



Jason Cassibry

Associate Professor

Department of Mechanical and
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BIO:

Dr. Jason Cassibry is an associate professor in the Department of Mechanical and Aerospace Engineering and affiliated with the Propulsion Research Center at the University of Alabama in Huntsville. He was the UAHuntsville Distinguished Research Award recipient in May 2010, in recognition of outstanding contributions in research and Outstanding Junior Professor for College of Engineering, February 2010, in recognition of outstanding contributions in both research and teaching as an assistant professor. His research involves thermonuclear fusion for interplanetary propulsion and terrestrial power and fundamental studies of plasmas with application to acceleration and implosion dynamics. Specific research areas include magneto-inertial fusion, MHD modeling, smoothed particle hydrodynamics. He is the PI of the Charger Facility, a 3 Terawatt pulsed power laboratory to be utilized for z-pinch fusion of lithium deuteride, pulsed magnetic nozzles, and laboratory astrophysics. He has developed and taught courses in electric propulsion, fusion propulsion, and aerothermodynamics.

Dr. Cassibry is a lifetime senior member of AIAA. From 2006 until 2012 he served on the Plasmadynamics and Lasers Technical committee, and was the technical program chair for the plasmadynamics and lasers section of the 2011 Aerospace Science meeting. Currently he is an associate member of the Nuclear and Future Flight Committee. He has also assisted in the organization of the Advanced Space Propulsion Workshop and in the student poster session of the Werhner von Braun Memorial Symposium, and served as a panelist for "Enabling Broader Participation in Developing Breakthrough Science and Technologies: Perspectives from Scientists and Science Educators."

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RELEVANT PUBLICATIONS:

1. Cassibry, J. T., Thio, Y. C. F., Markusic, T. E., and Wu, S. T., "Numerical Modeling of a Pulsed Electromagnetic Plasma Thruster Experiment," *Journal of Propulsion and Power*, 22(2), March-April, 2006, pp 628-636.
2. Cassibry, J. T., "Effects of Equation of State and Transport on the Modeling of Pulsed Plasma Accelerators," *Journal of Propulsion and Power*, 23(2), March-April 2007, pp. 507-510.
3. Cassibry, J. T., "Comparison of Directly and Inductively Coupled Thrusters," *IEEE Transactions on Plasma Science*, Special Issue on Plasma Propulsion, Part 1 of 4, October 2008, 13(5), pp. 2180-2188.
4. Cassibry, J. T., Cortez, R. J., Hsu, S. C., and Witherspoon, F. D., "Estimates of confinement time and energy gain for plasma liner driven magneto-inertial fusion using an analytic self-similar converging shock model," *Physics of Plasmas*, 16, 112707 (2009).
5. Richardson, G. A., Cassibry, J. T., Chung, T. J. and Wu, S. T., "Finite Element Form of FDV for Widely Varying Flowfields," *Journal of Computational Physics*, 229 (2010) 145-167.
6. Hsu, S. C., T. J. Awe, S. Brockington, A. Case, J. T. Cassibry, G. Kagan, S. J. Messer, et al. 2012. "Spherically Imploding Plasma Liners as a Standoff Driver for Magnetoinertial Fusion." *IEEE Trans. Plasma Sci.* 40 (5): 1287 – 1298. doi:10.1109/TPS.2012.2186829.
7. J. T. Cassibry, M. Stanic, S. C. Hsu, F. D. Witherspoon, S.I. Abazhi, "Tendency of spherically imploding plasma liners formed by merging plasma jets to evolve toward spherical symmetry," *Physics of Plasmas*, 19, 052702, 2012.
8. Miernik, J., G. Statham, L. Fabisinski, C.D. Maples, R. Adams, T. Polsgrove, S. Fincher, et al. 2013. "Z-Pinch Fusion-based Nuclear Propulsion." *Acta Astronautica* 82 (2) (February): 173–182. doi:10.1016/j.actaastro.2012.02.012.