials Science & Technology 2018, Columbus, OH, October 14-18, 2018.
39. K. Lu, D. Erb, “Creating High Surface Area SiOC Materials using Different Additives,” Materials Science & Technology 2017, Pittsburgh, PA, October 9-12, 2017.
40. K. Bawane, K. Lu, “High Temperature Oxidation of SPS Sintered NFA and Cr_3C_2-coated SiC-NFA Composites in Water Vapor Containing Environment,” Materials Science & Technology 2017, Pittsburgh, PA, October 9-12, 2017.
41. K. Lu, M. Gervasio, “Imprint Lithography of ZnO-PMMA Hybrids,” Materials Science & Technology 2017, Pittsburgh, PA, October 9-12, 2017.
42. H. Ju, K. Ning, K. Lu, “Centrifuge-aided Micromolding of Micron- and Submicron-sized Patterns,” Materials Science & Technology 2017, Pittsburgh, PA, October 9-12, 2017.
43. K. Ning, K. Lu, “Corrosion Resistance of Pure SiC and SiC-NFA Composite under High Temperature Water Vapor Conditions,” Materials Science & Technology 2017, Pittsburgh, PA, October 9-12, 2017.
44. K. Ning, K. Lu, “Study of SPS Sintered NFA and NFA-SiC Cladding Materials under High Dose Self-Ion Irradiation,” Materials Science & Technology 2017, Pittsburgh, PA, October 9-12, 2017.
45. K. Ning, K. Lu, “Water Vapor Effects on SPS Sintered Nanostructural Ferritic Alloy and Silicon Carbide Composite Materials,” Materials Research Society Fall Meeting, Boston, MA, November 27-December 2, 2016.
46. K. Ning, Z. Hu, K. Lu, “Fabrication of New NFA-SiC Composites for Nuclear Applications,” 2016 ANS Winter Meeting, Las Vegas, NV, November 6-10, 2016.
47. K. Lu, Z. Hu, K. Ning, “Oxide Dispersion Strengthened Steel and Silicon Carbide Composite Cladding Materials,” Materials Science & Technology 2016, Salt Lake City, UT, October 23-27, 2016.

48. K. Lu, D. Erb, “Thermal Stability and Electrical Conductivity of Carbon-Enriched Silicon Oxycarbide,” Materials Science & Technology 2016, Salt Lake City, UT, October 23-27, 2016.
49. K. Lu, M. Gervasio, “Imprint Lithography of ZnO-PMMA Hybrids,” Materials Science & Technology 2016, Salt Lake City, UT, October 23-27, 2016.
50. K. Lu, Z. Hu, Z. Tang, “Oxide Dispersion Strengthened Steel and Silicon Carbide Composite Cladding Materials,” 145th TMS Annual Meeting & Exhibition, Nashville, Tennessee. February 14-18, 2016.
51. K. Lu, “Highly Porous SiOC Bulk Ceramics,” 11th International Conference of Pacific Rim Ceramic Societies (PacRim-11), Jeju Island, South Korea, August 30-September 4, 2015.
52. K. Lu, M. Gervasio, “Nanoparticle-Polymer Hybrid Sub-micron Structures,” Materials Science & Technology 2014, Pittsburgh, PA, October 12-16, 2014.
53. J. Li, K. Lu, T. Lin, F. Shen, “Preparation of Micro/Nano Porous SiOC Bulk Ceramics,” Materials Science & Technology 2014, Pittsburgh, PA, October 12-16, 2014.
54. T. Lin, K. Lu, J. Li, F. Shen, “Preparation and Characterization of Silicon Oxycarbide Coatings on Stainless Steel,” Materials Science & Technology 2014, Pittsburgh, PA, October 12-16, 2014.
55. M. Gervasio, K. Lu, “Novel Fabrication Technique for ZnO-PMMA Hybrid Submicron Structures,” TechConnect World Conference and Exposition 2014, National Harbor, Maryland, June 16-18, 2014.
56. W. Li, J. Walz, K. Lu, M. Anderson, "Fabrication of Reinforced Porous Nanocomposites with Silica Nanorods and Nanospheres,” 2013 AIChE Annual Meeting, San Francisco, CA, November 3-8, 2013.
57. K. Lu, Z. Xia, W. Li, “Sintering Nanostructured ZrO_2 and 3D Microstructure Characterization,” Materials for Energy 2013 Conference, Karlsruhe, Germany, May 12-16, 2013.
58. K. Lu, Z. Xia, W. Li, “ZrO_2 Nanoparticle-based Material Sintering and 3D Microstructure Characterization,” 10th Pacific Rim Conference on Ceramic and Glass Technology, San Diego, California, June 2-7, 2013.
59. Kathy Lu, Wenle Li, “$La_{1-x}Sr_xCo_{1-y}Fe_yO_3$ Interactions and Performance Behaviors in Solid Oxide Fuel Cells,” Materials for Energy 2013 Conference, Karlsruhe, Germany, May 12-16, 2013.
60. W. Li, K. Lu, J. Y. Walz, “Fabrication of Kaolinite-silica Membrane with Adjustable Specific Surface Area by Suspension Infiltration,” 2012 MRS Fall Meeting & Exhibit, Boston, MA, November 25-30, 2012.
61. B. Chen, J. Hou, J. Shi, K. Lu, X. Wang, “Hierarchical TiO_2 Bamboo Nanotubes for Photoelectrochemical Water Splitting and Supercapacitors,” 2012 MRS Fall Meeting & Exhibit, Boston, MA, November 25-30, 2012.
62. K. Lu, Z. Xia, B. Chen, “3D Sintering Microstructure Quantification,” MSE Conference

