



Michigan Institute for Plasma Science and Engineering (MIPSE)

University of Michigan & Michigan State University

6th ANNUAL GRADUATE STUDENT SYMPOSIUM

October 7, 2015

1005 EECS, 1301 Beal Avenue, Ann Arbor, MI 48109

Schedule

2:15 – 3:00	Registration, poster set-up	EECS atrium
3:00 – 3:20	Refreshments (box lunch + coffee, tea)	1005 EECS
3:20 – 3:25	Prof. Mark J. Kushner, Director of MIPSE Opening remarks	1005 EECS
3:25 – 3:30	IEEE NPSS South-East Michigan Chapter presentation	1005 EECS
3:30 – 4:30	Special MIPSE Seminar: Dr. Edmund Synakowski, U.S. Department of Energy <i>Transformative Passages in the Fusion and Plasma Sciences</i>	1005 EECS
4:30 – 5:15	Poster session I	EECS atrium
5:15 – 6:00	Poster session II	EECS atrium
6:00 – 6:45	Poster session III	EECS atrium
6:45 – 7:00	Light refreshments	EECS atrium
7:00 – 7:05	<i>Best Presentation Award</i> ceremony	EECS atrium

Poster Session I

- 1-01 **Xiao Feng**, Michigan State University
A Positivity-Preserving Single-Stage Single-Step High-Order Constrained Transport Method for Magnetohydrodynamic Equations
- 1-02 **Lois Smith**, University of Michigan
Wave Activity Connected to Plasmaspheric 1-10 eV Post-Midnight Ion Loss seen by Van Allen Probes
- 1-03 **Joshua Davis**, University of Michigan
Measurements of Laser Generated Soft X-ray Emission from Irradiated Gold Foils
- 1-04 **Shuo Huang**, University of Michigan
Dry Etching of Si_3N_4 Using Remote Plasma Sources Sustained in NF_3 Mixtures
- 1-05 **Jinpu Lin**, University of Michigan
Field Distribution in a Vacuum-nano Diode
- 1-06 **Greg Meece**, Michigan State University
Self Regulating AGN Feedback in Cool-Core Galaxy Clusters
- 1-07 **Neil Arthur**, University of Michigan
Increasing Extracted Beam Current Density in Ion Thrusters through Plasma Potential Modification
- 1-08 **Patrick Tracy**, University of Michigan
Relative Heating of Heavy Ions Observed at 1 AU with ACE/SWICS
- 1-09 **Alexander Rasmus**, University of Michigan
Interaction of a Plasma Jet with a Magnetized Planar Obstacle
- 1-10 **Janis Lai**, University of Michigan
Active Interrogation of Plasma-liquid Boundary Using 2D Plasma-in-liquid Apparatus
- 1-11 **Scott Rice**, Michigan State University
Simulation of Multipactor Initiation in FRIB Halfwave Cavities
- 1-12 **Frans Ebersohn**, University of Michigan
Simulation of Magnetic Nozzle Thruster Plasma Expansion
- 1-13 **Willow Wan**, University of Michigan
Observations of Vortex Merger and Growth Reduction in a Dual-mode, Supersonic Kelvin-Helmholtz Instability Experiment
- 1-14 **Peng Tian and Chenhui Qu**, University of Michigan
Properties of Bipolar and Unipolar DC-Pulsed Microplasma Arrays at Intermediate Pressures
- 1-15 **Rachel Young**, University of Michigan
Using the OMEGA Laser to Study Accretion Shocks on Forming Stars

