Michigan Institute for Plasma Science and Engineering (MIPSE)
University of Michigan
Michigan State University

9th ANNUAL GRADUATE STUDENT SYMPOSIUM

November 14, 2018
1005 EECS, 1301 Beal Avenue, Ann Arbor, MI 48109

Schedule

2:00 – 2:40	**Registration, poster set-up**	EECS atrium
2:40 – 3:30	**Poster session I**	EECS atrium
3:30 – 3:45	**Refreshments** (box lunch + coffee, tea)	1005 EECS
3:45 – 3:50	**Prof. Mark J. Kushner**, Director of MIPSE ***Opening remarks***	1005 EECS
3:50 – 4:50	Special MIPSE Seminar: **Dr. Svetlana Starikovskaia** Laboratory of Plasma Physics, CNRS, France ***Kinetics of Nanosecond Discharges at High Specific Energy Release***	1005 EECS
5:00 – 5:50	**Poster session II**	EECS atrium
5:50 – 6:40	**Poster session III**	EECS atrium
6:40 – 6:55	**Poster removal**	EECS atrium
6:55 – 7:00	***Best Presentation Award* ceremony**	EECS atrium

Poster Session I

1-01	**Katherine Wolff**	U-M	***Development of a Mobile Electric Propulsion Demonstration for STEM Outreach***
1-02	**Sneha Banerjee**	MSU	***Two Dimensional Tunneling Resistance Transmission Line Model for Parallel Carbon Nanotube Contacts***
1-03	**Benjamin Wachs**	U-M	***Effect of Background Pressure on Ion Acceleration in an Electron Cyclotron Resonance Thruster***
1-04	**Paul C. Campbell**	U-M	***Time-Dependent Helical Magnetic Field Effects on Cylindrical Liner Ablations***
1-05	**Heath LeFevre**	U-M	***An Experiment to Observe Photoionization Fronts in the Laboratory***
1-06	**Brendan Sporer**	U-M	***Construction of the BLUE Linear Transformer Driver System at the University of Michigan***
1-07	**Cristian Herrera**	MSU	***Optimization of Lightly Boron Doped Diamond Growth by Microwave Plasma-Assisted CVD for Electronic Applications***
1-08	**Brandon Russel**	U-M	***Multiple Species Laser-driven Ion-shock Acceleration***
1-09	**Sarah Cusson**	U-M	***Impact of Neutral Density on the Acceleration Region in a Magnetically Shielded Hall Thruster***
1-10	**Chenhui Qu**	U-M	***Optimizing Transient Behavior of a High-Low Pulsed Power Inductively Coupled Plasma***
1-11	**Andrew LaJoie**	MSU	***High Flow Argon through Cascaded Arc for Use as a High Pressure Gas Target Isolator***
1-12	**Agnit Mukhopadhyay**	U-M	***Estimation of the Auroral Ionospheric Conductance in Global MHD Models***
1-13	**Stephen DiIorio**	U-M	***Ultrafast Probing of Non-Equilibrium Plasmas Using Laser Wakefield-Accelerated Electron Bunches***
1-14	**Jinpu Lin**	U-M	***Relativistic Laser-solid Interaction: from Near-infrared to Mid-infrared***
1-15	**Mitchell Schneider**	MSU	***Benchmarking Ultra-Nano-Crystalline Diamond (UNCD) as a Field Emission Source for Accelerator Applications***
1-16	**Marcel Georgin**	U-M	***Plasma Waves in Hollow Cathodes***
1-17	**Yao Kovach**	U-M	***Investigation Particle Emission from Surface of Electrolyte in a DC Atmospheric Pressure Glow with Liquid Anode***
1-18	**Shuo Huang**	U-M	***Plasma Etching of High Aspect Ratio Oxide-Nitride-Oxide Stacks***