63. K. Lu, W. Li, J. Y. Walz, “Rod-Like Particle Addition Effects on Freeze-Cast Porous Silica Composites,” MSE Conference 2012, Darmstadt, Ge
    2012.

64. B. Chen, K. Lu, “Voltage Decreasing Rate Effect during Two-Step Anodization on Multilayer TiO_2 Nanotubes,” Materials Science and Technology 2012 Conference, Pittsburgh, PA, October 7-11, 2012.
65. B. Chen, K. Lu, K. Ramsburg, “Ceramic Micro-patterns by Soft Lithographic Molding of Nanoparticle Suspensions,” Materials Science and Technology 2012 Conference, Pittsburgh, PA, October 7-11, 2012.
66. K. Lu, W. Li, “An Intermediate Glass Seal System for Solid Oxide Fuel Cells,” Materials Science and Technology 2012 Conference, Pittsburgh, PA, October 7-11, 2012.
67. K. Lu, Z. Xia, “Cathode Degradation in Severe High Temperature Environments of Solid Oxide Fuel/Electrolyzer Cells,” Materials Science and Technology 2012 Conference, Pittsburgh, PA, October 7-11, 2012.
68. W. Li, K. Lu, J. Walz, “Solids Loading Effects on Sintering of Kaolinite-Silica Porous Composite,” Materials Science and Engineering 2012 Conference, Pittsburgh, PA, October 7-11, 2012.
69. K. Lu, “Patterning, Morphology Control, and Feature Array Transfer Through Focused Ion Beam Guided Anodization,” 6th International Workshop on Spinel Nitrides and Related Materials in conjunction with the Marie Curie ITN 7th Framework Programme FUNEA Ruedesheim/Rhine, Germany, September 9-14, 2012.
70. Z. Xia, K. Lu, “3D Microstructure Construction of Sintered ZrO_2 under Different Sintering Conditions,” First International Conference on 3D Materials Science, Seven Springs, PA, July 8-12, 2012.
71. K. Lu, Y. Liang, B. Chen, Z. Xia, “Nanoparticle Soft Lithographic Molding and Sintering Study,” NSF CMMI Grantee Conference, Boston, MA, July 8-11, 2012.
72. K. Lu, B. Chen, “Selective Closing and Opening of TiO_2 Nanotubes by Focused Ion Beam,” MRS Spring Meeting and Exhibit, San Francisco, CA, April 4-13, 2012.
73. K. Lu, W. Li, J. Y. Walz, “Strengthening Effect of Kaolinite on Porous Kaolinite-Silica Nanocomposites,” 36th International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, Florida, January 22-27, 2012.
74. K. Lu, Y. Liang, “Titania Suspension for Fabrication of Micron Feature Arrays via Template-assisted Approach,” 36th International Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, Florida, January 22-27, 2012.
75. K. Lu, “Titania Nanoparticle Suspension and Template-assisted Fabrication of Micron Feature Arrays,“ 9th Annual Nanotechnolgy for Defense Conference, Bellevue, WA, October 24-27, 2011.
76. K. Lu, “Novel Nanostructures by Focused Ion Beam Guided Anodization,” 9th Annual Nanotechnolgy for Defense Conference, Bellevue, WA, October 24-27, 2011.
77. B. Chen, K. Lu, “Hierarchically Branched TiO_2 Nanotubes with Controlled Branch Numbers and Diameters,” 2011 MRS Fall Meeting & Exhibit, Boston, MA, November 28-December 2, 2011.
78. K. Lu, B. Chen, “Directed Material Synthesis-Focused Ion Beam Guided Anodization and Soft Lithographic Molding,” MRS Directed Self-Assembly of Materials Workshop, Nashville, Tennessee, September 28 - October 1, 2011.
79. B. Chen, K. Lu, “Highly Ordered TiO_2 Nanotube Arrays with Novel Arrangements by Focused Ion Beam Guidance,” Materials Science & Technology 2011 Conference and Exhibit (MS&T '11), Columbus, OH, October 16-20, 2011.

