

Kathryn L. Harris

CONTACT INFORMATION	Work address: Maskinkonstruktion KTH Royal Institute of Technology Stockholm, Sweden 114 28	Mobile: 46 79 045 49 16 Email: kharris@kth.se
EDUCATION	UNIVERSITY OF FLORIDA Ph.D., Materials Science and Engineering Supervisor: Prof. W. Gregory Sawyer	2011-2016 GPA: 3.93
	UNIVERSITY OF FLORIDA Bachelor of Science, Materials Science and Engineering Minor: Chemistry, Specialization: Electronic Materials	2007-2011 GPA: 3.89
PROFESSIONAL EXPERIENCE	UNIVERSITY OF FLORIDA Graduate Research Assistant Department of Materials Science and Engineering, Gainesville, FL	2010-present
	CONTINUED EDUCATION UNITS Scanning Electron Microscopy (SEM) and X-Ray Microanalysis Course LeHigh University, Bethlehem, PA	2013
	CENTER OF INTEGRATED NANOTECHNOLOGY (CINT) Rapid Access Proposal: Exploratory investigation of substrate dependent transfer film characteristics unique to ultra-low wear PTFE nanocomposites via high resolution electron microscopy Albuquerque, NM	Fall 2012 - Spring 2013
	REU: MAX PLANCK INSTITUTE OF COLLOIDS AND INTERFACES AND THE UNIVERSITY OF AUGSBURG Remineralization of Collagen Scaffolds and Polymer Synthesis Potsdam-Golm and Augsburg, Germany	Summer 2010
AWARDS	National Merit Semi-Finalist University of Florida Honors Program Graduate School Fellowship Award	2007-2011 2007-2011 2011-Present
PROFESSIONAL SERVICE	Student Member: Society of Tribologists and Lubrication Engineers (STLE) - <i>Volunteer</i> , Tribology Outreach Day, STLE Annual Meeting <i>Leonardo da Vincis Science Friction, da Vinci's original friction experiments</i> <i>Building the Pyramids with Tribology, the effects of solid lubricants on friction</i> <i>Tootsie Pop Tribocorrosion, bio-tribocorrosion, wear of irregular surfaces, and experimental technique</i> - <i>Session Vice-Chair</i> , Wear, STLE Annual Meeting	2012- Present 2014 2013
	Student Member: American Vacuum Society (AVS)	2012-2013
COLLEGIATE SERVICE	Teaching Assistant: University of Florida EMA 6313, Advanced Materials Principles 1	Fall 2013
	Women in STEM Outreach: University of Florida Lab tours and demonstrations for young women interested in STEM	March 2015
	Guest Lecturer: Wear of Materials, University of Florida. Instructor: Dr. W. Gregory Sawyer Introduction to Polymers and Polymer Tribology	2015

- [1] K. LeBlanc, S.R. Niemi, A.I. Bennett, **K.L. Harris**, K.D. Schulze, W.G. Sawyer and T.E. Angelini. Stability of High Speed 3D Printing in Liquid-Like Solids. *ACS Biomaterials Science and Engineering*, 2016
- [2] S.R. Niemi, S.L. Marshall, **K.L. Harris**, A.A. Pitenis, J.M. Uruña, D.L. Burris, N. Argibay, and W.G. Sawyer. Damnum ab Initio: A Metal-on-Metal Wear Process. *Biotribology*, 2016

- [1] **K. L. Harris**, A.I. Bennett, K.G. Rowe, and W.G. Sawyer. Janus Blocks: A Binary Wear System Instability. *Tribology Letters*, 2015

