Kathy Lu, Ph.D.

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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
2010 – 2015 *Associate Professor*, Department of Materials Science and Engineering
Virginia Polytechnic Institute and State University, Blacksburg, VA
2012 – 2013 *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

2017 Fellow of the American Ceramic Society
2015 Virginia Tech Alumni Award for Research Excellence
2015- Associate Editor of Journal of the American Ceramic Society
2018- JOM Journal Advisor and Guest Editor
2014- Editorial Review Board of Frontiers in Energy Research, section Fuel Cells
2014- Editorial Board Member of Annals of Material Science & Engineering
2012 College of Engineering Faculty Fellow Award, Virginia Tech
2011 Friedrich Wilhelm Bessel Research Award, Alexander von Humboldt Foundation
2008 Karl Schwartzwalder- Professional Achievement in Ceramic Engineering Award, American Ceramic Society
2005 Ralph E. Powe Junior Faculty Enhancement Award, Oak Ridge Associated Universities
2001 P/M Metallography Competition Award, APMI International

Professional Service

National:

a) Professional duties

1. Established and Direct *Innovative Particulate Materials Laboratory* at Virginia Tech since 2004.
2. Panelist of 2018 NSF Career Development Workshop in Ceramics, October 13-14, 2018, Columbus, Ohio.
3. Spriggs Phase Equilibria Award Committee for American Ceramic Society, 2017 – 2020.
4. Committee on Greaves-Walker Award for American Ceramic Society-NICE (2016-2017).
5. Member of ACerS/NICE: Arthur L. Friedberg Ceramic Engineering Tutorial and Lecture Award Committee, 2016-2017.
6. Member of the Ellen Swallow Richards Diversity Award and Frank A. Crossley Diversity Award Subcommittee of TMS, 2017-2020.
7. Panelist of NSF Workshop on Emerging Opportunities in Ceramics and Glass, Arlington, VA, September 12-14, 2016.
8. Chair of the Nanomaterials Technical Division, American Nano Society, 2014.
9. External Board Member of Tennessee Solar Conversion and Storage using Outreach, Research and Education (TN-SCORE), 2014-2015.
10. Advisory Board Member for Sintering 2017 International Conference, San Diego, CA, 2017.
11. Advisory Board Member, Sintering2014 International Conference, Dresden, Germany, 2014.
12. Member of the Committee on Society Awards Karl Schwartzwalder-Professional Achievement in Ceramic Engineering Award Sub-Committee, 2009-2014
13. Secretary of National Institute of Ceramic Engineers, 2011-2012.
14. Vice President of National Institute of Ceramic Engineers, 2012-2013.
15. President-Elect of National Institute of Ceramic Engineers, 2013-2014.
16. President of National Institute of Ceramic Engineers, 2014-2015.
17. Book proposal review for John Wiley & Sons, Inc.
18. Book proposal review for CRC Press.
19. PhD dissertation review for Thapar University and IIT-Madras, India.

b) Proposal reviews

1. Proposal Reviewer, Department of Energy, Office of Science, October 2018.
2. Proposal Reviewer, Department of Energy, NEUP pre-proposal review, October 2018.
3. Proposal Reviewer, US Army Research Office, September 2018.
4. Proposal Reviewer, Department of Energy, NEUP proposal review, June 2018.
5. Institute for Critical Technology and Applied Science of Virginia Tech junior faculty awards, February 2018.
6. U.S. Department of Energy, Idaho Operations Office, Fiscal Year 2018 Consolidated Innovative Nuclear Research, February-March 2018.
7. NSF CMMI Nanomanufacturing proposal review panel, November 2017.
8. NSF DMR Ceramic program proposal review, April 2017.
9. Panelist, National Science Foundation, CMMI, March 2017.
10. Department of Energy's Office of Technology Transitions (OTT), March 2017.
11. DOE-NE's Consolidated Innovative Nuclear Research, March 2017.
12. Amy Research Office proposal review, December 2016.
13. Office of Basic Energy Sciences (BES) of the Department of Energy Office of Science proposal reviews, December 2016.
14. National Science Foundation Division of Civil, Mechanical and Manufacturing Innovation (CMMI) Panel Review, December 2016.

