

Joshua L. Rovey

317 Talbot Lab 104 S. Wright St. Urbana, IL. 61801 (217) 300-7092 rovey@illinois.edu
<http://eplab.ae.illinois.edu> <https://isgc.aerospace.illinois.edu/> <https://spacelab.web.illinois.edu/>

Professional Interests:

Space propulsion, electric propulsion, chemical propulsion, multimode propulsion, nanosatellites, plasmadynamics, advanced propulsion materials, aerospace STEM education and outreach

Education:

- Ph.D. Aerospace Engineering, April 2006, University of Michigan-Ann Arbor
Thesis: A Multiple-Cathode, High-Power, Rectangular Ion Thruster Discharge Chamber for Increasing Thruster Lifetime
Advisor: Alec D. Gallimore
- M.S.E. Aerospace Engineering, April 2003, University of Michigan-Ann Arbor
- B.S.E. Aerospace Engineering, December 2002, University of Michigan-Ann Arbor
Summa Cum Laude with Mathematics Minor

Academic Positions:

University of Illinois at Urbana-Champaign	Urbana, IL.
Department of Aerospace Engineering	Aug. 2022 – Present
Professor of Aerospace Engineering	Jan. 2019 – Present
Director, Illinois Space Grant Consortium	Aug. 2017 – Aug. 2022
Associate Professor of Aerospace Engineering	

University of Southampton	Southampton, UK
Aeronautical and Astronautical Engineering	Summer 2019
Visiting Professor	

Missouri University of Science & Technology (formerly Univ. of Missouri-Rolla)	Rolla, MO.
Department of Mechanical and Aerospace Engineering	Aug. 2016 – Aug. 2017
Dean's Scholar, College of Engineering and Computing	Aug. 2016 – Aug. 2017
Associate Chair for Graduate Affairs	Aug. 2014 – Aug. 2017
Associate Professor of Aerospace Engineering	Jan. 2008 – Aug. 2014
Assistant Professor of Aerospace Engineering	

Parkland College, Department of Mathematics	Champaign, IL.
Part-time Faculty Member	Fall 2007

University of Michigan, Department of Aerospace Engineering	Ann Arbor, MI.
Graduate Research Assistant	Jan. 2002 – Dec. 2005

Relevant Work Experience:

Froberg Aerospace LLC	Wilmington, NC
Chief Technology Officer	Jan. 2016 – Present
<ul style="list-style-type: none">• Development and commercialization of multimode monoprop-electrospray propulsion system• Novel advanced manufacturing of electrospray and combustion thrusters	

- Investigated electrodeless electron cyclotron resonance microwave plasmas
- Tested novel transformer design for wide-bandwidth Hall thruster power processing unit
- Researched annular field-reversed configuration plasma thruster
- Studied internal electron dynamics of Hall-effect devices using non-neutral electron plasma
- Designed and developed ion source for use in plasma-based fusion neutron generator
- Investigated helicon and traveling wave plasma as advanced propulsion techniques

Peer-Reviewed Journal Publications: * denotes my student/post-doc

- J1. Rasmont, N.,* Al-Rashdan, H., Elliott, G., **Rovey, J.L.**, Villafañe, L., "Millimeter Wave Interferometry for Opaque Particle-laden Flows", *IEEE Transactions on Microwave Theory and Techniques*, May 2023.
- J2. Paliwoda, M.C.*, **Rovey, J.L.**, "Broadband Tuning of Plasma Photonic Crystals Bandgaps using Pixelated Plasma Distributions within a Supercell," *Journal of Applied Physics*, Vol. 133, No. 16, April 2023.
- J3. Lyne, C.T.*, Liu, M.F.*, **Rovey, J.L.**, "A Simple Retarding-Potential Time-of-Flight Mass Spectrometer for Electrospray Propulsion Diagnostics," *Journal of Electric Propulsion*, Vol. 2, Issue 1, March 2023.
- J4. Jakob, H., Paliwoda, M.C.*, **Rovey, J.L.**, Kim, M., "Surface DBD Plasma Microbubble Reactor for Degrading Methylene Blue," *Physica Scripta*, Vol. 98, No. 2, pp. 025603, 2023.
- J5. Nuwal, N., Yamauchi, T.,* Sharma, A.,* Levin, D.A., **Rovey, J.L.**, "Kinetic modeling and experiments of a pulsed-bias plasma in a multipole plasma chamber," *Physics of Plasmas*, Vol. 29, No. 112105, Nov. 2022.
- J6. Klosterman, M.R.,* **Rovey, J.L.**, Levin, D.A., Rao, A.,* "Ion-induced Charge Emission from Surfaces Bombarded by an [Emim][BF₄] Electrospray Plume," *Journal of Applied Physics – Special Issue on Physics of Electric Propulsion*, Vol. 131, No. 24, June 2022.
- J7. Broemmelsiek, E.J.,* **Rovey, J.L.**, Berg, S.P., "Effect of Metal Sequestrants on the Decomposition of Hydroxylammonium Nitrate," *Catalysts – Special Issue: Recent Developments in Catalysts for Space Thrusters using Green Monopropellants*, Vol. 11, No. 12, Pg. 1488, Nov. 2021.
- J8. Nuwal, N., Azevedo, V.A., Klosterman, M.R.,* Budaraju, S., Levin, D.A., **Rovey, J.L.**, "Multiscale Modeling of Fragmentation in an Electrospray Plume," *Journal of Applied Physics – Special Issue on Physics of Electric Propulsion*, Vol. 130, No. 184903, Nov. 2021.
- J9. Wainwright, M.J.* and **Rovey, J.L.**, "Effect of Nonlinear Mixing on Electrospray Propulsion Predictions," *Journal of Propulsion and Power*, Vol. 37, No. 1, pp. 167-170, Jan. 2021.
- J10. **Rovey, J.L.**, Lyne, C.T.,* Mundahl, A.J.,* Rasmont, N.,* Glascock, M.S.,* Wainwright, M.J.,* and Berg, S.P., "Review of Multimode Space Propulsion," *Progress in Aerospace Sciences*, Vol. 118, pp. 100627, Oct. 2020. **Invited review paper.**
- J11. Maser, J.N.* and **Rovey, J.L.**, "Asymmetric semiconductor nanostructures for particle manipulation," *AIP Advances*, Vol. 10, No. 095129, Sept. 2020.
- J12. Rasmont, N.,* Broemmelsiek, E.J.,* and **Rovey, J.L.**, "Linear Burn Rate of Ionic Liquid Multimode Monopropellant," *Combustion and Flame*, Vol. 219, pp. 212-224, Sept. 2020.
- J13. Glascock, M.S.,* Drew, P.D.,* **Rovey, J.L.**, Polzin, K.A., "Thermodynamic Properties of Hydroxylammonium Nitrate-Based Electric Solid Propellant Plasma," *Journal of Thermophysics and Heat Transfer*, Vol. 34, No. 3, pp. 522-529, July 2020.
- J14. Glascock, M.S.,* **Rovey, J.L.**, Polzin, K.A., "Impulse and Performance Measurements of Electric Solid Propellant in an Electrothermal Ablation-Fed Pulsed Plasma Thruster," *Aerospace - Special Issue on Electric Propulsion*, Vol. 7, Issue 6, June 2020.