Poster Session II

- 2-01 Wei Guo, Michigan State University
Asymptotic Preserving Maxwell Solver Resulting in the Darwin Limit of Electrodynamics
- 2-02 Gang Kai Poh, University of Michigan
MESSENGER Observation on Reconnection and Structure of Mercury's Magnetotail Lobes and Plasma Sheet
- 2-03 Keegan Behm, University of Michigan
Measurements of the Betatron Spectrum Around the K-edge of Thin Foils
- 2-04 Chad Huard, University of Michigan
Stochastic Defect Detection for Monte-Carlo Feature Profile Model
- 2-05 C. F. Dong, University of Michigan
Harmonic Generation in the Beam Current in a Traveling Wave Tube
- 2-06 Derek Neben, Michigan State University
Bremsstrahlung Measurement on the Superconducting Source for Ions (SuSI)
- 2-07 Timothy Collard, University of Michigan
Ion Energetics of the Modes of the CubeSat Ambipolar Thruster
- 2-08 Jeffrey Fein, University of Michigan
Experiments on the Scaling of Growth and Saturation of Multi-beam Two-plasmon Decay with Plasma Conditions
- 2-09 Amanda Lietz, University of Michigan
DBD on Liquid Covered Tissue: Modeling Long-Timescale Chemistry
- 2-10 Adrian Lopez, University of Michigan
Effects of Secondary Electron Emissions from a Plasma Immersed Graphite Substrate
- 2-11 Stephen Zajac, Michigan State University
Microwave Plasma Assisted Chemical Vapor Deposition of Boron Doped Diamond for Vertical Schottky Barrier Diode Fabrication
- 2-12 Horatiu Dragnea, University of Michigan
Development of a 2D Axial-radial Fluid Electron Model
- 2-13 Adam Steiner, University of Michigan
Characterization of a MA-Class Linear Transformer Driver for Foil Ablation and Z-Pinch Experiments
- 2-14 Thomas Batson and Anthony Raymond, University of Michigan
High Energy Electron Acceleration from Underdense Plasmas with the OMEGA EP Laser
- 2-15 Patrick Wong, University of Michigan
Spatial Amplification in a Disk-on-Rod Traveling-Wave Amplifier

Poster Session III

- 3-01 **Rajib Mandal**, Michigan State University
Wrinkling Pattern Formation in Stretchable Luminescent Films of Silicon Nano-crystals
- 3-02 **Manan Kocher**, University of Michigan
Anomalous Behavior of Carbon, Oxygen Charge States in a Population of Interplanetary Coronal Mass Ejections
- 3-03 **Yao Kovach**, University of Michigan
The Effect of Anode Material and Secondary Gas Injection on Self-organized Patterns in Atmospheric Pressure Glows
- 3-04 **Steven Exelby**, University of Michigan
Harmonic Generation on the Multifrequency Recirculating Planar Magnetron Experiment
- 3-05 **Ayan Bhattacharya**, Michigan State University
Charge Transport Properties of Plasma Assisted CVD Grown Single Crystal Diamond Irradiated with Swift-Heavy Ion Beam
- 3-06 **Scott Hall**, University of Michigan
30-kW, Constant-Current-Density Performance of a 100-kW-class Nested Hall Thruster
- 3-07 **Patrick Belancourt**, University of Michigan
Equation-of-State Measurements of Resorcinol Formaldehyde Foam Using Imaging X-Ray Thomson Spectrometer
- 3-08 **Selman Mujovic**, University of Michigan
The Time Evolution of Streamer Discharges in Single and Multiple Bubbles in Water
- 3-09 **Guy Parsey**, Michigan State University
Laser/Plasma-Pumped Rare Gas Laser: Global Model Study
- 3-10 **Archis Joglekar**, University of Michigan
Nernst Effect in Magnetized Hohlräume
- 3-11 **Omar Leon and Grant Miars**, University of Michigan
Model Validation for Plasma Contactor Mediation of Electron Beam Charged Spacecraft
- 3-12 **Robert VanDervort**, University of Michigan
A Diffusive Code, xRage, Is Compared to Experimental Data from Omega
- 3-13 **David Simon**, University of Michigan
Negative Mass Effects in Conventional, Planar, and Inverted Magnetrons
- 3-14 **David Yager-Elorriaga**, University of Michigan
Ultrathin Liner-Plasma Implosion Experiments on a sub-MA Current Generator
- 3-15 **Jungmoo Hah**, University of Michigan
A High Repetition Rate Laser-heavy Water Based Neutron Source