15. Department of Energy Consolidated Innovative Nuclear Research, March 2016.
16. National Science Foundation Research Traineeship Program (NRT) Panel Review, June 2015.
17. Panelist, National Science Foundation Science and Technology Centers (STC), February 2015.
18. Proposal Review, National Science Foundation, DMR, March 2015.
19. Panelist, National Science Foundation Research Traineeship Program (NRT), September 2014.
20. Panelist, National Science Foundation, SBIR/STTR Phase I, February 2014.
21. Proposal Review, National Science Foundation, DMR, January 2014.
22. Proposal Review, National Science Foundation, DMR, February 2014.
23. Proposal Review, Qatar National Research Fund, February 2014.
24. Panelist, National Science Foundation, CMMI, May 2013.
25. Panelist, National Science Foundation, DMR, March 2013.
26. Panelist, National Science Foundation, CMMI, November 2012.
27. Review of proposals, Academy of Finland, Natural Sciences and Engineering Research, April 2012
28. Panelist, National Science Foundation, DMR, January 2012.
29. Panelist, National Science Foundation, CMMI, May 2011.
30. Panelist, National Science Foundation CMMI, April 2010.
31. Panelist, National Science Foundation CMMI, May 2009.
32. Proposal Review, National Science Foundation DMR, October 2009.
33. Proposal Review, ACS PRF Research Proposal Review, March 2009.
34. Proposal Review, National Science Foundation, DMR, October 2008.
35. Proposal Review, U.S. Civilian Research and Development Foundation, June 2008.
36. Proposal Review, NSF International Research Fellowship Program, December 2006.
37. Member of Selected Professional Fellowships Panel of AAUW Educational Foundation (January 1, 07-December 31, 2008).
38. Panelist, National Science Foundation Panel, CBET, November 2007.
39. Panelist, National Science Foundation Panel, CMMI/TTP Program, January 2007.
40. Panelist, National Science Foundation Panel, Engineering Division Nanomanufacturing Program, December 2006.
41. Proposal Reviewer, Department of Energy, Nuclear Energy Research Initiative, October 2005.
42. Proposal Reviewer, U.S. Civilian Research and Development Foundation, 2008.
43. Panelist, National Science Foundation, DMR NIRT Program, March 2005.
44. Panelist, National Science Foundation, DMII/TTTP Manufacturing Program, January 2005.

c) Conferences organized/chaired

1. 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.
2. 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.

3. 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.
4. Session Chair: Session: Corrosion, Frontiers in Materials Processing Applications, Research and Technology, Bordeaux, France, July 9-12, 2017.
5. Session Chair: Session: Solid Oxide Fuel Cells and Hydrogen Technologies, 12th Pacific Rim Conference on Ceramic and Glass Technology, Waikaloa, HI, May 21-26, 2017.
6. Symposium Organizer and Session Chair, International Conference on Sintering 2017, San Diego, November 12-16, 2017.
7. 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.
8. 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.
9. 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.
10. Session Chair, 145th TMS Annual Meeting & Exhibition, Nashville, TN, February 14-18, 2016.
11. Session Chair, 11th International Conference of Pacific Rim Ceramic Societies (PacRim-11), Jeju Island, South Korea, August 30-September 4, 2015.
12. Session Chair, 2015 TMS 144th Annual Meeting & Exhibition, Orlando, FL, March 15-19, 2015.
13. 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.
14. Session Chair, International Conference on Sintering 2014, Dresden, Germany, August 24-28, 2014.
15. 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.
16. 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.
17. 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.
18. Session Chair, Flow and Assembly of Dense Suspensions, 12th International Conference on Ceramic Processing Science, Portland, Oregon, August 4-7, 2013.
19. 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.
20. Symposium Organizer, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2012 Conference, Pittsburgh, PA, October 7-11, 2012.