- [1] A.A. Pitenis, J.J. Ewin, **K.L. Harris**, W.G. Sawyer and B.A. Krick. In Vacuo Tribological Behavior of Polytetrafluoroethylene (PTFE) and Alumina Nanocomposites: The Importance of Water for Ultra-Low Wear. *Tribology Letters* (2014), Volume 53, Issue 1, p. 189-197, DOI: 10.1007/s11249-013-0256-1
- [2] K. G. Rowe, **K. L. Harris**, K. D. Schulze, S. L. Marshall, A. A. Pitenis, J. M. Uruña, S. R. Niemi, A. I. Bennett, A. C. Dunn, T. E. Angelini, and W. G. Sawyer. Lessons from the Lollipop: Biotribology, Tribocorrosion, and Irregular Surfaces. *Tribology Letters* (2014) Volume 56, Issue 2, p. 273-280. DOI: 10.1007/s11249-014-0407-z (Featured in the "Cutting Edge" editorial, "How Many Licks" by W. T. Tysoe and N. D. Spencer in *Tribology and Lubrication Technology* (2014) Volume 70, Issue 12, p. 104)
- [3] J.M. Uruña, A.A. Pitenis, **K. L. Harris**, and W.G. Sawyer. Evolution and Wear of Fluoropolymer Transfer Films. *Tribology Letters* (2014), Volume 57, Issue 1, DOI: 10.1007/s11249-014-0453-6
- [4] A.A. Pitenis, **K.L. Harris**, C.P. Junk, G.S. Blackman, W.G. Sawyer, and B.A. Krick. Ultralow Wear PTFE and Alumina Composites: It is All About Tribochemistry. *Tribology Letters* (2015), Volume 57 Issue 1, DOI: 10.1007/s11249-014-0445-6
- [5] **K.L. Harris**, A.A. Pitenis, W.G. Sawyer, B.A. Krick, G.S. Blackman, D. Kasprzak, and C.P. Junk. PTFE Tribology and the Role of Mechanochemistry in the Development of Protective Surface Films. *Macromolecules* (2015), Volume 48 Issue 11, p. 3739-3745. DOI: 10.1021/acs.macromol.5b00452
- [6] **K.L. Harris**, J.F. Curry, A.A. Pitenis, K.G. Rowe, M.A. Sidebottom, and W.G. Sawyer. Wear Debris Mobility, Aligned Surface Roughness, and the Low Wear Behavior of Filled Polytetrafluoroethylene. *Tribology Letters* (2015), Volume 60 Issue 1, DOI: 10.1007/s11249-015-0581-7
- [7] B.A. Krick, A.A. Pitenis, **K.L. Harris**, C.P. Junk, W.G. Sawyer, S.C. Brown, H. D. Rosenfeld, D.J. Kasprzak, R.S. Johnson, C.D. Chan and G.S. Blackman Ultralow Wear Fluoropolymer Composites: Nanoscale Functionality from Microscale Fillers. *Tribology International* (2016), Volume 95 p. 245-255, DOI: 10.1016/j.triboint.2015.10.002

- [1] **K.L.Harris**, A. A. Pitenis, B.A. Krick and W. G. Sawyer. "Surface Identity, Modification and Evolution in Polymer Tribology." *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, Las Vegas, Nevada, 2016
- [2] **K.L. Harris**, A.A. Pitenis, J.M. Uruña, C.P. Junk, G.S. Blackman, D. Kasprzak, B.A. Krick and W.G. Sawyer. "Ultra-Low Wear Fluoropolymer Composites." *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, Las Vegas, Nevada, 2016
- [3] A. I. Bennett, **K. L. Harris**, W. G. Sawyer "The Intricacies of Wear of Elastomeric Rolling-Sliding Contacts." *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, Las Vegas, Nevada, 2016

- [1] W. G. Sawyer, B. A. Krick, K. R. Marchman, **K.L. Harris**, S. Sinnott, S. Phillpot, and S. S. Perry. "Going No Wear!" *Plenary talk by W.G Sawyer at the European Symposium on Friction, Wear, and Wear Protection*, Karlsruhe, Germany, 2011
- [2] **K.L. Harris**, B.A. Krick, D.W. Hahn, and W.G. Sawyer. "First Contact: SPR and SERS studies of the Initial Transfer Behavior of PTFE." *American Vacuum Society International Symposium and Exhibition*, Tampa, Florida 2012
- [3] B.A. Krick, K. R. Marchman, **K.L. Harris**, W.G. Sawyer, S. Sinnott, S. Phillpot, and S.S. Perry. "Crystallographic Wear Patterns in Ionic Solids" *American Vacuum Society International Symposium and Exhibition*, Tampa, Florida 2012

- [4] K.R. Marchman, W.G. Sawyer, B.A. Krick, **K.L. Harris**, S.S. Perry, S.B. Sinnott, and S.R. Phillpot. "Examining and Predicting Wear in Single Crystal Ionic Solids." *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, St. Louis, Missouri 2012