- J15. Paliwoda, M.C.* and **Rovey, J.L.**, “Multiple Parameter Space Bandgap Control of Reconfigurable Atmospheric Plasma Photonic Crystal,” *Physics of Plasmas*, Vol. 27, No. 2, pp. 023516, 2020.
- J16. Wainwright, M.J.*, **Rovey, J.L.**, Miller S.W., Prince, B.D., and Berg, S.P.*, “Hydroxylammonium Nitrate Species in a Monopropellant Electro spray Plume,” *Journal of Propulsion and Power*, Vol. 35, No. 5, pp. 922-929, Sept.-Oct. 2019.
- J17. Glascock, M.S.* , **Rovey, J.L.**, Polzin, K.A., “Electric Solid Propellant Ablation in an Arc Discharge,” *Journal of Propulsion and Power*, Vol. 35, No. 5, pp. 984-993, Sept.-Oct. 2019.
- J18. Maser, J.N.* and **Rovey, J.L.**, “Nanoparticle Injector for Photonic Manipulators using Dielectrophoresis,” *AIP Advances*, Vol. 9, No. 6, pp. 065109, June 2019.
- J19. Glascock, M.S.* , **Rovey, J.L.**, Williams, S., Thrasher, J., “Plasma Plume Characterization of Electric Solid Propellant Pulsed Microthrusters,” *Journal of Propulsion and Power*, Vol. 33, No. 4, pp.870-880, July 2017.
- J20. Paliwoda, M.C.* and **Rovey, J.L.**, “Intensity Control of Individual DBD Plasma Filament II: Fundamental Physical Mechanism,” *Physics of Plasmas*, Vol. 24, No. 053505, May 2017.
- J21. Paliwoda, M.C.* and **Rovey, J.L.**, “Intensity Control of Individual DBD Plasma Filament I: Needle Electrode Experiment,” *Physics of Plasmas*, Vol. 24, No. 053504, May 2017.
- J22. Berg, S.P.* and **Rovey, J.L.**, “Assessment of Multi-Mode Spacecraft Micropropulsion Systems,” *Journal of Spacecraft and Rockets*, Vol. 54, No. 3, pp. 592-601, May-June 2017.
- J23. Hu, Jing,* **Rovey, J.L.**, and Zhao, W., “Retarding field energy analyzer for high energy pulsed electron beam measurements,” *Review of Scientific Instruments*, Vol. 88, No. 1, pp. 013302, Jan. 2017.
- J24. Maser, J.N.* , Li, L., Deng, H., Yang, X., and **Rovey, J.L.**, “Transmission Spectrum of Asymmetric Nanostructures for Plasmonic Space Propulsion,” *Journal of Spacecraft and Rockets*, Vol. 53, No. 5, pp. 998-1000, Sept. – Oct. 2016.
- J25. Meeks, W.C.* and **Rovey, J.L.**, “Time-resolved Temperature in an Argon Theta-pinch by Line Ratio Methods,” *IEEE Transactions on Plasma Science*, Vol. 44, No. 8, pp. 1411-1418, Aug. 2016.
- J26. Pahl, R.A.* and **Rovey, J.L.**, “Effects of DC Preionization Voltage and Radial Location on Pulsed Inductive Plasma Formation,” *IEEE Transactions on Plasma Science*, Vol. 43, No. 11, pp. 3883-3888, Nov. 2015.
- J27. **Rovey, J.L.**, Yang, X., Friz, P.D.* , Hu, C., Glascock, M.S.* , “Plasmonic Force Space Propulsion,” *Journal of Spacecraft and Rockets*, Vol. 52, No. 4, pp. 1163-1168, July 2015.
- J28. Miller, S.W.* , Prince, B.D., Bemish, R.J., and **Rovey, J.L.**, “Electrospray of 1-Butyl-3-Methylimidazolium Dicyanamide Under Variable Flow Rate Operations,” *Journal of Propulsion and Power*, Vol. 30, No. 6, pp. 1701-1710, Nov.-Dec. 2014.
- J29. Pahl, R.A.* and **Rovey, J.L.**, “Energy Analysis of a Pulsed Inductive Plasma through Circuit Simulation,” *IEEE Transactions on Plasma Science*, Vol. 42, No. 10, pp. 3411-3418, Oct. 2014.
- J30. Friz, P.D.* and **Rovey, J.L.**, “The Effects of Electrode Size and Configuration on Plasma Actuator Thrust and Effectiveness at Low Pressure,” *International Journal of Flow Control*, Vol. 6, Issue 2, pp. 75-85, June 2014.
- J31. Satonik, A.J.* , **Rovey, J.L.**, and Hilmas, G., “Effects of Plasma Exposure of Boron Nitride Ceramic Insulators for Hall Effect Thrusters,” *Journal of Propulsion and Power*, Vol. 30, Issue 3, pp. 656-663, May-June 2014.
- J32. Meeks, W.C.* and **Rovey, J.L.**, “Optical Emission Spectroscopy of Plasma Formation in a Xenon Theta-Pinch,” *IEEE Transactions on Plasma Science*, Vol. 42, No. 5, pp. 1385-1392, May 2014.
- J33. Pahl, R.A.* , **Rovey, J.L.**, and Pommerenke, D.J., “Comparison of magnetic probe calibration at nano and millitesla magnitudes,” *Review of Scientific Instruments*, Vol. 85, No. 015112, Jan. 2014.
- J34. Hu, Jing* and **Rovey, J.L.**, “Experimental Investigation of Time-resolved Electron Beam Energy Distributions in a Transient Hollow Cathode Discharge,” *Journal of Applied Physics*, Vol. 144, Issue 7, pg. 073301, Aug. 2013.

- J35. Heckman, A.J.* , **Rovey, J.L.**, Chandrashekhara, K., Watkins, S.E., Stutts, D.S., Banerjee, A., and Mishra, R., “Structural Health Monitoring Data Transmission for Composite Hydrokinetic Turbine Blades,” *Advanced Shipping and Ocean Engineering*, Vol. 2, Issue 2, pp. 50-59, June 2013.
- J36. Nichols, T.G.* and **Rovey, J.L.**, “Surface Potential and Electric Field in the Aerodynamic Plasma Actuator at Low Pressure,” *AIAA Journal*, Vol. 51, Issue 5, pp. 1054-1065, May 2013.
- J37. Berg, S.P.* and **Rovey, J.L.**, “Assessment of Imidazole-Based Ionic Liquids as Dual-Mode Spacecraft Propellants,” *Journal of Propulsion and Power*, Vol. 29, Issue 2, pp. 339-351, Mar-Apr 2013.
- J38. Berg, S.P.* and **Rovey, J.L.**, “Decomposition of Monopropellant Blends of Hydroxylammonium Nitrate and Imidazole-based Ionic Liquid Fuels,” *Journal of Propulsion and Power*, Vol. 29, Issue 1, pp. 125-135, Jan-Feb 2013.
- J39. Hu, Jing* and **Rovey, J.L.**, “Experimental Investigation of Formation Time in Single-Gap Pseudospark Discharge,” *Journal of Physics D: Applied Physics*, Vol. 45, No. 46, pp. 465203, Nov. 21, 2012.
- J40. Meeks, W.C.* and **Rovey, J.L.**, “On the Delayed Gas Breakdown in a Ringing Theta-pinch with Bias Magnetic Field” *Physics of Plasmas*, Vol. 19, No. 052505, May 2012.
- J41. Zidar, D.G.* and **Rovey, J.L.**, “Hall-effect Thruster Channel Surface Properties Investigation,” *Journal of Propulsion and Power*, Vol. 28, No. 2, Mar-Apr. 2012.
- J42. Hu, Jing* and **Rovey, J.L.**, “Faraday Cup with Nanosecond Response and Adjustable Impedance for Fast Electron Beam Characterization,” *Review of Scientific Instruments*, Vol. 82, No. 073504, July 2011.
- J43. Donius, B.R.* and **Rovey, J.L.**, “Ionic Liquid Dual-mode Spacecraft Propulsion Assessment,” *Journal of Spacecraft and Rockets*, Vol. 48, No.1, Jan.-Feb. 2011.
- J44. **Rovey, J.L.**, Giacomi, M.P., Stubbers, R.A., and Jurczyk, B.E., “Plume Profiles of a Planar Crossed-field Thruster with Hall Current Injection,” *Journal of Propulsion and Power*, Vol. 25, No. 3, May-June 2009.
- J45. **Rovey, J.L.** and Gallimore, A.D., “Dormant Cathode Erosion in a Multiple-Cathode Gridded Ion Thruster,” *Journal of Propulsion and Power*, Vol. 24, No. 6, pp. 1361-1368, Nov.-Dec. 2008.
- J46. **Rovey, J.L.**, “Design Parameter Investigation of a Cold-Cathode Penning Ion Source for General Laboratory Applications,” *Plasma Sources Science & Technology*, Vol. 17, No. 3, 035009, Aug. 2008.
- J47. Gallimore, A.D., **Rovey, J.L.**, and Herman, D.A., “Erosion Processes of the Discharge Cathode Assembly of Ring-Cusp Gridded Ion Thrusters (Invited),” *Journal of Propulsion and Power*, Vol. 23, No.6, pp. 1271-1278, Nov.-Dec. 2007.
- J48. **Rovey, J.L.**, Ruzic, B.P., and Houlahan, T.J., “Simple Penning Ion Source for Laboratory Research and Development Applications,” *Review of Scientific Instruments*, Vol. 78, No. 10, Oct. 2007.
- J49. **Rovey, J.L.** and Gallimore, A.D., “Ion Energy Measurements Near a Dormant Cathode in a Multiple-Cathode Gridded Ion Thruster,” *Physics of Plasmas*, Vol. 14, No. 3, March 2007.
- J50. **Rovey, J.L.** and Gallimore, A.D., “Performance and Flatness of a Multiple-Cathode, Rectangular Ion Thruster Discharge Chamber,” *Journal of Propulsion and Power*, Vol. 23, No. 1, pp. 44-50, Jan.-Feb. 2007.
- J51. **Rovey, J.L.**, Walker, M.L.R., Peterson, P.Y., and Gallimore, A.D., “Magnetically Filtered Faraday Probe for Measuring the Ion Current Density Profile of a Hall Thruster,” *Review of Scientific Instruments*, Vol. 77, No. 1, Jan. 2006.

Book Chapters: * denotes my student/post-doc

- B1. **Rovey, J.L.** and Koizumi, H., “Dual-mode Propulsion Systems,” in *Next Generation CubeSats and SmallSats*, eds. F. Branz, C. Cappelletti, T. Sinn, A. Ricco, J. Hines, planned 2023 publication.
Invited chapter.