21. 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.
22. Symposium Organizer, Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials, Materials Science and Engineering 2011 Conference, Columbus, OH, October 16-20, 2011.
23. 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.
24. 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.
25. Symposium Organizer, Controlled Processing of Nanoparticle-based Materials and Nanostructured Films, Materials Science and Engineering 2010 Conference, Houston, TX, October 17-21, 2010.
26. Symposium Organizer, Controlled Processing of Nanoparticle-based Materials and Nanostructured Films, Materials Science and Engineering 2009 Conference, Pittsburgh, Pennsylvania, October 25-29, 2009.
27. Session Chair, International Conference on Sintering 2008, La Jolla, California, November 16-20, 2008.
28. 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.
29. Symposium Organizer, 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.
30. Symposium Chair, Innovative 3D Nanoparticulate Material Processing, Materials Science and Engineering 2007 Conference, Detroit, Michigan, September 16-20, 2007.
31. 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 Alloys and Compounds
23) Journal of Applied Electrochemistry
24) Journal of Fuel Cell Science and Technology
25) JOM
26) Journal of Materials Chemistry A
27) Journal of Materials Science
28) Journal of Nanoparticle Research
29) Journal of Nanoscience and Nanotechnology Letters
30) Journal of Nanosciene and Nanotechnology
31) Journal of New Materials for Electrochemical Systems
32) Journal of Power Sources
33) Journal of the American Ceramic Society
34) Journal of the American Chemical Society
35) Journal of the Electrochemical Society
36) Journal of the European Ceramic Society
37) Langmuir
38) Materials Chemistry and Physics
39) Materials and Design
40) Materials Letters
41) Materials Research Bulletin
42) Materials Science and Engineering B
43) Metallurgical and Materials Transactions A
44) MS&T 09 Ceramic Transactions
45) Nanoscience and Nanotechnology Letters
46) Powder Technology
47) Proceeding of 30th International Conference on Advanced Ceramics and Composites
48) Proceeding of International Conference on Sintering 2008
49) Proceeding of the 107th American Ceramic Society Annual Meeting
50) Proceedings of the ASME 2010 Eighth International Fuel Cell Science, Engineering and Technology Conference, FuelCell2010
51) Proceedings of the ASME 2010 International Mechanical Engineering Congress & Exposition.
52) RSC Advances
53) Science of Advanced Materials
54) Scripta Materialia
55) Surface and Coatings Technology

56) The Electrochemical Society Journals

University and departmental:

1. Research Contracts and Awards (total $7.8 million, $5.1 million own share)
2. Virginia Tech College of Engineering P&T Committee, 2017-2020.
3. Virginia Tech College of Engineering Chemical Engineering Department Head Evaluation Committee, 2017-2018.
4. Committee Member of Virginia Tech Alumni Award for Research Excellence, 2017-2021.
5. Co-Lead of Virginia Tech Sustainable and Economical Materials Strategic Growth Area, 2016-2018.
6. Lead of Virginia Tech Intelligent Infrastructure for Human-Centered Communities Destination Area initiative, 2016.
7. Participant of Virginia Tech New Academic Leader series, 2016-2017.
8. Member of Commission on Graduate Studies & Policies (CGSP) of Virginia Tech, 2016-2019.
9. Virginia Tech College of Engineering Dean's Search Committee, 2016.
10. Virginia Tech College of Engineering Diversity Committee, 2016-2017.
11. Virginia Tech MSE P&T Committee, March 2016-February 2019.
12. Virginia Tech Mechanical Engineering Faculty Search Committee for the Advanced Manufacturing cluster, 2014-2015.
13. Virginia Tech ICTAS JFC (Sustainability) review panel, March 2013.
14. Nominee and Participant of National Effective Teaching Institute, 2007.
15. Faculty study program at Virginia Tech's Center for Excellence in Undergraduate Teaching with a focus on learning theory and technology, 2005-2007.
16. Biomaterial Cluster Hiring Search Committee of Virginia Tech, 2005-2006.
17. MSE1004 Materials in Today's World, 2008-2015.
18. Department Faculty Search Committee Chair for the Advanced Manufacturing cluster, 2014-2015.
19. Department ABET Review committee, 2012.
20. Department Faculty Search Committee for the VT-Fire initiative 2009-2010.
21. Department Diversity Committee, Chair, 2007-2016.
22. Department Undergraduate Recruitment Committee, 2004-2006.
23. Ad-Hoc Committee on Restructuring Promotion &Tenure for MSE Department of Virginia Tech, 2004-2005.
24. MSE Graduate Committee, 2005-present.