- [5] **K.L. Harris**, B.A. Krick, K.M. Marchman, and W.G. Sawyer. “Directionality of Wear in Simple Ionic Solids.” *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, Detroit, Michigan 2013
- [6] A.A. Pitenis, B.A. Krick, **K.L. Harris**, J.J. Ewin, A.A. Pitenis, E.J. McCumiskey, C. Taylor, and W.G. Sawyer. “Exploring the Practical Limits of Wear of Polymer Composite Systems.” *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, Detroit, Michigan 2013
- [7] B. A. Krick, K. R. Marchman, **K. Harris** and W. G. Sawyer. “Atomic Origins of Wear in Ionic Solids.” *World Tribology Congress*, Turin, Italy 2013
- [8] N. Argibay, B.A. Krick, **K.L. Harris**, J.J. Ewin, A.A. Pitenis, E.J. McCumiskey, C. Taylor, and W.G. Sawyer. “Exploring the Practical Limits of Wear of Polymer Composite Systems.” *World Tribology Congress*, Turin, Italy 2013
- [9] **K.L. Harris**, A.A. Pitenis, B.A. Krick, and W.G. Sawyer. “Hard Problems with Soft Contacts” *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, Orlando, Florida 2014
- [10] K.G. Rowe, **K.L. Harris**, and W.G. Sawyer. “In Situ Observations of the Transfer and Wear of Gold on Nickel in Vacuum.” *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, Orlando, Florida 2014
- [11] A.A. Pitenis, **K.L. Harris**, K.G. Rowe, B.A. Krick, and W.G. Sawyer. “In Situ Examination of Fluoropolymer Transfer Film Generation Using Scanning Electron Microscopy” *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, Orlando, Florida 2014
- [12] J.M. Urueña, A.A. Pitenis, **K.L. Harris**, and W.G. Sawyer. “Morphological and Compositional Evolution of Ultra-low Wearing Polytetrafluoroethylene (PTFE) and Alumina Nanocomposite Transfer Films” *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, Orlando, Florida 2014
- [13] A.A. Pitenis, J.M. Uruea, A.C. Dunn, K.D. Schulze, **K.L. Harris**, T.E. Angelini, and W.G. Sawyer. “Gemini Interfaces in Aqueous Lubrication with Hydrogels” *Biomaterials Conference*, Toronto, Canada 2014
- [14] **K.L. Harris**, A.A. Pitenis, J.M. Uruea, C.P. Junk, G.S. Blackman, D. Kasprzak, and W.G. Sawyer. “Mechanochemistry and Ultra-Low Wear in PTFE Composites” *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, Dallas, TX 2015
- [15] W. G. Sawyer, S. L. Marshall, K. G. Rowe, **K. L. Harris**, K. D. Schulze, A. A. Pitenis, J. M. Urueña, S. R. Niemi, A. I. Bennett, A. C. Dunn, T. E. Angelini. “Leonardo da Vinci's Friction Experiments: An Old Story Acknowledged and Repeated.” *Society of Tribologists and Lubrication Engineers Tribology Frontiers*, Denver, Colorado, 2015
- [16] S.L. Marshall, K.G. Rowe, **K.L. Harris**, K.D. Schulze, A.A. Pitenis, J.M. Urueña, S.R. Niemi, A.I. Bennett, A.C. Dunn, T.E. Angelini, and W.G. Sawyer. “Lessons from the Lollipop: Tribocorrosion, Biotribology, and Irregular Surfaces” *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, Dallas, TX 2015
- [17] S.R. Niemi, **K.L. Harris**, J.M. Urueña, M. Lieu, and W.G. Sawyer. “In-Situ Wear Observations of Thin-film Polymer Coatings” *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, Dallas, TX 2015
- [18] K. Rowe, A. Bennett, **K.L. Harris**, and W.G. Sawyer. “Tribology of Elastomers in Combined Rolling and Sliding” *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, Dallas, TX 2015
- [19] **K.L. Harris**, A.A. Pitenis, J.M. Uruea, C.P. Junk, G.S. Blackman, D. Kasprzak, and W.G. Sawyer. “Mechanochemistry and Ultra-Low Wear in PTFE Composites” *Tribology Frontiers Conference*, Denver, CO 2015

POSTER
PRESENTATIONS

PAST POSTER PRESENTATIONS

- [1] **K.L. Harris**, B.A. Krick, D.W. Hahn, and W. G. Sawyer. “Study of Transfer Films via Surface Plasmon Resonance and Surface Enhanced Raman Spectroscopy.” *Society of Tribologists and Lubrication Engineers Annual Exhibition and Meeting*, St. Louis, Missouri 2012
- [2] **K.L. Harris**, A.A. Pitenis, K.G. Rowe, J.M. Urueña, B.A. Krick, and W. G. Sawyer. “Hard Problems with Soft Contacts.” *Gordon Research Conference: Tribology*, Waltham, Massachusetts 2014
- [3] A.A. Pitenis, J.M. Urueña, **K.L. Harris**, E.J. McCumiskey, B.A. Krick, C.R. Taylor, and W.G. Sawyer. “Evolution and Wear of Polymeric Transfer Films.” *Gordon Research Conference: Tribology*, Waltham, Massachusetts 2014
- [4] G.B. Blackman, C.P. Junk, W.G. Sawyer, A.A. Pitenis, **K. L. Harris**, and B. A. Krick. “Its All About the Chemistry: Correcting Persistent Misconceptions About Ultra-Low Wear Fluoropolymers.” *Gordon Research Conference: Tribology*, Waltham, Massachusetts 2014