80. W. Li, K. Lu, J. Walz, “Kaolinite Effects on Sintering of Freeze-Cast Kaolinite-Silica Nanocomposite,” Materials Science & Technology 2011 Conference and Exhibit (MS&T '11), Columbus, OH, October 16-20, 2011.
81. K. Lu, T. Jin, “Interfacial Interactions of Electrolyte-$(La_{0.8}Sr_{0.2})_xMnO_3$-Interconnect Tri-layer for Solid Oxide Fuel Cells,” Materials Science & Technology 2011 Conference and Exhibit (MS&T'11), Columbus, OH, October 16-20, 2011.
82. K. Lu, Z. Tian, B. Chen, “TiO_2 Nanoparticle Array Patterning by Freeze Casting,” 35th International Conference & Exposition on Advanced Ceramics & Composites, Daytona Beach, FL, January 23-28, 2011.
83. K. Lu, T. Jin, “Cathode Microstructure and Composition Effect on Interaction with Interconnect in Solid Oxide Fuel Cells,” 35th International Conference & Exposition on Advanced Ceramics & Composites, Daytona Beach, FL, January 23-28, 2011.
84. J. Walz, W. Li, K. Lu, “Structure and Properties of Sintered Kaolinite-Silica Nanocomposites,” 35th International Conference & Exposition on Advanced Ceramics & Composites, Daytona Beach, FL, January 23-28, 2011.
85. K. Lu, B. Chen, “Titania Nanoparticle Synthesis and Soft Lithographic Molding,” 2011 NSF Engineering Research and Innovation Conference, Atlanta, Georgia, January 4-7, 2011.
86. B. Chen, K. Lu, “Unique Nanopore Templates by Focused Ion Beam Guided Anodization,” 2011 NSF Engineering Research and Innovation Conference, Atlanta, Georgia, January 4-7, 2011.
87. K. Lu, T. Jin, “AISI441 Interconnect-Air Electrode Interfacial Study for Solid Oxide Fuel/Electrolyzer Cells,” Materials Science & Technology 2010 Conference and Exhibit (MS&T'10), Houston, TX, October 17-21, 2010.
88. K. Lu, Z. Tian, “Mechanisms of Focused Ion Beam Guided Anodization,” Materials Science & Technology 2010 Conference and Exhibit (MS&T'10), Houston, TX, October 17-21, 2010.
89. K. Lu, B. Chen, “Focused Ion Beam Guided Anodization,” Materials Science & Technology 2010 Conference and Exhibit (MS&T'10), Houston, TX, October 17-21, 2010.
90. J. Y. Walz, W. Li, and K. Lu, “Understanding Microstructural Evolution and Integrity of a Silica-Kaolinite System,” Materials Science & Technology 2010 Conference and Exhibit (MS&T '10), Houston, TX, October 17-21, 2010.
91. K. Lu, T. Jin, “Compatibility between AISI441 Interconnect and Sr-doped Lanthanum Manganite Electrode in Solid Oxide Fuel/Electrolyzer Cells,” First International Conference on Materials for Energy, Karlsruhe, Germany, July 4-8, 2010.
92. K. Lu, Z. Tian, “Novel Template Formation by Focused Ion Beam Guided Anodization,” First International Conference on Materials for Energy, Karlsruhe, Germany, July 4-8, 2010.
93. K. Lu, B. Chen, “Unique Nanopore Templates by Focused Ion Beam Guided Anodization,” First International Conference on Materials for Energy, Karlsruhe, Germany, July 4-8, 2010.
94. K. Lu, T. Jin, “Interfacial Behavior of T441 Interconnect/Glass Seal for Solid Oxide Fuel/Electrolyzer Cells,” 34th International Cocoa Beach Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 24-29, 2010.