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

2. Materials Research Society
3. APMI International
4. American Association for the Advancement of Science
5. American Society for Engineering Education
6. Sigma Xi, The Scientific Research Society
7. Alpha Sigma Mu International Professional Honor Society
8. National Institute of Ceramic Engineers
9. TMS, The Minerals, Metals & Materials Society

Research Contracts and Awards (total $7,775,368, $5,089,252 share)

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:

6. K. Lu, K. Ning, "Nanoscale Sintering," Metal Oxide Nanoparticles: Formation, Functional Properties and Interfaces, Editors: Oliver Diwald and Thomas Berger, John Wiley & Sons, Ltd. Submitted on 1/1/2019.

7. 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.
8. 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.
9. 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:

167. 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," Acta Materialia, submitted.
166. 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, submitted.
165. 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, accepted.
164. K. Bawane, K. Lu, "Microstructure Evolution for Nanostructured Ferritic Alloy with and without Cr_3C_2 Coated Silicon Carbide at High Temperatures," Materials and Design, submitted.
163. Y. Li, J. Zhao, L. Zhang, K. Lu, "Effect of Thermal Treatment in Different Atmospheres on Photocatalytic Activity of TiO_2 Nanotubes," Ceramics International, submitted.
162. 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, revised.
161. Y. Lin, K. Lu, R. Davis, "Patterning of ZnO Quantum Dot and PMMA Hybrids with a Solvent Assisted Technique," Applied Materials & Interfaces, submitted.
160. I. J. Van Rooyen, S. Meher, M. Bachhav, J. Rosales, K. Lu, "Advanced Characterization of SiC and SiC-Nanostructured Ferritic Alloy Composites," Journal of Nuclear Materials, submitted.
159. K. Ning, K. Lu, H. Ju, "Sintering Behaviors of Micron-Sized Features Based on 3D Reconstruction," Journal of the European Ceramic Society, submitted.
158. D. Erb, K. Lu, "Synthesis of SiOC using Solvent-Modified Polymer Precursors," Materials Chemistry and Physics, submitted.
157. L. Wang, K. Lu, R. Ma, "Effects of Different Polymer Precursors on the Characteristics of SiOC Bulk Ceramics," Materials Chemistry and Physics, submitted.
156. K. Ning, K. Lu, "Understanding ion irradiation resistance of a silicon diffused nanostructured ferritic alloy-chromium carbide–carbon composite," Composites Part B, accepted.
155. K. Lu, M. Gervasio, "Simulation Study of Nanoparticle-Polymer Organic Suspension Stability," Advanced Theory and Simulations, accepted.

154. K. Bawane, D. Erb, K. Lu, "Carbon Content and Pyrolysis Atmosphere Effects on Phase Development in SiOC Systems," Journal of the European Ceramic Society, accepted.
153. 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, accepted.
152. L. Wang, K. Lu, "Phase Development of Silicon Oxycarbide Nanocomposites During Flash Pyrolysis," Journal of Materials Science, 54(8), 6073-6087, 2019.
151. M. Gervasio, K. Lu, "Monte Carlo Simulation Modeling of Nanoparticle-Polymer Co-Suspensions," Langmuir, 35 (1), 161–170, 2019.
150. 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.
149. M. Gervasio, K. Lu, "Sub-Micron Features from Polymer-Derived SiOC via Imprint Lithography," Journal of the European Ceramic Society, 39, 825-831, 2019.
148. K. Shen, K. Lu, "Comparison of Different Perovskite Cathodes in Solid Oxide Fuel Cells," Fuel Cells, accepted, 18(4), 2018, 457–465. DOI: 10.1002/fuce.201800044
147. 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.
146. 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.
145. 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.
144. R. Ma; K. Lu, D. Erb, "Effect of Solvent in Preparation of SiOC Bulk Ceramics," Materials Chemistry and Physics, 218, 140-146, 2018.
143. K. Ning, K. Lu, "Fundamental Understanding of Centrifugal Micromolding for High Fidelity Patterns," Journal of the European Ceramic Society, 38 (15), 5167-5173, 2018.
142. R. Ma, D. Erb, K. Lu, "Flash Pyrolysis of Polymer-Derived SiOC Ceramics," Journal of the European Ceramic Society, 38 (15), 4906-4914, 2018.
141. 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.
140. 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.
139. K. Lu, L. Wang, "Accelerated Polymer to SiOC Nanocomposite Conversion," Annals of Materials Science and Engineering, 2018; 3(1): 1030 (4 pages).
138. 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.
137. 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," Nucl. Instr. Meth. Phys. Res. B, 427, 44-52, 2018.
136. D. Erb, K. Lu, "Effect of SiO_2-forming Additive in Polysiloxane Derived SiOC Ceramics," Microporous and Mesoporous Materials, 266, 75-82, 2018.