Conference Papers with a Presentation: * denotes my student/post-doc

- C1. Kim, J.*, Plomin, T.*, Arnett, H., Rosu, L., **Rovey, J.L.**, “Effect of Hands-on Kit on Student Knowledge, Self-Efficacy, and Interest in Space,” *ASEE Annual Conference*, Baltimore, MD., June 25-28, 2023.
- C2. Rasmont, N.*, Al-Rashdan, H.T., Elliott, G.S., **Rovey, J.L.**, Villafañe, L., “Tomographic measurements of ejecta cloud concentrations in plume-surface interactions using millimeter wave interferometry”, *AIAA SciTech Forum and Exposition*, AIAA-2023-0465, National Harbor, MD., Jan. 23-27, 2023.
- C3. Rao, A.*, Bhakyapaibul, T., **Rovey, J.L.**, Levin, D.A., and Chew, H.B., “Plume-Material Interactions of Metallic Surfaces Bombarded by an [EMIM][BF4] Electrospray Source,” *AIAA SciTech Forum and Exposition*, AIAA-2023-1407, National Harbor, MD., Jan. 23-27, 2023.
- C4. Lyne, C.T., Liu, M.,* **Rovey, J.L.**, Berg, S.P., “A Brief Review of Diagnostics for Electrospray Propulsion,” *AIAA SciTech Forum and Exposition*, AIAA-2023-0263, National Harbor, MD., Jan. 23-27, 2023.
- C5. Puri, R.,* Miley, G.H., **Rovey, J.L.**, Ziehm, E.P., Patino, R., Najam, R., “Characterizing Plasma Jet of HIIPER,” AIAA-2022-4272, *AIAA ASCEND*, Las Vegas, NV., Oct. 24-26, 2022.
- C6. Nuwal, N., Yamauchi, T.,* Levin, D.A., and **Rovey, J.L.**, “Experiments and kinetic modeling of multi-pole plasma with an applied pulse,” AIAA-2022-3267, *AIAA Aviation Forum and Exposition*, Chicago, IL, June 27-July 1, 2022.
- C7. Nishii, K., Clark, S.,* Tran, H., Levin, D.A., **Rovey, J.L.**, Chew, H.B., “Carbon Sputtering and Transportation in a Ground Facility during Electric Propulsion Testing,” AIAA-2022-3497, *AIAA Aviation Forum and Exposition*, Chicago, IL, June 27-July 1, 2022.
- C8. Walker, Jorns, Williams, Wirz, **Rovey, J.L.**, et al., “Overview of the Joint Advanced Propulsion Institute (JANUS),” *37th International Electric Propulsion Conference*, IEPC-2022-156, Boston, MA., June 19-22, 2022.
- C9. Clark, S.,* Tompkins, J.,* Nishii, K., Tran, H., **Rovey, J.L.**, Levin, D.A., Chew, H.B., “Development of Isotopic Carbon Labelling Diagnostic for Electric Propulsion,” *37th International Electric Propulsion Conference*, IEPC-2022-163, Boston, MA., June 19-22, 2022.
- C10. Lyne, C.T.,* Liu, M.,* and **Rovey, J.L.**, “A Low-Cost Linear Time-of-Flight Mass Spectrometer for Electrospray Propulsion Diagnostics,” *37th International Electric Propulsion Conference*, IEPC-2022-178, Boston, MA., June 19-22, 2022.
- C11. Ma, C., Messina, V., Ryan, C.N., **Rovey, J.L.**, Putnam, Z., Lembeck, M., Berg, S., “Plume Study of an Electrospray Thruster Using a HAN-Based Dual-Mode Ionic Liquid Propellant,” *37th International Electric Propulsion Conference*, IEPC-2022-190, Boston, MA., June 19-22, 2022.
- C12. Ma, C., Messina, V., Ryan, C.N., **Rovey, J.L.**, Putnam, Z., Lembeck, M., Berg, S., “Emission Characterization of Porous Electrospray Thrusters with Actively Controlled Flow Rate,” *37th International Electric Propulsion Conference*, IEPC-2022-191, Boston, MA., June 19-22, 2022.
- C13. Nishii, K., Clark, S.,* Levin, D.A., and **Rovey, J.L.**, “Numerical Simulation of Carbon Sputtering for Electric Propulsion in the Ground Facility,” *37th International Electric Propulsion Conference*, IEPC-2022-379, Boston, MA., June 19-22, 2022.
- C14. Adduci, A.C.,* **Rovey, J.L.**, Lyne, C.T.,* Putnam, Z.R., Lembeck, M.F., Ma, C., Ryan, C.N., Berg, S.P., “Characterization of Ionic Liquid Multimode Propellant Operating in a Porous Glass Electrospray Thruster,” *37th International Electric Propulsion Conference*, IEPC-2022-500, Boston, MA., June 19-22, 2022.
- C15. Yamauchi, T.,* Nuwal, N., **Rovey, J.L.**, and Levin, D.A., “Kinetic modeling and experiments of pulsed response of two noble gas plasma,” *37th International Electric Propulsion Conference*, IEPC-2022-587, Boston, MA., June 19-22, 2022.
- C16. Veeramraju, K.J.P., Eisen, J., **Rovey, J.L.**, Kimball, J.W., “A New Discontinuous Conduction Mode in a Transformer Coupled High Gain DC-DC Converter,” Paper 1079, *Applied Power Electronics Conference (APEC)*, Houston, TX., March 20-24, 2022.

- C17. Falcone, G., Engel, D., Ryan, C.N., **Rovey, J.L.**, Putnam, Z.R., Berg, S.P., Lembeck, M., “Mission Performance Assessment of Multimode Propulsion for Satellite Servicing Applications,” *IEEE Aerospace Conference*, Big Sky, MT., Mar. 5-12, 2022.
- C18. Sharma, A.,* Adduci, A.C.,* **Rovey, J.L.**, Putnam, Z.R., Lembeck, M.F., Ryan, C.N., Ma, C., Berg, S.P., “Green Ionic Liquid Multimode Monopropellant Microthruster,” AIAA-2022-1733, *AIAA SciTech Forum and Exposition*, Jan. 2022.
- C19. Cline, B.,* **Rovey, J.L.**, Berg, S.P., “Preliminary Screening of Multimode Spacecraft Propulsion Systems for Interplanetary Missions,” AIAA-2022-1354, *AIAA SciTech Forum and Exposition*, Jan. 2022.
- C20. Lyne, C.T.,* **Rovey, J.L.**, Berg, S.P., “Drying methods for [Emim]⁺ based ionic liquid electrospray propellants”, AIAA-2022-0038, *AIAA SciTech Forum and Exposition*, Jan. 2022.
- C21. Rasmont, N.,* Al-Rashdan, H.T., Elliott, G.S., **Rovey, J.L.**, Villafañe, L., “Millimeter Wave Interferometry for Ejecta Concentration Measurements in Plume-Surface Interactions,” AIAA-2022-2421, *AIAA SciTech Forum and Exposition*, Jan. 2022.
- C22. Eisen, J.G.,* Cline, B.C.,* Berg, S.P., **Rovey, J.L.**, “Power Processing Unit and Feed System Development for a Multimode Spacecraft Propulsion System,” *AIAA Propulsion and Energy Forum*, AIAA-2021-3428, Virtual Online, Aug. 9-11, 2021.
- C23. Lyne, C.T.,* **Rovey, J.L.**, Berg, S.P., “Monopropellant-Electrospray Multimode Thruster Testing Results: Electrospray Mode,” *AIAA Propulsion and Energy Forum*, AIAA-2021-3439, Virtual Online, Aug. 9-11, 2021.
- C24. Al-Rashdan, H.,* Villafane-Roca, L., **Rovey, J.L.**, and Elliott, G., “Static Wall Pressure Measurement of Supersonic Underexpanded Jet Impingement,” *AIAA Aviation Forum and Exposition*, AIAA-2021-2859, Virtual Online Event, Aug. 2-6, 2021.
- C25. Yamauchi, T.,* Nuwal, N., Sharma, A.,* Levin, D.A., **Rovey, J.L.**, “High Resolution Modeling and Experiments for Deeper Understanding of Plasma Dynamics,” AIAA-2021-0522, *AIAA SciTech Forum and Exposition*, virtual event, Jan. 11-15, 2021.
- C26. Klosterman, M.,* **Rovey, J.L.**, Levin, D.A., “Ion-Induced Electron Emission from Surfaces Bombarded by an EMIM-BF₄ Electrospray Plume,” AIAA-2021-1975, *AIAA SciTech Forum and Exposition*, virtual event, Jan. 11-15, 2021.
- C27. Berg, S.P., Glascock, M.S., Jones, F.B., and **Rovey, J.L.**, “Experimental and Modeling Results for the Chemical Mode of an Integrated Multimode Thruster,” *Joint Army Navy NASA Air Force (JANNAF) 10th Space Propulsion Joint Subcommittee Meeting*, Tampa, FL., 9-13 Dec., 2019.
- C28. Glascock, M.S.,* **Rovey, J.L.**, and Polzin, K.A., “Specific Impulse of Electric Solid Propellant in an Electrothermal Ablation-fed Pulsed Plasmas Thruster,” IEPC-2019-421, *36th International Electric Propulsion Conference*, Vienna, Austria, Sept. 15-20, 2019.
- C29. **Rovey, J.L.**, Lyne, C.T.,* Mundahl, A.J.,* Rasmont, N.,* Glascock, M.S.,* Wainwright, M.J.,* and Berg, S.P., “Review of Dual mode/Multimode Space Propulsion,” IEPC-2019-500, *36th International Electric Propulsion Conference*, Vienna, Austria, Sept. 15-20, 2019.
- C30. Glascock, M.S.,* **Rovey, J.L.**, and Polzin, K.A., “Impulse Measurements of Electric Solid Propellant in an Electrothermal Ablation-Fed Pulsed Plasma Thruster,” AIAA-2019-3904, *AIAA Propulsion & Energy Forum, 55th Joint Propulsion Conference*, Indianapolis, IN., Aug. 19-22, 2019.
- C31. Rasmont, N.,* Broemmelsiek, E.J.,* Mundahl, A.J.,* and **Rovey, J.L.**, “Linear Burn Rate of Ionic Liquid Multimode Monopropellant,” AIAA-2019-4294, *AIAA Propulsion & Energy Forum, 55th Joint Propulsion Conference*, Indianapolis, IN., Aug. 19-22, 2019.
- C32. **Rovey, J.L.**, Lyne, C.T.,* Mundahl, A.J.,* Rasmont, N.,* Glascock, M.S.,* Wainwright, M.J.,* and Berg, S.P., “Review of Chemical-Electric Multimode Space Propulsion,” AIAA-2019-4169, *AIAA Propulsion & Energy Forum, 55th Joint Propulsion Conference*, Indianapolis, IN., Aug. 19-22, 2019.
- C33. Wainwright, M.J.,* **Rovey, J.L.**, Miller, S.W., Prince, B.D., and Berg, S.P.,* “Hydroxylammonium Nitrate Species in a Monopropellant Electrospray Plume,” AIAA-2019-3899, *AIAA Propulsion & Energy Forum, 55th Joint Propulsion Conference*, Indianapolis, IN., Aug. 19-22, 2019.