95. M. Mahapatra, K. Lu, “Sealing Performance of an Alkaline Earth Silicate Glass for Solid Oxide Fuel/Electrolyzer Cells,” 34th International Cocoa Beach Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 24-29, 2010.
96. K. Lu, J. Zhao, J. Sions, “A Liquid-based TiO_2 Nanoparticle Synthesis and Array Patterning Process,” 34th International Cocoa Beach Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 24-29, 2010.
97. K. Lu, J. Zhao, “Synthesis of Single Nanometer Zinc Oxide Nanoparticles for Optical Applications,” 34th International Cocoa Beach Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 24-29, 2010.
98. T. Jin and K. Lu, “Thermal Stability of a $SrO–La_2O_3–Al_2O_3–SiO_2$ glass,” Materials Science & Technology 2009 Conference and Exhibit (MS&T '09), Pittsburgh, PA, October 25-29, 2009.
99. M. K. Mahapatra and K. Lu, “Interfacial Stability of Uncoated and $(Mn,Co)_3O_4$ Coated Interconnect/glass Seal Joint,” Materials Science & Technology 2009 Conference and Exhibit (MS&T '09), Pittsburgh, PA, October 25-29, 2009.
100. K. Lu, J. Z. Zhao, “Heterogeneous Patterning by Focus Ion Beam Assisted Anodization,” Materials Science & Technology 2009 Conference and Exhibit (MS&T '09), Pittsburgh, PA, October 25-29, 2009.
101. K. Lu, C. Hammond, “Patterning Nanoparticle-Based Arrays through a Liquid Process,” Materials Science & Technology 2009 Conference and Exhibit (MS&T '09), Pittsburgh, PA, October 25-29, 2009.
102. C. T. McKee, J. Walz, K. Lu, “Properties of Freeze-Casted Composites of Silica and Kaolinite,” Materials Science & Technology 2009 Conference and Exhibit (MS&T '09), Pittsburgh, PA, October 25-29, 2009.
103. K. Lu, Chase Hammond, “Template-Assisted Nanoparticle Processing,” NSF CMMI Research and Innovation Conference 2009, Honolulu, Hawaii, June 22-25, 2009.
104. M. K. Mahapatra, and K. Lu, “Compatibility of Interconnect/glass Seal at Different Atmosphere for Solid Oxide Cell Application,” 8th Pacific Rim Conference on Ceramic and Glass Technology, Vancouver, BC, Canada, May 31-June 5, 2009.
105. T. Jin and K. Lu, “Thermochemical Stability Evaluation of a Solid Oxide Cell Glass” 8th Pacific Rim Conference on Ceramic and Glass Technology, Vancouver, BC, Canada, May 31-June 5, 2009.
106. K. Lu, J. Qian, “Assembly of Multi-walled Carbon Nanotubes and Titania Sol,” 33nd International Cocoa Beach Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 18-23, 2009.
107. M. K. Mahapatra, K. Lu, and W. T. Reynolds, “Thermochemical Stability at the Interface of a New Seal Glass and Crofer 22 APU Interconnect,” 33rd International Cocoa Beach Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 18-23, 2009.
108. K. Lu, “Templated Nanostructures for Solar Cell Electrode,” Workshop on Efficient Conversion of Solar Energy to Electricity and Fuels: Critical Research Directions and Tutorial, Boulder, CO, August 1-15, 2008.
109. M. K. Mahapatra, K. Lu, and W. T. Reynolds, "Diffusion Study of a Novel Glass Seal with Metallic Interconnect and Shape Memory Alloy for Solid Oxide Cells," Materials

Science & Technology 2008 Conference and Exhibit (MS&T '08), Pittsburgh, PA, October 5-9, 2008.

110. K. Lu, X. Zhu "Ni-B Nanolayer Evolution on Boron Carbide Particle Surfaces at High Temperatures," Materials Science & Technology 2008 Conference and Exhibit (MS&T '08), Pittsburgh, PA, October 5-9, 2008.
111. K. Lu, C. Hammond, "Nanoparticle-based Bulk Material Templating," Materials Science & Technology 2008 Conference and Exhibit (MS&T '08), Pittsburgh, PA, October 5-9, 2008.
112. K. Lu, X. Zhu, **"**Nickel-Boron Nanolayer Coated Boron Carbide Pressureless Sintering," 2008 International Conference on Sintering, La Jolla, California, November 16-20, 2008.
113. K. Lu, H. Dong, X. Zhu, C. Glomb, E. Logan, K. Nagarathnam, "Applying Nickel Nanolayer Coating onto B_4C Particles for Processing Improvement," 32nd International Cocoa Beach Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 28-February 1, 2008.
114. K. Lu, M. K. Mahapatra, and W. T. Reynolds, "SrO-La_2O_3-Al_2O_3-B_2O_3-SiO_2 Based Glass Seal Phase Stability Study," 32nd International Cocoa Beach Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 28-February 1, 2008.
115. K. Lu, X. Zhu, K. Nagarathnam, "Coating Ni-B Nanolayer onto Boron Carbide Particles for High Density Forming," Proceedings of 2008 NSF Engineering Research and Innovation Conference, Knoxville, Tennessee, January 7-10, 2008.
116. K. Lu, "Gradient Meshed and Toughened SOEC Composite Seal with Self-Healing Capabilities," FY07 Nuclear Hydrogen Initiative Semiannual Review Meeting, Idaho Falls, Idaho, October 23-25, 2007.
117. M. K. Mahapatra, C. Story, K. Lu, W. T. Reynolds, 'Glass-Ceramic Seal Stability Study for Solid Oxide Electrolyer/Fuel Cells," Materials Science and Technology 2007 Conference, September 16-20, 2007, Detroit, Michigan, Energy: Fuel Cells: Materials, Processing, Manufacturing and Power Management Technologies, Organized by P. Singh, A-M. Azad, D. C. Collins, P. N. Kumta, C. Legzdins, A. Manthiram, A. Manivannan, S. K. Sundaram, and Z. G. Yang.
118. N. L. Yue, K. Lu, W. T. Reynolds, and C. Story, "Fabrication of Shape Memory Alloy Mesh Using Three Dimensional Printing," Materials Science and Technology 2007 Conference, September 16-20, 2007, Detroit, Michigan, Energy: Fuel Cells: Materials, Processing, Manufacturing and Power Management Technologies, Organized by P. Singh, A-M. Azad, D. C. Collins, P. N. Kumta, C. Legzdins, A. Manthiram, A. Manivannan, S. K. Sundaram, and Z. G. Yang.
119. K. Lu, X. Zhu, H. Dong, K. Nagarathnam, "Electroless Coating of Ni-B Nanolayer onto Boron Carbide Particles for Bulk Compact Forming," Materials Science and Technology 2007 Conference, September 16-20, 2007, Detroit, Michigan, Nanotechnology: Innovative 3D Nanoparticulate Materials Processing, Organized by K. Lu, A. Aning, and M.-J. Pan.
120. H. Dong, K. Lu, "TiO_2 Nanoparticle Self-assembly onto Carbon Nanotubes," Materials Science and Technology 2007 Conference, September 16-20, 2007, Detroit, Michigan, Nanotechnology: Innovative 3D Nanoparticulate Materials Processing, Organized by K. Lu, A. Aning, and M.-J. Pan.