135. 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, 2018, 101:3662–3673.
134. 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.
133. 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.
132. K. Lu, D. Erb, "Polymer Derived Silicon Oxycarbide Coatings," International Materials Reviews, 63 (3), 139–161, 2018.
131. 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.
130. 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, 2018; 43(1) 21–42.
129. H. Ju, K. Ning, K. Lu, "Sintering Behaviors of Micron-Sized Ceramic Rod Feature," Acta Materialia, 144 (1) 534-542, 2018.
128. 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.
127. 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.
126. H. Ju, K. Ning, K. Lu, "Roughening and Destructive Effect of Sintering on Micron-Sized ZnO Features," Acta Materialia, 141, 352-359, 2017.
125. J. Zhao, Y. Li, Y. Wu, S. Lv, K. Lu, "Microstructure of TiO_2 Porous Ceramics by Freeze Casting of Nanoparticle Suspensions," Ceramics International, 43 (17), 14593-14598, 2017.
124. M. Gervasio, K. Lu, "Suspension-based Imprint Lithography of ZnO-PMMA Hybrids," Soft Matter, 13, 5569 – 5579, 2017.
123. 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.
122. J. Zhao, C. Zhang, C. Hu, K. Lu, "Effect of Thermal Treatment on TiO_2 varistor Properties in Different Atmospheres," Journal of the European Ceramic Society, 37, 3353–3359, 2017.
121. 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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11. K. Lu, C. Hammond, "Nanoparticle-based Bulk Material Templating," Processing of Nanoparticle Structures and Composites: Ceramic Transactions, Vol. 208, 1-10, Editors: T. Hinklin, K. Lu, 2009, John Wiley & Sons.
10. X. Zhu, K. Lu, H. Dong, 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, January, 2008, Daytona Beach, FL. Ceramic Engineering and Science Proceedings, 29(8), 117-129, 2008, Editors: Tatsuki Ohji, Andrew Wereszczak.
9. 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, Jan. 7-10, 2008.
8. M. K. Mahapatra, C. Story, K. Lu, W. T. Reynolds, "Glass-Ceramic Seal Stability Study for Solid Oxide Electrolyer/Fuel Cells," Proceeding of 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. p371-380.
7. X. J. Zhu, K. Lu, "Electroless Nickel Coating of Boron Carbide Particles," Proceeding of 2006 Materials Science & Technology International Conference, Cincinnati, OH, October 15-19, 2006. Innovative Processing and Synthesis of Ceramics, Glasses and Composites, Organized by N.P. Bansal, and J.P. Singh, 421-431, vol. 4
6. K. Lu, "Carbon Nanotube and Alumina Nanoparticle Suspension and Freeze Casting Study," Proceeding of 2006 Materials Science & Technology International Conference, Cincinnati, OH, October 15-19, 2006. vol. 2, 463-471, Nanomaterials: Science and Technology, Organized by S. Mathur, R.M. Laine, M.Z. Hu, J. Vartuli, O.B. Koper.
5. K. Lu, C. S. Kessler, "Nanoparticle Colloidal Suspension Optimization and Freeze-Cast Forming," Ceramic Engineering and Science Proceedings, Synthesis and Processing of Nanostructured Materials, Vol. 27, Is. 8, 2006, p1-10, Ed. W. M. Mullins, A. Wereszczak, and E. Lara-Curzio, Proceeding of *30th* International Conference on Advanced Ceramics and Composite, American Ceramic Society, Cocoa Beach, FL.

4. Y. He, R. S. Engel, N. J. Salamon, S. Lindner, K. Lu, "Numerical Simulation for 316L Stainless Steel Powder Die Compaction Process," 2001 Fine Powder Processing International Conference Proceedings, p153-166, 2001, University Park, PA 16802.
3. W. Yi, K. Lu, and R. M. German, "Shape Distortion and Dimensional Precision in Tungsten Heavy Alloy Liquid Phase Sintering." Proceeding of 15th International Plansee Seminar, G. Kneringer et. al, ed., Plansee AG, Reutte 2001.