- C34. Wainwright, M.J.*, **Rovey, J.L.**, Miller, S.W., and Prince, B.D., “Experimental Investigation of Mixtures of 1-Ethyl-3-Methylimidazolium Ethyl sulfate and Ethylammonium Nitrate with Electro Spray Propulsion Applications,” AIAA-2019-3900, *AIAA Propulsion & Energy Forum, 55th Joint Propulsion Conference*, Indianapolis, IN., Aug. 19-22, 2019.
- C35. Maser, J.N.* and **Rovey, J.L.**, “Dielectrophoretic Nanoparticle Injector for Photonic Manipulator System,” *SPIE Defense and Commercial Sensing*, Baltimore, MD, April 14-18, 2019.
- C36. Glascock, M.S.*, Drew, P.D., and **Rovey, J.L.**, “Thermodynamic and Transport Properties of Hydroxylammonium Nitrate-Based Electric Solid Propellant Vapor,” AIAA-2019-2070, *AIAA Science and Technology Forum and Exposition 2019 (SCITECH)*, San Diego, CA., Jan. 7-11, 2019.
- C37. Maser, J.N.* and **Rovey, J.L.**, “Dielectrophoretic Nanoparticle Propellant Injection with Plasmonic Acceleration,” *IEEE Research and Applications of Photonics in Defense (RAPID)*, Miramar Beach, FL., Aug. 22-24, 2018 (invited presentation and paper).
- C38. Glascock, M.S.* and **Rovey, J.L.**, “Electric Solid Propellant Ablation in a Pulsed Electric Thruster,” AIAA-2018-4818, *54th Joint Propulsion Conference*, Cincinnati, OH., July 9-11, 2018.
- C39. Mundahl, A.*, Berg, S.P.*, and **Rovey, J.L.**, “Linear Burn Rate of Multi-Mode Micropropulsion Monopropellant,” AIAA-2018-4970, *54th Joint Propulsion Conference*, Cincinnati, OH., July 9-11, 2018.
- C40. Wainwright, M.J.*, Miller S.W., Prince, B.D., Berg, S.P.*, and **Rovey, J.L.**, “Electrospray Mass Spectroscopy of a HAN-based Monopropellant,” AIAA-2018-4725, *54th Joint Propulsion Conference*, Cincinnati, OH., July 9-11, 2018.
- C41. Berg, S.P., **Rovey, J.L.**, Wainwright, M.J., “Ignition of an Electro Sprayable Monopropellant in a Submillimeter Catalytic Tube,” *Joint Army Navy NASA Air Force (JANNAF) 9th Space Propulsion Joint Subcommittee Meeting*, Long Beach, CA., May 21-24, 2018.
- C42. Glascock, M.S.* and **Rovey, J.L.**, “Ablation Mass Loss of an Electric Solid Propellant in a Pulsed Plasma Thruster,” IEPC-2017-376, *35th International Electric Propulsion Conference*, Atlanta, GA., Oct. 8-12, 2017.
- C43. Berg, S.P.* and **Rovey, J.L.**, “Ignition of Double Salt Ionic Liquid Monopropellant in a Microtube for Multi-Mode Micropropulsion Applications,” AIAA-2017-4755, *53rd Joint Propulsion Conference*, Atlanta, GA., July 10-12, 2017.
- C44. Mundahl, A.*, Berg, S.P.*, and **Rovey, J.L.**, “Characterization of a Novel Ionic Liquid Monopropellant for Multi-Mode Propulsion,” AIAA-2017-4756, *53rd Joint Propulsion Conference*, Atlanta, GA., July 10-12, 2017.
- C45. Berg, S.P.* and **Rovey, J.L.**, “Decomposition of a Double Salt Ionic Liquid Monopropellant on Heated Metallic Surfaces,” AIAA-2016-4578, *52nd Joint Propulsion Conference*, Salt Lake City, UT., July 25-27, 2016.
- C46. Glascock, M.S.*, **Rovey, J.L.**, Williams, S., Thrasher, J., “Observation of Late-Time Ablation in Electric Solid Propellant Pulsed Microthrusters,” AIAA-2016-4845, *52nd Joint Propulsion Conference*, Salt Lake City, UT., July 25-27, 2016.
- C47. Miller, S.W., Prince, B.D., Bemish, R.J., and **Rovey, J.L.**, “Mass Spectrometry of Selected Ionic Liquids in Capillary Electro Spray at Nanoliter Volumetric Flow Rates,” AIAA-2016-4740, *52nd Joint Propulsion Conference*, Salt Lake City, UT., July 25-27, 2016.
- C48. Mundahl, A.*, Berg, S.P.*, and **Rovey, J.L.**, “Linear Burn Rates of Monopropellants for Multi-Mode Micropropulsion,” AIAA-2016-4579, *52nd Joint Propulsion Conference*, Salt Lake City, UT., July 25-27, 2016.
- C49. Maser, J.N.*, **Rovey, J.L.**, Yang, X., Li, L., and Deng, H., “Fabrication of Asymmetric Nanostructures for Plasmonic Space Propulsion,” AIAA-2016-0696, *54th Aerospace Sciences Meeting*, San Diego, CA., Jan. 4-8, 2016.
- C50. Paliwoda, M.C.*, **Rovey, J.L.**, and Wainwright, M.*, “Control of Dielectric Barrier Discharge Striations,” AIAA-2016-0197, *54th Aerospace Sciences Meeting*, San Diego, CA., Jan. 4-8, 2016.

- C51. Berg, S.P.*, **Rovey, J.L.**, Prince, B.D., Miller, S.W.*, Bemish, R.J., “Electrospray of an Energetic Ionic Liquid Monopropellant for Multi-Mode Micropropulsion Applications,” AIAA-2015-4011, *51st Joint Propulsion Conference*, July 27-29, 2015.
- C52. Glascock, M.S.*, **Rovey, J.L.**, Williams, S., Thrasher, J., “Plasma Plume Characterization of Electric Solid Propellant Pulsed Microthrusters,” AIAA-2015-4185, *51st Joint Propulsion Conference*, July 27-29, 2015.
- C53. Berg, S.P.* and **Rovey, J.L.**, “Assessment of Multi-Mode Spacecraft Micropropulsion Systems,” AIAA-2014-3758, *50th Joint Propulsion Conference*, Cleveland, OH., July 28-30, 2014.
- C54. Berg, S.P.*, Coleman, B.*, and **Rovey, J.L.**, “Decomposition of Ionic Liquid Ferrofluids for Multi-Mode Spacecraft Propulsion,” AIAA-2014-3568, *50th Joint Propulsion Conference*, Cleveland, OH., July 28-30, 2014.
- C55. **Rovey, J.L.**, Yang, X., Friz, P.D.*, Hu, C., Glascock, M.S.*, “Plasmonic Force Propulsion for Small Spacecraft,” AIAA-2014-3757, *50th Joint Propulsion Conference*, Cleveland, OH., July 28-30, 2014.
- C56. Meeks, W.C.* and **Rovey, J.L.**, “Time-resolved Argon Theta-Pinch Plasma Properties by Line Ratio Method with Collisional-Radiative Model,” ICOPS-2014-7012731, *41st International Conference on Plasma Science*, Washington D.C., May 25-29, 2014.
- C57. Pahl, R.A.* and **Rovey, J.L.**, “Effect of a DC Preionization Source on Energy Deposition in a Pulsed Inductive Plasma,” ICOPS-2014-7012439, *41st International Conference on Plasma Science*, Washington D.C., May 25-29, 2014.
- C58. Friz, P.D.* and **Rovey, J.L.**, “Improving Plasma Actuator Efficiency at Low Pressure Through Geometric Variation,” AIAA-2014-0146, *52nd Aerospace Sciences Meeting*, National Harbor, MD., Jan 13-17, 2014.
- C59. Berg, S.P.* and **Rovey, J.L.**, “Assessment of High-Power Electric Multi-Mode Spacecraft Propulsion Concepts,” IEPC-2013-308, *33rd International Electric Propulsion Conference*, Washington D.C., Oct. 6-10, 2013.
- C60. Meeks, W.C.* and **Rovey, J.L.**, “Argon and Xenon Pulsed Theta-Pinch Plasma via Optical Emission Spectroscopy,” IEPC-2013-378, *33rd International Electric Propulsion Conference*, Washington D.C., Oct. 6-10, 2013.
- C61. Pahl, R.A.* and **Rovey, J.L.**, “Argon and Xenon Plasma Energy Analysis in a Pulsed Inductive Test Article,” IEPC-2013-362, *33rd International Electric Propulsion Conference*, Washington D.C., Oct. 6-10, 2013.
- C62. Berg, S.P.* and **Rovey, J.L.**, “Performance Analysis of an Integrated Multi-Mode Chemical Monopropellant Inductive Plasma Thruster,” AIAA-2013-3956, *49th Joint Propulsion Conference*, San Jose, CA., July 15-17, 2013.
- C63. Meeks, W.C.*, Pahl, R.A.*, and **Rovey, J.L.**, “Optical Emission Spectroscopy of Plasma Formation in a Xenon Theta Pinch,” PPC-2013-6627444, *19th IEEE Pulsed Power and Plasma Science Conference*, San Francisco, CA, June 16-21, 2013.
- C64. Pahl, R.A.*, **Rovey, J.L.**, and Pommerenke, D.J., “Calibration of Magnetic Field Probes at Relevant Magnitudes,” PPC-2013-6627649, *19th IEEE Pulsed Power and Plasma Science Conference*, San Francisco, CA, June 16-21, 2013.
- C65. Watkins, S.E., Robison, K.E., Nicholas, J.R., Taylor, G.A., Chandrashekhara K., and **Rovey, J.L.**, “Damage Assessment of Hydrokinetic Composite Turbine Blades Using Fiber Optic Sensors,” Paper 86742B, *Proceedings of the SPIE Vol. 8694, Smart Structures/NDE Conference*, San Diego, CA., Mar. 10-14, 2013.
- C66. Miller, S.W.*, Prince, B.D., and **Rovey, J.L.**, “Capillary Extraction of the Ionic Liquid [Bmim][DCA] for Variable Flow Rate Operations,” AIAA-2012-3738, *48th Joint Propulsion Conference*, Atlanta, GA., July 30 – Aug. 1, 2012.
- C67. Meeks, W.C.* and **Rovey, J.L.**, “Numerical and Experimental Efforts to Explain Delayed Gas Breakdown in Theta-Pinch Devices with Bias Magnetic Field,” AIAA-2012-3929, *48th Joint Propulsion Conference*, Atlanta, GA., July 30 – Aug. 1, 2012.