121. C. Story, W. Reynolds, and K. Lu, "Shape Memory Alloy/Glass Composite Gas Seal for Solid Oxide Fuel Cells," 136th TMS Annual Meeting & Exhibition, Orlando, FL, February 24-March 1, 2007.
122. K. Lu, C. Story, W. T. Reynolds, "Glass/Shape Memory Alloy Composite Study for Solid Oxide Fuel/Electrolyzer Cell Applications," 31st International Cocoa Beach Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, Janurary 21-26, 2007.
123. K. Lu, X. Zhu, F. Zhang, "Freeze Casting as a 3D Nanoparticulate Material Forming Method," 31st International Cocoa Beach Conference and Exposition on Advanced Ceramics and Composites, Daytona Beach, FL, January 21-26, 2007.
124. C. Story, K. Xu, K. Lu, W. T. Reynolds, "Self-Healing Composite Seal for Solid Oxide Fuel/Electrolyzer Cells," Deans' Forum on Energy Security and Sustainability, Blacksburg, VA, October 16, 2006.
125. X. J. Zhu, K. Lu, "Coating B_4C Particles with Ni Using Electroless Coating Technique", Workshop on Instrumentation, Metrology, and Standards for Nanomanufacturing, Gaithersburg, MD, October 17-19, 2006.
126. K. Lu, "Alumina and Carbon Nanotube-Alumina Nanocomposite Freeze Casting and Sintering," Ceramics, Solid State Studies in, Gordon Conference, Andover, NH, August 13-18, 2006.
127. X. J. Zhu, K. Lu, "Electroless Nickel Coating of Boron Carbide Particles," 2006 Materials Science & Technology International Conference, Cincinnati, OH, October 15-19, 2006.
128. K. Lu, "Carbon Nanotube and Alumina Nanoparticle Suspension and Freeze Casting Study," 2006 Materials Science & Technology International Conference, Cincinnati, OH, October 15-19, 2006.
129. K. Lu, C. S. Kessler, X. Zhu, "Nanoparticle Colloidal Processing and Freeze Casting for Complex Shape Forming," Virginia Nanotech 2006-Working Together to Lead the Nation, Newport News, VA, June 11-13, 2006.
130. K. Lu, X. Zhu, "Coating Nanolayer onto Boron Carbide Particles," Virginia Nanotech 2006-Working Together to Lead the Nation, Newport News, VA, June 11-13, 2006.
131. K. Lu, C. S. Kessler, X. Zhu, "Colloidal Processing and Freeze Casting for Net-Shaping," 2006 CNMS User Meeting, Oak Ridge, TN, June 14-16, 2006.
132. K. Lu, C. Story, and W. T. Reynolds, "Three-Dimensional Printing of Gradient Meshed Solid Oxide Fuel Cell Seal Composites" University Coal Research/Historically Black Colleges and Universities and Other Minority Institutions Contractors Review Conference, Pittsburgh, PA, June 6-7, 2006.
133. X. Zhu, K. Lu, "Modification of Boron Carbide Particle Surface by Electroless Nickel Coating," 2006 Annual Meeting of Virginia Academy of Science, Blacksburg, VA, May 23-26, 2006.
134. K. Lu, X. Zhu, "Electroless Coating Boron Carbide Particle Surfaces with Nickel," Nanomaterials for Defense Applications, Virginia Beach, VA, May 1-4, 2006.
135. K. Lu, "Nanoparticle and Its Composite Colloidal Processing and Freeze-Cast Forming," Nanomaterials for Defense Applications, Virginia Beach, VA, May 1-4, 2006.