Poster Session II

2-01	**Jeff Woolstrum**	U-M	***Experimental and Computational Exploration of the Effects of Non-Uniform Applied Axial Magnetic Field on Z-Pinch Imploding Cylindrical Foils***
2-02	**Ramón Díaz**	MSU	***Substrate Holder Design Parameters for Single Crystal Diamond Deposition via Microwave Plasma Assisted CVD***
2-03	**Michael Wadas**	U-M	***Evolution of Perturbed Interfaces Subjected to Transient Accelerations***
2-04	**Zachariah Brown**	U-M	***Growth and Propagation of the E x B Electron Drift Instability in a Hall Effect Thruster: Experiment Compared to Theory***
2-05	**Robert VanDervort**	U-M	***Experiments to Understand the Interaction of Stellar Radiation with Molecular Clouds***
2-06	**Ryan Sandberg**	U-M	***Particle Method for the Vlasov-Poisson System***
2-07	**Asif Iqbal**	MSU	***Time Dependent Physics of Single Surface Multipactor by Multiparticle Monte Carlo Simulations***
2-08	**Griffin Cearley**	U-M	***Numerical Investigation of Radiation Heat-fronts***
2-09	**Astrid Raisanen**	U-M	***The Mobility of Electrons in a Hall Thruster Simulation***
2-10	**Yi Luo**	MSU	***An Analytical Model for Ultrafast Electron Emission Due to Two-color Laser Fields***
2-11	**Ethan Dale**	U-M	***Non-Invasive Characterization of the Hall Thruster Breathing Mode***
2-12	**Jon Murphy**	U-M	***Active Control for High Repetition-rate Laser Wakefield Accelerators***
2-13	**Laura Elgin**	U-M	***Omega 60 Experiments of Rayleigh-Taylor Instability Growth in the Highly Nonlinear Stage: Results and Future Directions***
2-14	**Raul Melean**	U-M	***Design of a Pulsed-Power Magnetized Plasma Flow Experiment for the Study of Star Formation and Astrophysical Bow Shocks***
2-15	**Joseph Groele**	U-M	***Comparison of Traditional and Plasma-induced Advanced Oxidation Processes***
2-16	**Joseph Levesque**	U-M	***Magnetized Bow Shocks at the OMEGA Laser Facility: Comparing Experimental Observations with Theory and Simulation***
2-17	**Amina Hussein**	U-M	***Laser-wakefield Accelerators for High-resolution X-ray Imaging of Complex Microstructures***
2-18	**Juliusz Kruszelnicki**	U-M	***Interactions between Water Droplets and Dielectric Barrier Discharge Plasmas***

Poster Session III

3-01	**Janez Krek**	MSU	***Dynamic Evaluation of EEDF with Boltzmann Equation Solvers in the KGMf***
3-02	**Nathaniel Wirgau**	U-M	***Characterization of Plasma Properties in Hollow Cathode Discharge***
3-03	**Paul T. Campbell**	U-M	***Proton Radiography of a Highly Asymmetric Laser-driven Reconnection Geometry***
3-04	**Alexander Vazsonyi**	U-M	***Towards Multidimensional Kinetic Modeling of Thermionic Hollow Cathodes***
3-05	**Timothy Collard**	U-M	***Low Power Magnetic Nozzle Thrust Performance in the Presence of Non-Idealities***
3-06	**Akash Shah**	U-M	***Deuterium Pinches and Switch Diagnostics for the 1-MA, 100ns MAIZE Pulsed Power Facility***
3-07	**Forrest Glines**	MSU	***Performance Portable Finite Volume Magnetohydrodynamics for the Exascale Era***
3-08	**Nicholas Ramey**	U-M	***X-ray Diagnostic Development for e- beam Driven Warm Dense Matter Studies***
3-09	**Davide Del Gaudio**	U-M	***Nano-wires to Film Transitions During Pulsed-laser Deposition: Role of Ion Distribution***
3-10	**Drew Packard**	U-M	***Recent Progress on the Harmonic Recirculating Planar Magnetron***
3-11	**Tanvi Nikhar**	MSU	***Nanodiamond to Nanographite Conversion During Field Emission***
3-12	**Stephanie Miller**	U-M	***Laser Gate Experiment for Reducing Energy Coupling Losses in Magnetized Liner Inertial Fusion (MagLIF)***
3-13	**Kenneth Engeling**	U-M	***Spectroscopic Investigation of Excited Nitrogen Produced in a Pulsed, Packed Bed Dielectric Barrier Discharge Reactor***
3-14	**Amanda Lietz**	U-M	***Modeling Atmospheric Pressure Plasma Multi-jet Dynamics***
3-15	**Shadrach Hepner**	U-M	***Low Frequency Instability Detection in a Magnetic Nozzle***
3-16	**Janis Lai**	U-M	***Investigation into the Coupling between Plasma-induced Capillary Oscillations and Streamer Self-organization in Bubbles in Water***
3-17	**Abhijit Jassem**	U-M	***A Re-examination of Backward Wave Theory for Oscillations on a Helix Traveling-Wave Tube***
3-18	**Joshua Woods**	U-M	***Equivalent Circuit Model for Field-reversed Configuration Thruster with Self-Consistent Mutual Inductance***