Teaching papers:

2. 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.
1. 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

37. K. Lu, "Porous Silicon Oxycarbide Without Foreign Additives," Eleventh International Conference on High-Performance Ceramics (CICC-11), Kunming, China, May 25-29, 2019.
36. 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.
35. 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.
34. 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.
33. K. Lu, "Sintering Behaviors of Micron- and Submicron-sized Features," Lehigh University MSE Departmental Seminar speaker, March 27, 2018.
32. K. Lu, Donald 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.
31. 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.
30. 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.
29. 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.

27. K. Lu, “Polysiloxane-Derived Porous SiOC Ceramics,” 12th Pacific Rim Conference on Ceramic and Glass Technology, Waikaloa, HI, May 21-26, 2017.
27. 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.
26. 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.
25. 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).
24. 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.
23. 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.
22. 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.
21. K. Lu, “FIB Guided Anodization Patterning, Morphology Control, and Feature Array Transfer,” University of North Carolina, Charlotte, 2/17/2016-2/18/2016.
22. K. Lu, “Growing Materials Education Diversity for a Successful Career Tomorrow,” Materials Science and Engineering 2015 Conference, Columbus, OH, October 4-8, 2015.
20. 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.
19. 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.
18. 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.
17. 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.
16. K. Lu, “3D Microstructure Characterization of Nanoparticle-based Material Sintering,” the International Conference on Sintering 2014, Dresden, Germany, August 24-28, 2014 (Keynote).
15. K. Lu, “Patterning, Morphology Control, and Feature Array Transfer through Focused Ion Beam Guided Anodization,” University of Virginia, Charlottesville, VA, April 14, 2014.
14. 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.

13. 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.
12. K. Lu, "Development of a Nanoparticle-based Surface Templating Approach," 12th International Conference on Ceramic Processing Science, Portland, Oregon, August 4-7, 2013.
11. K. Lu, "Material Uses and Challenges in Solid Oxide Fuel Cells," Departmental seminar at Technische Universität Darmstadt, Darmstadt, Germany, November 2012.
10. 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.
9. K. Lu, T. Jin, "Interactions of Electrolyte-$(La_{0.8}Sr_{0.2})_xMnO_3$ Air Electrode Interconnect Trilayers for Solid Oxide Fuel Cells," 36th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, Florida, January 22-27, 2012.
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.
7. 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,.
6. 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.
5. K. Lu, "Nanoparticle-Based Material Processing and Templating," Ohio State University, Columbus, OH, May 22, 2009.
4. K. Lu, "Energy and Nanoscale Materials," University of Maryland at Baltimore County, Baltimore, MD, May 9, 2008.
3. K. Lu, "Correlating Microscopic and Macroscopic Aspects in Solid-State Sintering," Extrude Hone Corporation, Irwin, PA, November 30, 2004.
2. K. Lu, "Particle Packing, Strength Evolution, and Densification in Solid-State Sintering," Naval Research Laboratory, Arlington, VA, October 22, 2004.
1. K. Lu, "Battery Research and Technology," Advanced Materials Laboratory at Sandia National Lab, March 15, 2004.

Presentations and Posters

114. 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.
113. 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.
112. 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.
111. K. Lu, L. Wang, "Effects of Precursors on Preparation of SiOC Bulk Ceramics," Materials Science & Technology 2018, Columbus, OH, October 14-18, 2018.