136. K. Lu, C. S. Kessler, "Nanoparticle Colloidal Suspension Optimization and Freeze-Cast Forming," 30th International Conference on Advanced Ceramics and Composite, Cocoa Beach, FL, 2006.
137. C. S. Kessler, K. Lu, X. J. Zhu, "Understanding of First Year Engineering Students on Nanotechnology," 2nd Annual Mid-Atlantic Conference on the Scholarship of Diversity, Blacksburg, VA, February 2–3, 2006.
138. K. Lu, "The Needs in Nanoparticulate Material Sintering Simulation," Partner in Technology Forum, Oak Ridge, TN, April 21-22, 2005.
139. K. Lu, "Powder Material Processing for Multifunctional Applications," DARPA/DSO Unmanned Underwater Vehicles (UUV) Power Systems Workshop, Ellicott City, MD, April 20, 2005.
140. 8. C. S. Kessler, K. Lu, "Nanostructured Alumina Study by Freeze Casting of Water-Based Dispersions," The 107th American Ceramic Society Meeting, Baltimore, Maryland, April 10-13, 2005.
141. K. Lu and R. M. German, and R. G. Iacocca, "Pre-sintering Effects on Tungsten Heavy Alloy Liquid Phase Sintering," The 2001 International Conference on Powder Metallurgy & Particulate Materials (PM^2), New Orleans, May 13-17, 2001.
142. K. Lu, B. M. Marx, and R. M. German, "Porosity Effects on Densification in Liquid Phase Sintering," The 3rd CISP Industry Member Meeting, University Park, PA, October 3-4, 2000.
143. 5. K. Lu, B. M. Marx, and R. M. German, "Porosity Effects in Liquid Phase Sintering," The 55th Pennsylvania Ceramics Association Annual Forum, University Park, PA, September 28-29, 2000.
144. K. Lu, and J. J. Lannutti, "Generic Connections between Discrete Particles and Macroscopic Shrinkage in the Presence of Density Gradients," The 102th American Ceramic Society Meeting, St. Louis, MO, April 30-May 3, 2000.
145. J. J. Lannutti and K. Lu, "Ultimate Particle-Macroscopic Shrinkage Connections in the Presence of Density Gradients," The 102nd American Ceramic Society Meeting, St. Louis, MO, April 30~May 3, 2000.
146. K. Lu, and J. J. Lannutti, "Barriers to Maintaining Dimensional Tolerance in the Presence of Density Gradients," The 101st American Ceramic Society Meeting, Indianapolis, IN, May 3-6, 1999.
147. K. Lu, and J. J. Lannutti, "Binder Effects on Dimensional Tolerance at Low Temperature," The 100th American Ceramic Society Meeting, Cincinnati, OH, May 3-6, 1998.

Technical Reports and Working Papers

1. 4 Annual Project Reports to DoEd on "GAANN--An Interdisciplinary Program in Multifunctional Material Synthesis and Advanced Manufacturing (MM-SAM)", 2018-2023.
2. 2 Annual Project Report to NSF on "ISS: Synthesis of Electrically Conductive Ti_3C_2-SiOC and TiC-SiC High Temperature Composites Under Microgravity and Normal Gravity Conditions", 2020-2024.
3. 8 Quarterly Project Reports to DOE on "New Coatings for Nuclear Fuel Waste Canister Storage and Transport", 2020-2023.