- C68. Heckman, A.J.*, **Rovey, J.L.**, Chandrashekhara, K., Watkins, S.E., Mishra, R., and Stutts, D.S., "Ultrasonic Underwater Transmission of Composite Turbine Blade Structural Health," Paper 8343-23, *SPIE Smart Structures/NDE Conference*, San Diego, CA., Mar. 11-13, 2012.
- C69. Robison, K.E., Watkins, S.E., Nicholas, J.R., Chandrashekhara K., and **Rovey, J.L.**, "Instrumented Composite Turbine Blade for Health Monitoring," Paper 8347-93, *SPIE Smart Structures/NDE Conference*, San Diego, CA., Mar. 11-13, 2012.
- C70. Berg, S.P.* and **Rovey, J.L.**, "Dual-Mode Propellant Properties and Performance Analysis of Energetic Ionic Liquids," AIAA-2012-0975, *50th Aerospace Sciences Meeting*, Nashville, TN., Jan 9-12, 2012.
- C71. Berg, S.P.* and **Rovey, J.L.**, "Ignition Evaluation of Imidazole-based Dual-Mode Ionic Liquid Monopropellants," AIAA-2012-0974, *50th Aerospace Sciences Meeting*, Nashville, TN., Jan 9-12, 2012.
- C72. Emanuel, M.D.*, Bristow, D.A. and **Rovey, J.L.**, "Force Sensing of an Asymmetric Dielectric Barrier Discharge Using Mechanical Resonators," AIAA-2012-0409, *50th Aerospace Sciences Meeting*, Nashville, TN., Jan 9-12, 2012.
- C73. Hu, Jing* and **Rovey, J.L.**, "Experimental Investigations of High Voltage Pulsed Pseudospark Discharge and Intense Electron Beams," AIAA-2012-0789, *50th Aerospace Sciences Meeting*, Nashville, TN., Jan 9-12, 2012.
- C74. Meeks, W.C.* and **Rovey, J.L.**, "Numerical Modeling of Pulsed Inductive Plasma Formation," AIAA-2012-0514, *50th Aerospace Sciences Meeting*, Nashville, TN., Jan 9-12, 2012.
- C75. Nichols, T.G.* and **Rovey, J.L.**, "Fundamental Processes of DBD Plasma Actuators Operating at High Altitude," AIAA-2012-0822, *50th Aerospace Sciences Meeting*, Nashville, TN., Jan 9-12, 2012. **2012 AIAA Plasmadynamics and Lasers Best Student Paper Award**
- C76. Pahl, R.A.* and **Rovey, J.L.**, "Pre-Ionization Plasma in an FRC Test Article," AIAA-2012-0194, *50th Aerospace Sciences Meeting*, Nashville, TN., Jan 9-12, 2012.
- C77. Satonik, A.J.* and **Rovey, J.L.**, "Modification of Boron Nitride Ceramic to Replicate Hall-effect Thruster Surface Wear," AIAA-2012-0198, *50th Aerospace Sciences Meeting*, Nashville, TN., Jan 9-12, 2012.
- C78. Meeks, W.C.*, Pahl, R.A.*, and **Rovey, J.L.**, "Investigation of Pre-Ionization Characteristics in Heavy Gas Pulsed Inductive Plasmas via Numerical Modeling," AIAA-2011-5655, *47th Joint Propulsion Conference*, San Diego, CA., July 31 – Aug. 3, 2011.
- C79. Pahl, R.A.*, Meeks, W.C.*, and **Rovey, J.L.**, "Magnetic Field Mapping of a Field Reversed Configuration Test Article," AIAA-2011-5656, *47th Joint Propulsion Conference*, San Diego, CA., July 31 – Aug. 3, 2011.
- C80. Zidar, D.G.* and **Rovey, J.L.**, "Hall-effect Thruster Channel Surface Properties Investigation," AIAA-2011-5993, *47th Joint Propulsion Conference*, San Diego, CA., July 31 – Aug. 3, 2011.
- C81. Pahl, R.A., Tutza, C.P., Pernicka, H.J., and **Rovey, J.L.**, "Design, Test, and Validation of a Refrigerant Based Cold-Gas Propulsion System for Small Satellites," 24th AIAA/USU Small Satellite Conference, Logan, UT, Aug. 9-12, 2010.
- C82. Ferry, J.W.* and **Rovey, J.L.**, "Thrust Measurement of Dielectric Barrier Discharge Plasma Actuators and Power Requirements for Aerodynamic Control," AIAA-2010-4982, *5th Flow Control Conference*, Chicago, IL, June 28 – July 1, 2010.
- C83. Miller, S.W.* and **Rovey, J.L.**, "Pulse Discharge Network Development for a Heavy Gas Field Reversed Configuration Plasma Device," AIAA-2010-0626, *48th Aerospace Sciences Meeting*, Orlando, FL, Jan. 4-7, 2010.
- C84. Donius, B.R.* and **Rovey, J.L.**, "Analysis and Prediction of Dual-Mode Chemical and Electric Ionic Liquid Propulsion Performance," AIAA-2010-1328, *48th Aerospace Sciences Meeting*, Orlando, FL, Jan. 4-7, 2010.
- C85. Miller, S.W.* and **Rovey, J.L.**, "Progress in Modeling of Pre-ionization and Geometric Effects on a Field-Reversed Configuration Plasma Thruster," AIAA-2009-3733, *40th Plasmadynamics and Lasers Conference*, San Antonio, TX, June 22-25, 2009.

- C86. **Rovey, J.L.**, Stubbers, R.A., Jurczyk, B.E., Williams, M.J., Manley, F.T., and Ruzic, D.N., "Plasma Properties in the Magnetic Nozzle of an Electron Cyclotron Resonance Plasma Source," AIAA-2008-5191, *44th Joint Propulsion Conference*, New Haven, CT, July 21-23, 2008.
- C87. Alman, D.A., **Rovey, J.L.**, Stubbers, R.A., and Jurczyk, B.E., "Hall Thruster Electron Mobility Investigation using Full 3D Monte Carlo Electron Trajectories," IEPC-2007-291, *30th International Electric Propulsion Conference*, Florence, Italy, Sept. 17-20, 2007.
- C88. **Rovey, J.L.**, Giacomini, M.P., Stubbers, R.A., and Jurczyk, B.E., "A Planar Hall Thruster for Investigating Electron Mobility in ExB Devices," IEPC-2007-187, *30th International Electric Propulsion Conference*, Florence, Italy, Sept. 17-20, 2007.
- C89. Stubbers, R.A., Jurczyk, B.E., **Rovey, J.L.**, Walker, M.L.R., Alman, D.A., and Coventry, M.D., "Compact Toroid Formation Using an Annular Helicon Preionization Source," AIAA-2007-5307, *43rd Joint Propulsion Conference*, Cincinnati, OH, July, 2007.
- C90. Stubbers, R.A., Jurczyk, B.E., Sander, J.J., Brenner, P.W., Wilson, J.A., Coventry, M.D., **Rovey, J.L.**, and Alman, D.A., "Lithium Purification System Development for Long-life Lithium-fed Lorentz Force Accelerators," AIAA-2007-5282, *43rd Joint Propulsion Conference*, Cincinnati, OH, July, 2007.
- C91. Gallimore, A.D., **Rovey, J.L.**, and Herman, D.A., "Erosion Processes of the Discharge Cathode Assembly of Ring-Cusp Gridded Ion Thrusters (Invited)," AIAA-2006-3558, *36th Fluid Dynamics Conference*, San Francisco, CA, June 5-8, 2006.
- C92. **Rovey, J.L.**, Herman, D.A., and Gallimore, A.D., "Potential Structure and Propellant Flow Rate Theory for Ion Thruster Discharge Cathode Erosion," IEPC-2005-022, *29th International Electric Propulsion Conference*, Princeton, NJ, Oct. 31- Nov. 4, 2005.
- C93. **Rovey, J.L.** and Gallimore, A.D., "Dormant Cathode Plasma Properties in a Multiple-Cathode, High-Power, Rectangular Discharge Chamber," AIAA-2005-4241, *41st Joint Propulsion Conference*, Tucson, AZ, July 10-13, 2005.
- C94. **Rovey, J.L.** and Gallimore, A.D., "Design and Operation of a Multiple-Cathode, High-Power, Rectangular Discharge Chamber," AIAA-2005-4407, *41st Joint Propulsion Conference*, Tucson, AZ, July 10-13, 2005.
- C95. **Rovey, J.L.**, Walker, M.L.R., Peterson, P.Y., and Gallimore, A.D., "Evaluation of a Magnetically-Filtered Faraday Probe for Measuring the Ion Current Density Profile of a Hall Thruster," AIAA-2004-3948, *40th Joint Propulsion Conference*, Fort Lauderdale, FL, July 11-14, 2004.