110. 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.
109. K. Lu, D. Erb, “Creating High Surface Area SiOC Materials using Different Additives,” Materials Science & Technology 2017, Pittsburgh, PA, October 9-12, 2017.
108. 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.
107. K. Lu, M. Gervasio, “Imprint Lithography of ZnO-PMMA Hybrids,” Materials Science & Technology 2017, Pittsburgh, PA, October 9-12, 2017.
106. 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.
105. 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.
104. 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.
103. 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.
102. 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.
101. 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.
100. 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.
99. K. Lu, M. Gervasio, “Imprint Lithography of ZnO-PMMA Hybrids,” Materials Science & Technology 2016, Salt Lake City, UT, October 23-27, 2016.
98. K. Lu, Z. Hu, Z. Tang, “Oxide Dispersion Strengthened Steel and Silicon Carbide Composite Cladding Materials,” 2016 145th TMS Annual Meeting & Exhibition, Nashville, Tennessee. February 14-18, 2016.
97. K. Lu, “Highly Porous SiOC Bulk Ceramics,” The 11th International Conference of Pacific Rim Ceramic Societies (PacRim-11), Jeju Island, South Korea, August 30-September 4, 2015.
96. K. Lu, M. Gervasio, “Nanoparticle-Polymer Hybrid Sub-micron Structures,” Materials Science & Technology 2014, Pittsburgh, PA, October 12-16, 2014.
95. 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.
94. 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.

93. M. Gervasio, K. Lu, “Novel Fabrication Technique for ZnO-PMMA Hybrid Submicron Structures,” TechConnect World Conference and Expo 2014, National Harbor, Maryland, June 16-18, 2014.
92. 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.
91. 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.
90. 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.
89. 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.
88. 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.
87. 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.
86. K. Lu, Z. Xia, B. Chen, “3D Sintering Microstructure Quantification,” MSE Conference 2012, Darmstadt, Germany, September 25-27, 2012.
85. K. Lu, W. Li, J. Y. Walz, “Rod-Like Particle Addition Effects on Freeze-Cast Porous Silica Composites,” MSE Conference 2012, Darmstadt, Germany, September 25-27, 2012.
84. 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.
83. 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.
82. 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.
81. 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.
80. 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.
79. 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.
78. 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.

77. Kathy Lu, Yongxuan Liang, Bo Chen, Zhenbo Xia, “Nanoparticle Soft Lithographic Molding and Sintering Study,” NSF CMMI Grantee Conference, Boston, MA, July 8-11, 2012.
76. 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.
75. K. Lu, W. Li, J. Y. Walz, “Strengthening Effect of Kaolinite on Porous Kaolinite-Silica Nanocomposites,” 36th International Conference and Expo 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 Expo on Advanced Ceramics and Composites, Daytona Beach, Florida, January 22-27, 2012.
73. 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.
72. K. Lu, “Novel Nanostructures by Focused Ion Beam Guided Anodization,” 9th Annual Nanotechnolgy for Defense Conference, Bellevue, WA, October 24-27, 2011.
71. 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.
70. 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.
69. 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.
68. 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.
67. 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.
66. 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.
65. 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.
64. 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.
63. K. Lu, B. Chen, “Titania Nanoparticle Synthesis and Soft Lithographic Molding,” 2011 NSF Engineering Research and Innovation Conference, Atlanta, Georgia, January 4-7, 2011.
62. 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.

61. 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.
60. 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.
59. 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.
58. 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.
57. 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.
56. 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.
55. 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.
54. 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.
53. 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.
52. 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.
51. 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.
50. 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.
49. 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.
48. 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.
47. 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.
46. 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.
45. K. Lu, Chase Hammond, "Template-Assisted Nanoparticle Processing," NSF CMMI Research and Innovation Conference 2009, Honolulu, Hawaii, June 22-25, 2009.

44. 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.
43. 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.
42. 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.
41. 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.
40. 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.
39. 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.
38. 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.
37. 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.
36. K. Lu, X. Zhu, **“**Nickel-Boron Nanolayer Coated Boron Carbide Pressureless Sintering,” 2008 International Conference on Sintering, La Jolla, California, November 16-20, 2008.
35. 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.
34. 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.
33. 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.
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6. 4 Annual Project Reports to ONR on “New Solid Oxide Fuel Cell Interconnect Coatings”
7. 4 Annual Project Reports to ONR on “Material Degradation in Severe High Temperature Environments of Solid Oxide Fuel/Electrolyzer Cells”
8. 4 NSF Program Annual Reports on “Multi-Scale Study of Nanoparticle Sintering”
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14. 1 PRF Program Annual Report “Multilayer Assembly of Nanoparticles Using Carbon Nanotube as Backbone Phase”
15. 1 ORAU Program Annual Report on “Co-Dispersion and Freeze Casting of Nanotube-Nanoceramic Composite”
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