4. 3 Annual Project Reports to NSF on “Additive Manufacturing of Load and Energy Absorbing Materials through an Integrated Experimental and Modelling Approach”, 2019-2023.
5. 12 Quarterly Project Reports to DOE on “C-SiOC-SiC Coated Particle Fuels for Advanced Nuclear Reactors”, 2018-2021.
6. 16 Quarterly Project Reports to DOE on “Oxidation Study of High Temperature Gas-Cooled Reactor TRISO Fuels at Accidental Conditions”, 2018-2022.
7. Office of Naval Research monthly reports November 2010-May 2018.
8. 4 NSF Program Annual Reports on “Hybrid Material Co-Dispersion and Lithographic Patterning for Nano-scale Device Applications”, 2017-2021.
9. 4 NSF Program Annual Reports on “Collaborative Research: Experiment and Modeling Integrated Design of Ultrahigh Surface Area and Conductive SiOCs”, 2016-2020.
10. 4 NSF Program Annual Reports on “Nanoscale Sintering Understanding”, 2015-2019.
11. 16 Quarterly Project Reports to DOE on “SiC-ODS Alloy Gradient Nanocomposites as Novel Cladding Materials”, 2014-2018.
12. 4 Annual Project Reports to ONR on “New Solid Oxide Fuel Cell Interconnect Coatings”, 2014-2018.
13. 4 Annual Project Reports to ONR on “Material Degradation in Severe High Temperature Environments of Solid Oxide Fuel/Electrolyzer Cells”, 2010-2014.
14. 4 NSF Program Annual Reports on “Multi-Scale Study of Nanoparticle Sintering”, 2010-2014.
15. 4 NSF Program Annual Reports on “Template-Assisted Nanoparticle Processing”, 2008-2012.
16. 2 NSF Program Annual Reports on “Nanodesign and Efficient Processing of Boron Carbide Nanocomposites”, 2006-2008.
17. 4 DOE Program Annual Reports on “Digital Manufacturing of Gradient Meshed SOFC Sealing Composites with Self-Healing Capabilities”, 2016-2020.
18. 4 DOE Program Yearly Reports on “Digital Manufacturing of Gradient Meshed SOFC Sealing Composites with Self-Healing Capabilities”, 2016-2020.
19. 16 DOE Program Quarterly Reports on “Gradient Meshed and Toughened SOEC Composite Seal with Self-Healing Capabilities”, 2016-2020.
20. 1 PRF Program Annual Report “Multilayer Assembly of Nanoparticles Using Carbon Nanotube as Backbone Phase”, 2008.
21. 1 ORAU Program Annual Report on “Co-Dispersion and Freeze Casting of Nanotube-Nanoceramic Composite”, 2006.
22. 35 confidential technical reports at Energizer Battery Company, 2001-2004.

Teaching

Courses developed or taught

- Powder Processing, MSE 5044/MSE4984, graduate/ undergraduate level
- Nanomaterials, MSE 4614/5614, graduate/undergraduate level
- Materials Selection and Design II, MSE 4056, undergraduate level
- Elements of Materials Engineering, MSE 2034, undergraduate level
- Physical Ceramics, MSE4144, undergraduate level

Thesis Advisor

1) Chris Kessler ((United States Patent and Trademark Office), M.S., Aug. 2006.

2) Chris Story (Northrop Grumman, Newport News, VA), M.S. May 2007.
3) Xiaojing Zhu (EnerDel, Inc., IN), Ph.D., July 2008.
4) Manoj Mahapatra ((University of Alabama at Birmingham), PhD, December 2009.
5) Zhipeng Tian (Virginia Tech), MS, December 2010.
6) Tony Jin (Pacific Northwest National Laboratory), Ph.D., August 2011.
7) Wenle Li (China University of Petroleum), Ph.D., July 2012.
8) Bo Chen (University of North Carolina, NC), Ph.D., December 2012.
9) Zhihao Hu (Virginia Tech), M.S., July 2016.
10) Kris Shen (Lawrence Berkeley National Lab), Ph.D., December 2016.
11) Hongfei Ju (Arizona State University), M.S., December 2018.
12) Donnie Erb (Virginia Tech), M.S., July 2018.
13) Michelle Gervasio (Sweet Briar College), Ph.D., December 2018.
14) Kaustubh Bawane (Idaho National Lab), Ph.D. degree December 2019.
15) Lingchen Kong (George Washington University), M.Eng. degree, December 2019.
16) Lily Yang (North Carolina State University), Ph.D. degree, December 2020.
17) Katie Flint (Virginia Tech), MEng degree, Spring 2021.
18) Advaith Rau (Virginia Tech), PhD degree expected fall 2023.
19) Deepak Dhariwal (Virginia Tech), PhD degree expected fall 2024.
20) Harrison Chaney (Virginia Tech), MS degree expected summer 2023.
21) HyeonJoon Choi (Virginia Tech), PhD degree expected fall 2025.

Advisor of International Exchange Graduate Students:

22) Hanna Hyel (Technischen Universität Darmstadt, Darmstadt, Germany), MS degree, June 2014.
23) Yang Bai (Xi'an University of Technology, China), MS degree, May 2016.
24) Alexander Janissek (Technischen Universität Darmstadt, Darmstadt, Germany), MS degree, June 2017.
25) Yun-Yun Li (Xi'an University of Technology, China), MS degree, March 2018.
26) Jiaqi Zheng (Shanghai Institute of Ceramics, Chinese Academy of Sciences), PhD, 2020.