Conference Presentation (abstract + presentation only, no paper): * denotes my student/post-doc

1. Clark, S.A.*, **Rovey, J.L.**, Concentration Analyses for Carbon Transport During Electric Propulsion Wear Tests," #412, *50th International Conference on Plasma Science*, Santa Fe, NM., May 21-25, 2023.
2. Nuwal, N., Azevedo, V.A., Klosterman, M.R.,* Levin, D.A., **Rovey, J.L.**, "Multiscale Modeling of Electrospray Thrusters with Particle-in-Cell and Molecular Dynamics," *32nd International Symposium on Rarefied Gas Dynamics*, Seoul, South Korea, July 4-8, 2022.
3. Sharma, A., Adduci, A.C., Putnam, Z.R., Lembeck, M.F., **Rovey, J.L.**, Berg, S.P., Ryan, C.N., "Green Ionic Liquid Multimode Monopropellant Based Chemical Micro-thruster Using Additive Manufacturing," *AIAA Propulsion and Energy Forum*, Virtual Online, Aug. 9-11, 2021.
4. Nakul, N., Azevedo, V.A., Budaraju, S., Klosterman, M.R.,* Levin, D.A., **Rovey, J.L.**, "Kinetic modeling of the plume of an electrospray thruster," *AIAA Propulsion and Energy Forum*, Virtual Online, Aug. 9-11, 2021.
5. Nakul, N., Azevedo, V.A., Klosterman, M.R.,* Levin, D.A., **Rovey, J.L.**, "Kinetic modeling of electrospray thrusters with Particle-in-Cell and Molecular Dynamics," *Pre-Rarefied Gas Dynamics Workshop*, Virtual Online, July 4-8, 2021.
6. Paliwoda, M.C.* and **Rovey, J.L.**, "Digital Control of Multiple Plasma Columns in a 2D Plasma Photonic Crystal," *Directed Energy Science & Technology Symposium*, West Point, NY, Mar. 22-26, 2021.

7. Azevedo, V., Levin, D.A., **Rovey, J.L.**, “All Atom Molecular Dynamics Electrospray Simulations of 1-Ethyl-3-Methylimidazolium Tetrafluoroborate [Emim-BF₄],” *AIAA SciTech Forum and Exposition*, virtual event, Jan. 11-15, 2021.
8. Berg, S. P., Glascock, M. S., Cooper, M., and **Rovey, J. L.**, “Multimode Integrated Monopropellant Electrospray Thruster Testing Results: Chemical Mode,” *NASA In-Space Chemical Propulsion Technical Interchange Meeting*, Sept. 14-18, 2020
9. Paliwoda, M.C.* and **Rovey, J.L.**, “Periodic Filamentary Plasma Reconfigurable Metamaterial,” *Directed Energy Science & Technology Symposium*, West Point, NY, Mar. 9-13, 2020.
10. Gill, Z.A.* and **Rovey, J.L.**, “A Computational Model for Predicting Gas Breakdown,” *59th APS Division of Plasma Physics Meeting*, DPP17-2017-GP11.00150, Milwaukee, WI., Oct. 23-27, 2017.
11. Berg, S.P.* and **Rovey, J.L.**, “Development of a Multi-Mode Integrated Monopropellant-Electrospray Thruster for Flexible Small Satellite Propulsion,” *31st Annual AIAA/USU Conference on Small Satellites*, Logan UT., Aug. 6-11, 2017.
12. Berg, S.P.* and **Rovey, J.L.**, “Design and Development of a Multi-Mode Monopropellant-Electrospray Micropropulsion System,” *30th Annual AIAA/USU Conference on Small Satellites*, Logan UT., Aug. 6-11, 2016.
13. Hu, Jing* and **Rovey, J.L.**, “Experimental Results on High-Energy Pseudospark-Produced Electron Beam,” *52nd APS Division of Plasma Physics Meeting*, DPP10-2010-001559, Chicago, IL, Nov. 8-12, 2010.
14. Hu, Jing*, **Rovey, J.L.**, and Kovaleski, S.D., “The Research on a High-Energy Pseudospark-Produced Electron Beam,” *51st APS Division of Plasma Physics Meeting*, DPP09-2009-001316, Atlanta, GA, Nov. 2-6, 2009.
15. Jurczyk, B.E., Stubbers, R.A., Alman, D.A., **Rovey, J.L.**, and Coventry, M.D., “Experimental Results of an Addressable Xenon Microdischarge EUV Source Array for HVM Lithography,” *Society of Photo-Optical Instrumentation Engineers (SPIE) Advanced Lithography Conference*, San José, CA., February 25 - March 2, 2007.
16. Jurczyk, B.E., Alman, D.A., **Rovey, J.L.**, and Stubbers, R.A., “Distributed EUV Source-Optic Architecture for HVM Using Micro-Plasma Arrays,” *International Symposium on Extreme Ultraviolet Lithography (EUVL)*, Barcelona, Spain, October 15-18, 2006.
17. Jurczyk, B.E., Stubbers, R.A., Alman, D.A., and **Rovey, J.L.**, “A Novel, Low-Power EUV Source-Optic Architecture,” *Extreme Ultraviolet (EUV) Source Workshop*, Vancouver, British Columbia, Canada, May 25, 2006.

Other Publications:

Rovey, J.L., “2009 Electric Propulsion Year in Review,” *AIAA Magazine Aerospace America*, Vol. 12, pp. 52-55, 2009.

Patents:

1. Berg, S.P. and **Rovey, J.L.**, “Electrical/Chemical Thruster Using the Same Monopropellant and Method”, Patent No. 10,180,118 Issued Jan. 15, 2019.
2. Gallimore, A.D. and **Rovey, J.L.**, “Gas-Fed Hollow Cathode Keeper and Method of Operating Same,” United States Letters Patent No. 7,791,260 Issued Sept. 10, 2010.

Invited Presentations / Seminars:

1. “Monoprop-Electrospray Propulsion (MEPS): Lunar Missions Enabled by Chemical-Electrospray Propulsion,” Rovey, J.L., NASA Smallsat Technology Program Technology Expo, Virtual Online, June 8, 2022.

2. "Predicting Electro Spray Thruster Emissions Through Fundamental Modeling and Measurements," Levin, D.A. and Rovey, J.L., Electro Spray Propulsion Workshop: Physics and Challenges for Efficiency II EP-12, *AIAA SciTech*, San Diego, CA, Jan. 4, 2022.
3. "Flexibility and Adaptability of Multimode Micropropulsion," IllinoisX Space Technology Seminar, Feb. 3, 2021.
4. "Electro Spray Plume-Surface Electron Emission," Aerospace Engineering Graduate Seminar, Univ. of Illinois Urbana-Champaign, Feb. 1, 2021.
5. "Monoprop-Electro Spray Multimode Space Propulsion," Lockheed Martin Brown Bag Seminar, Advanced Technology Center, Palo Alto, CA., Nov. 4, 2020.
6. "UIUC Electric Propulsion Lab," NASA Glenn Research Center, Cleveland, OH., Aug. 7, 2019.
7. "Multi-Mode Micropropulsion," International Workshop on Micropropulsion and CubeSats, George Washington University, Washington DC., July 31-Aug 1, 2018.
8. "Monopropellant for Multi-Mode Micropropulsion," Monopropellants for Rocket Propulsion, an Invited Session on Propellants and Combustion, *53rd Joint Propulsion Conference*, AIAA Propulsion & Energy Forum, Atlanta, GA., July 12, 2017.
9. "Multi-Mode Micropropulsion," MPCS 2017, International Workshop on Micropropulsion and CubeSats, Bari, Italy, June 26-27, 2017.
10. "Multi-Mode Micropropulsion," Aerospace Engineering Graduate Seminar, Univ. of Illinois Urbana-Champaign, Feb. 2, 2017.
11. "Ionization in Solid Electric Propellant Thruster Plumes," Digital Solid State Propulsion, 6th Technical Exchange Meeting, Reno, NV, Feb. 24-25, 2016.
12. "Small Satellite Program at Missouri S&T," Pernicka, H.J., Rovey, J.L., Sandia National Laboratory, Albuquerque, NM., Jan 19, 2016.
13. "Pulsed Inductive Preionization for High-Power Electric Propulsion," Aerospace Engineering Graduate Seminar, Univ. of Illinois Urbana-Champaign, Dec. 12, 2013.
14. "Future Advanced Electric Space Propulsion," Missouri S&T Space-Week Outreach Event, Rolla, MO., Nov. 5th, 2013.
15. "Design and Development of Dual-Mode Ionic Liquid Spacecraft Propellants," NASA Ames Research Center, Computational Chemistry Seminar, Mountain View, CA, July 17, 2013.
16. "Dielectric Barrier Discharge Plasma Actuators Operating at High Altitude," Boeing Active Flow Control Group Seminar, St. Louis, MO, May 31, 2012.
17. "Field-Reversed Configuration Electric Propulsion for High-Power Spacecraft," Mechanical & Aerospace Engineering Seminar, Univ. Alabama-Huntsville, March 15, 2012.
18. "Missouri S&T's Role in Developing High-Power Advanced Space Propulsion," presented to University of Missouri Board of Curators, Rolla, MO., March 22, 2011. Pahl, R. student presenter.
19. "Research Activities of the Missouri S&T Aerospace Plasma Laboratory," Air Force Research Laboratory, Edwards Air Force Base, CA, March 29, 2010.
20. "Deep Space Propulsion Systems," Missouri S&T Physics Colloquium, Rolla, MO., Jan. 28, 2010.
21. "Methods for Increasing Electric Propulsion Ion Thruster Lifetime," University of Missouri-Rolla, Mechanical & Aerospace Engineering Seminar, April 22, 2007.
22. "Magnetic Field Topography Design of a Multiple-Cathode Ion Thruster Discharge Chamber," NASA Glenn Research Center, Cleveland, OH., March 26, 2004.

Courses Taught:

Introduction to Aerospace Engineering (UG)
 Air & Space Vehicle Propulsion (UG)
 Aerospace Propulsion (UG/G)
 Gas Dynamics (G)
 Electric Space Propulsion (UG/G)

Incompressible Flow (UG)
 Experimental Methods for Aerospace Eng. (UG)
 Plasma Physics (UG/G)
 Physical Gas Dynamics (G)

Honors and Awards:

2023 Provost UIUC Campus Award for Excellence in Undergraduate Teaching
2017 Missouri S&T Faculty External Recognition Award
2016 Missouri S&T Faculty Excellence Award
2016 Missouri S&T College of Engineering Dean's Scholar
2016 AIAA National Lawrence B. Sperry Young Professional Award
2015 AIAA St. Louis Section Service Award
2014 Missouri S&T Faculty Research Award
2013 NASA Innovative Advanced Concepts Fellow (Phase I and II)
2012 Missouri S&T Faculty Research Award
2012 AIAA Plasmadynamics and Lasers Best Student Paper Award (student: Timothy Nichols)
2011 AIAA St. Louis Section Young Professional Award
2010 Missouri S&T Outstanding Teaching Award (AY 2009-2010)
2010 Missouri S&T Academy of Mechanical & Aerospace Engineers Faculty Excellence Award
2010 Air Force Office of Scientific Research Young Investigator Award
2008 Missouri Life Sciences Research Award
2005 Michigan Space Grant Consortium Graduate Fellow
2003 University of Michigan Dobbins Graduate Fellow
2002 University of Michigan Edward A. Stalker Undergraduate Research Fellow
2001 Sigma Gamma Tau (Aerospace Honor Society)

Professional Service Activities:

- Director, Illinois Space Grant Consortium (Jan. 2019 – Present)
 - <http://isgc.aerospace.illinois.edu/>
 - Member – Nominating Committee (2020 – present)
- Associate Fellow, American Institute of Aeronautics and Astronautics (AIAA), Lifetime Member
 - Associate Editor, Journal of Propulsion and Power (2022 – present)
 - Deputy Technical Chair for Propulsion, Propulsion and Energy Forum, Atlanta 2017
 - AIAA Publications Committee (2020 – present)
 - Ethics Subcommittee (2020 – present)
 - Liaison to TAD Forums Integration Subcommittee (2023 – present)
 - AIAA Electric Propulsion Technical Committee (2014 – present)
 - Liaison to SmallSat TC
 - EP Technical Achievement Award Committee
 - Technical Area Organizer, Propulsion and Energy Forum, Atlanta 2017
 - Technical Area Organizer, Propulsion and Energy Forum, Salt Lake City 2016
 - Secretary 2014-2015, 2021-present
 - Aerospace America Year-in-Review Author, 2009
 - Propulsion and Energy Forum Session Chairman
 - AIAA Plasmadynamics & Lasers Technical Committee (2010 – 2015)
 - Secretary 2010-2012
 - SciTech Conference Session Chairman
 - Plasmadynamics and Lasers Conference Session Chairman
- Member, Electric Rocket Propulsion Society (ERPS)
 - Poster Session Organizer, International Electric Propulsion Conference, Atlanta 2017
 - International Electric Propulsion Conference Session Chairman
- Member, American Society for Engineering Education
- Service to International Journals

- AIAA Journal of Propulsion and Power
 - Associate Editor (2022 – present)
- Journal of Small Spacecraft
 - Technical Area Editor (2020 – present)
- Frontiers in Space Technologies – Advanced Space Propulsion
 - Member of the Editorial Board
 - Review Editor (2020 – present)
- Aerospace
 - Member of the Editorial Board (2020 – 2022)
 - Invited Guest Editor Special Issue “Alternative Propellants for Space Propulsion”

Department and University Service Activities:

At University of Illinois

Aerospace Engineering Department

- Advisory Committee (2019 – 2021)
- Space Allocation Committee (2018 – 2019)
- AFMCP (fluids group), Chair (2018 – 2021)
- DoEd Graduate Assistance in Areas of National Need (GAANN) Program Director (2018 – 2022)
- Spacecraft Lab Manager Search Committee, Chair (2018, result: M. Stratton)
- Graduate Admissions Committee (2017 – 2018, Chair 2020 – 2022)
- Graduate Policy Committee (2017 – 2020, Chair 2022 – present)
- Non-thesis MS Graduate Advising (2017 – 2019, 2021 – 2022)
- Curriculum Committee AE202 (2017 – 2019)
- Professor of Practice Search Committee, Chair (2021 – 2022)
- Fluids Lab Manager Search Committee (2022, result: D. Attig)
- Promotion & Tenure Committee (2023 – present)

Grainger College of Engineering

- Working Group for the GCoE Instructional Facility (2017 – 2019)
- Executive Committee, Alternate for D. Levin (2019 – 2023)

At Missouri S&T

- MAE Associate Chair for Graduate Affairs (2016 – 2017)
- AIAA Student Branch Faculty Advisor (2011 – 2017)
- Member, MAE Department Graduate Committee (2015 – 2017)
- Member, Missouri S&T Faculty Research Award Committee (2015 – 2017)
- Member, MAE Dept. Space Systems Faculty Search Committee (2016 – 2017) (result: Han)
- Chairman, Aerospace Technical Committee (2014 – 2016)
- Chairman, MAE Department Graduate Seminar Committee (2010 – 2016)
- Member, MAE Dept. Aero Structures Faculty Search Committee (2014 – 2015) (result: Wojnar)
- Member, MAE Department Faculty Hiring Task Force (2013 – 2014)
- Member, MAE Dept. Thermal-Fluids Faculty Search Committee (2012 – 2013) (result: Duan, Wang)
- Member, MAE Department Chairman Search Committee (2009 – 2010) (result: Drallmeier)
- Missouri S&T Undergraduate Research Conference Judge (every Spring, 2008 – 2017)

Post-Doctoral Fellows and Visiting Scholars:

1. Sharma, A., Postdoctoral Researcher, Ph.D. Purdue Univ., “One-Size-Fits-Most Space Propulsion,” DARPA, Nov. 2020 – Feb. 2022. Currently research engineer Indian Institute of Technology - Delhi.
2. Minkwan Kim, Visiting Scholar from University of Southampton, UK, sponsored by the Royal Society International Exchange, “Electrical Modeling of Discharge Transition in Atmospheric Dielectric Barrier Discharge,” Summer 2018.
3. Berg, S.P., Postdoctoral Researcher, Ph.D. Missouri S&T, “Multi-Mode Micropropulsion,” sponsored by the Intelligence Community Postdoctoral Research Program, Office of the Director of National Intelligence, managed by the Oak Ridge Institute for Science and Education, Dec. 2017 – July 2018. Currently Tenure-track Assistant Professor, MAE Dept., Rutgers University, NJ., and CEO of Froberg Aerospace LLC.
4. Berg, S.P., Postdoctoral Researcher, Ph.D. Missouri S&T, “Development of a Multi-Mode Micropropulsion System,” Jan. 2015 – June 2016. Currently Tenure-track Assistant Professor, MAE Dept., Rutgers University, NJ., and CEO of Froberg Aerospace LLC.

Doctoral Students Graduated:

1. Paliwoda, M.C., “Improvements on Dielectric Barrier Discharge Applications: Plasma Photonic Crystal Tuning by Individual Filament Control and Surface DBD Water Treatment,” Aerospace Engineering, University of Illinois, Dec. 2022. Currently Plasma Research Engineer, Naval Research Lab, Washington DC.
2. Wainwright, M.J., “Experimental Investigation of Ionic Liquid Mixtures for Electrospray Propulsion,” Mechanical and Aerospace Engineering, Missouri S&T, May 2020. Currently Nuclear Safety Engineer Sandia National Lab, Albuquerque, NM.
3. Maser, J., “Study of Optical Propulsion Concepts and Techniques for Small Satellites,” Mechanical and Aerospace Engineering, Missouri S&T, Dec. 2019. Currently Space Environment Engineer, Lockheed Martin, Palo Alto, CA.
4. Glascock, M.S., “Characterization of a Green Electric Solid Propellant for Electric Propulsion,” Mechanical and Aerospace Engineering, Missouri S&T, Dec. 2019. Currently Research Engineer ExoTerra Resource LLC, Littleton, CO.
5. Berg, S.P., “Development of Ionic Liquid Multi-Mode Spacecraft Micropropulsion Systems,” Mechanical and Aerospace Engineering, Missouri S&T, Dec. 2015. Currently Tenure-track Assistant Professor, MAE Dept., Rutgers University, NJ.
6. Meeks, W.C., “Pulsed Inductive Plasma Studies by Spectroscopy and Internal Probe Methods,” Mechanical and Aerospace Engineering, Missouri S&T, July 2015. Currently Assistant Teaching Professor of Mechanical and Aerospace Engineering, Missouri University of Science and Technology, Rolla, MO.
7. Miller, S.W., Research Topic “Analysis of Ion Emitting Jet Structures During Ionic Liquid Electrospraying,” Mechanical and Aerospace Engineering, Missouri S&T, May 2015. Currently Research Engineer, AFRL Kirtland AFB, Albuquerque, NM
8. Pahl, R.A., “Energy Deposition into Heavy Gas Plasma via Pulsed Inductive Theta-Pinch,” Mechanical and Aerospace Engineering, Missouri S&T, Dec. 2014. Currently Scientist I at Raytheon Ktech, Albuquerque NM.
9. Hu, Jing, “Experimental Investigations of Pseudospark Discharge and Pseudospark Produced Intense Electron Beams,” Mechanical and Aerospace Engineering, Missouri S&T, Dec. 2012. Currently Tenure Track Assistant Professor in Mechanical Engineering, Shanghai Jiao Tong University, Shanghai, China.