Postgraduate-Scholar and Research Scientist Sponsor

1. Hongying Dong (Inner Mongolia University of Technology, China)
2. Junmin Qian (Xi'an Jiaotong University)
3. Jingzhong Zhao (Xi'an University of Technology)
4. Vishal Kumar (Shri Guru GranthSahib World University, India)
5. Wenle Li (China University of Petroleum)
6. Tiesong Liu (Harbin Institute of Technology)
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10. Rachel Ma (North China Institute of Science and Technology)
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12. Xiaoli Zhang (Zhongyuan University of Technology, China)
13. Amsarani Ramamoorthy (Unknown)
14. Yi Je Cho (Sunchon National University, South Korea)
15. Sanjay Kumar (Florida A&M University)
16. Jan Tomastik (Academy of Sciences of the Czech Republic)

17. Yue Zhou (Virginia Tech)

Undergraduate advisor

Senior design:

1. Chris Graham (2004-2005)
2. Mike Weston (2004-2005)
3. Andrew Yeshnik (2008-2009)
4. Eric Singer (2008-2009)
5. Michelle Gervasio (2011-2012)
6. Jeff Geldmeier (2011-2012)
7. Tom Hays (2011-2012)
8. Peter Evans (2011-2012)
9. Chris Reynolds (2013-2014)
10. Josh Stuckner (2013-2014)
11. Evan Hoffman (2013-2014)
12. Maddy Johnson (2021-2022)
13. William Wallace (2021-2022)
14. Elijah Gendron (2021-2022)
15. Albert Kodua (2021-2022)

Lab assistant:

16. Chris Glomb (2006-2008)
17. Kevin Yu (2006-2007)
18. Elizabeth Logan (2007)
19. Matt Hiser (2007-2008)
20. Chase Hammond (2008-2009)
21. Karen Kokal (2009 spring and fall)
22. Laura Spieldenner (2009 fall)
23. Jeff Geldmeier (2009-2011)
24. John Sions (2009 summer)
25. Corey Hank (2009 summer)
26. Taylor Keating (2009 summer)
27. Tyler Corley (2010 spring, 2010 fall, 2011 fall, 2011 spring)
28. Jacob Monzel (2010 spring and summer)
29. Thomas Burton (2010 summer)
30. Justin Clough (2010 summer)
31. Michelle Gervasio (2010 summer)
32. Robert Jones (2011 Spring)
33. Kelly C. Ramsburg (summer 2011)
34. Kevin J. Penyak (summer 2011-spring 2012)
35. Matthew J. McCarley (summer 2011)
36. Margaret Anderson (summer 2011-spring 2012)
37. Grayson Doucette (spring 2012, summer 2013)
38. Megan Kimicata (summer 2012)
39. Farhan Hasan (summer and fall 2012)
40. Matthew McGuire (summer 2013)

41. Paul Kim (summer 2014)
42. Mengxia Liu (spring 2014), Tianjin University exchange student.
43. Mengying Liu (spring 2015), Tianjin University exchange student.
44. Donnie Erb (summer 2015)
45. Devante Ruffin (summer 2015, fall 2015)
46. Christina Romano (summer 2015, spring 2016)
47. Shuyu Xie (spring 2016), Tianjin University exchange student
48. Kelsey Snead (summer 2016)
49. Wessley Hampton (summer 2016)
50. Kristian Cusimano (summer 2017)
51. Corinne Wells (summer 2017)
52. Dylan Petersen (summer 2017)
53. Emily Bautista (spring 2018)
54. Chauvien Bui-Huynh (spring 2018)
55. Neal Patel (spring 2018)
56. Jake Yoder (spring 2018)
57. Susan Rankin (summer 2018)
58. Clint Lentile (summer 2018)
59. Rachel Yanoschak (summer 2018)
60. Garrett Lawlor (summer 2019)
61. Charles Mann (summer and fall 2019)
62. Kalista McCoy (summer 2019)
63. Ariel Lee (fall 2019)
64. Samantha Benson (fall 2019, fall 2020)
65. Alex DeJong (fall 2019, summer 2020)
66. Daniel Suh (spring 2020)
67. Dan Wilson (spring 2020)
68. Lukas Metzger (summer 2020, fall 2020)
69. Victoria Gastrock (summer 2020, fall 2020)
70. Elijah Gendron (fall 2020)
71. Harrison Chaney (spring 2021)
72. Aseel Alslbi (fall 2022)
73. Isabel Sue (fall 2022)
74. Jessica Phuong (fall 2022)

Graduate Study Committee

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5. Charles Sprinkle M.S., MSE, committee member
6. Gordon Waller M.S., MSE, committee member
7. Guanchen Li Ph.D., ME, committee member, spring 2012-fall 2015
8. Yipeng Su Ph.D., ECE, committee member, spring 2013-2014
9. Yun Bai Ph.D., ME, committee member
10. Hyun-Cheol Song Ph.D., MSE, committee member (2014-2017)

11. James Tang	M.S., MSE, committee member (2014-2016)
12. Son-Nam Nguyen	M.Eng, MSE, committee member (2017-2018)
13. Hunter Rauch	PhD, MSE, committee member (2019-2021)
14. Jared McDonald	PhD, MSE, committee member (2019-)
15. Alexander Koelsch	MS, MSE, committee member (2020-)
16. Marwa Yacouti	PhD, CEE, committee member (2020-2022)
17. Rob Palisin	M.Eng, MSE, committee member (2021-2022)