Doctoral Students in Progress:

1. Lyne, C., “Plumes and propellants in electrospray thrusters,” Aerospace Engineering, University of Illinois, Prelim Jan 2023 (F18 –).

2. Yamauchi, T., “Experiments on Plasma Dynamics,” Aerospace Engineering, University of Illinois, Post-quals (F19 –).
3. Rasmont, N., (co-advised with L.Villafane-Roca), “Chemical rocket plume surface interactions,” Aerospace Engineering, University of Illinois, Post-quals (F20 –).
4. Cline, B., (co-advised with R. Woollands) “Multimode propulsion mission analysis”, Aerospace Engineering, University of Illinois, Post-quals (F20 –).
5. Puri, R., (co-advised with G. Miley), “Helicon-Inertial Electrostatic Confinement Thruster,” Aerospace Engineering, University of Illinois, Post-quals (S21 –).
6. Tompkins, J., “Alternative Propellants in Microwave ECR Gridded Ion Thruster”, Aerospace Engineering, University of Illinois, Post-quals (F21 –).
7. Clark, S., “Carbon transport in Hall-effect thruster test facilities,” Aerospace Engineering, University of Illinois, Post-quals (F21 –).
8. Timm, A., “Facility Effects Investigation with Standardized Plume Probe Package,” Aerospace Engineering, University of Illinois, Pre-quals (F22 –).
9. Leeming, A., “Embedded sensors and diagnostics in Hall-effect thrusters,” Aerospace Engineering, University of Illinois, Pre-quals (F22 –).
10. Myers, C., (co-advised with D. Levin), Aerospace Engineering, University of Illinois, Pre-quals (F23 –).
11. Thompson, R., Aerospace Engineering, University of Illinois, Pre-quals (F23 –)

Master’s Students Graduated:

1. Plomin, T., “Development and Efficacy of an Introduction to Rocketry Course on Student Knowledge and Interest in Aerospace for Expanding the Pipeline and Enhancing Education of Students Pursuing Careers in Space,” Aerospace Engineering, University of Illinois, Aug 2023. Currently aerospace engineer with Northrop Grumman, Huntsville, AL.
2. Kim, J., “Development, Implementation, and Impact of a Blended Rocketry Course: A Study on Student Efficacy and Career Interest for Expanding the Pipeline and Enhancing Education of Students Pursuing Careers in Space,” Aerospace Engineering, University of Illinois, Aug 2023. Currently aerospace engineer with Boeing, Houston, TX.
3. Adduci, A., “Characterization of a Multimode Propellant Operating in a Porous Glass Electrospray Thruster,” Aerospace Engineering, University of Illinois, May 2023. Currently Aerospace Engineer with Northrop Grumman, Chicago, IL.
4. Eisen, J., “Electrospray Power Processing Unit for a Monopropellant-Electrospray Multimode Thruster,” Aerospace Engineering, University of Illinois Urbana-Champaign, Dec. 2022.
5. Broemmelsiek, E.J., “Effect of Metal Sequestrants on the Decomposition of Hydroxyl-ammonium Nitrate,” Aerospace Engineering, University of Illinois Urbana-Champaign, Dec. 2021. Currently Senior Technical Support Staff at Electric Propulsion and Plasmadynamics Lab, Princeton University.
6. Klosterman, M., “Ion-Induced Charge Emission from Surfaces Bombarded by an [EMIM][BF4] Electrospray Plume,” Aerospace Engineering, University of Illinois Urbana-Champaign, Aug. 2021. Currently Aerospace Engineer at Intuitive Machines, Houston TX.
7. Rasmont, N., “Linear Burn Rate of Green Ionic Liquid Multimode Monopropellant,” Aerospace Engineering, University of Illinois Urbana-Champaign, Dec. 2019. Currently my PhD student.
8. Gill, Z.A., (co-advised with Han) “Developing Computational Models for Pulsed-Inductive Plasma Formation,” Mechanical and Aerospace Engineering, Missouri S&T, Dec. 2018. Currently Aerospace Engineer at CymSTAR LLC, Broken Arrow OK.
9. Taylor, A.P., (co-advised with Duan) “Development of a CFD Model of the Catalytic Combustion of a Microtube Multi-mode Propulsion System,” Mechanical and Aerospace Engineering, Missouri S&T, Dec. 2018. Currently Engineer with NAVAIR China Lake, CA.

10. Mundahl, A.J., "Characterization of Ionic Liquid Monopropellants for a Multi-mode Propulsion System," Mechanical and Aerospace Engineering, Missouri S&T, Dec. 2017. Currently propulsion engineer, Aerojet Rocketdyne, Seattle, WA.
11. Hanna, J.D., (co-advised with Pernicka) "Liquid Pulsed Plasma thruster Plasma Plume Investigation and MR-SAT Cold Gas Propulsion System Performance Analysis," Mechanical and Aerospace Engineering, Missouri S&T, May 2017. Currently Aerospace Engineer at Boeing, Oklahoma City, OK.
12. Glascock, M.S., "Characterization of Electric Solid Propellant Pulsed Microthrusters," Mechanical and Aerospace Engineering, Missouri S&T, Dec. 2016. Currently research engineer, ExoTerra Corp, Littleton, CO.
13. Paliwoda, M.C., "Intensity Control of Dielectric Barrier Discharge Filaments," Mechanical and Aerospace Engineering, Missouri S&T, July 2016. Currently my PhD student.
14. Friz, P.D. "Improving Plasma Actuator Performance at Low Pressure and An Analysis of the Pointing Capabilities of Cubesats using Plasmonic Force Propulsion (PFP) Thrusters," Mechanical and Aerospace Engineering, Missouri S&T, May 2014. Currently NASA engineer, Langley, VA.
15. Satonik, A.J., "Manual Modification and Plasma Exposure of Boron Nitride Ceramic to Study Hall Effect Thruster Plasma Channel Material Erosion," Mechanical and Aerospace Engineering, Missouri S&T, May 2013. Currently at NAVAIR, China Lake, CA.
16. Meeks, W.C., "On the Anomalous Breakdown Physics in a Ringing Theta-pinch with Bias Magnetic Field," Mechanical and Aerospace Engineering, Missouri S&T, Dec. 2012. Currently Assistant Teaching Professor of Mechanical and Aerospace Engineering, Missouri University of Science and Technology, Rolla, MO.
17. Emanuel, M.D. (co-advised with Bristow), "Time-resolved Force Measurement of a Plasma Actuator using Resonant Mechanical Amplification," Mechanical and Aerospace Engineering, Missouri S&T, Dec. 2012. Currently at Nordyne, St. Louis.
18. Heckman, A.J., "Ultrasonic Communications System for Health Monitoring of Hydrokinetic Turbine Blades," Mechanical and Aerospace Engineering, Missouri S&T, Aug. 2012. Currently at Boeing, St. Louis.
19. Nichols, T.G., "Fundamentals of High-altitude Plasma Actuator Force Degradation," Mechanical and Aerospace Engineering, Missouri S&T, Aug. 2012. Currently at Boeing Phantom Works, St. Louis.
20. Berg, S.P., "Imidazole-based Ionic Liquids as Dual-Mode Spacecraft Propellants," Mechanical and Aerospace Engineering, Missouri S&T, May 2012. Currently CEO of Froberg Aerospace LLC.
21. Zidar, D.G., "Hall-effect Thruster Surface Properties Investigation" Mechanical and Aerospace Engineering, Missouri S&T, May 2011. Currently at Boeing, St. Louis.
22. Gaither, J.B., "Numerical Comparison of Thermal and Kinetic Modification of Hydrogen and Oxygen", Mechanical and Aerospace Engineering, Missouri S&T, May 2011. Currently at Spirit AeroSystems.
23. Ferry, J.W., "Thrust Measurement of Dielectric Barrier Discharge Plasma Actuators and Power Requirements for Aerodynamic Control", Mechanical and Aerospace Engineering, Missouri S&T, May 2010. Currently a pastor/minister in Indiana.
24. Donius, B.R., "Investigation of Dual-Mode Spacecraft Propulsion by Means of Ionic Liquids", Mechanical and Aerospace Engineering, Missouri S&T, May 2010. Currently at Rolls-Royce Indianapolis.

Masters Students in Progress:

1. Rao, A., Aerospace Engineering, University of Illinois, anticipated Dec 2023 (Su21)