



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

4th ANNUAL GRADUATE STUDENT SYMPOSIUM

September 25, 2013
1200 EECS, 1301 Beal Avenue, Ann Arbor, MI 48109

Schedule

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| 2:30 – 2:45 | Poster set-up |
| 2:45 – 3:00 | Prof. Mark J. Kushner, Director of MIPSE
<i>Opening Remarks</i> |
| 3:00 – 3:45 | Poster Session I |
| 4:00 – 5:00 | Special MIPSE Seminar:
Prof. Edward Thomas, Auburn University
<i>Magnetized Dusty Plasma Experiment: A User Facility for Complex Plasma Research</i> |
| 5:00 – 5:45 | Poster Session II |
| 5:45 – 6:30 | Poster Session III |
| 6:45 – 7:00 | <i>Best Presentation Award Ceremony</i> |

Refreshments will be provided.

Poster Session I

- 1-01 **Guy Parsey**, Michigan State University
Non-Equilibrium Reaction Kinetics of an Atmospheric Pressure Microwave-Driven Plasma Torch: a Kinetic Global Model
- 1-02 **Patrick Belancourt**, University of Michigan
Transport of Hot Electrons along a Wire
- 1-03 **Anthony Raymond**, University of Michigan
Investigating the Influence of Overdense Plasma Surfaces in High Harmonic Generation from High-intensity Laser Irradiation
- 1-04 **Maria Choi**, University of Michigan
Modeling a Hollow Cathode Plume Plasma
- 1-05 **Archis Joglekar**, University of Michigan
Vlasov-Fokker-Planck Modeling of Plasma near Hohlraum Walls Heated with Nanosecond Laser Pulses Calculated Using the Ray Tracing Equations
- 1-06 **Michael Logue**, University of Michigan
Control of Electron Energy Distributions in Inductively Coupled Plasmas Using Tandem Sources
- 1-07 **Alexander Englesbe**, University of Michigan
Electrostatic Probe Measurement of Sheath Potentials with Secondary Electron Emission in a Low-density Xenon Plasma
- 1-08 **Charles Bardel**, Michigan State University
Increasing Efficiency of Monte Carlo Particle-Fluid Collision Calculations on GPU
- 1-09 **Matthew Weis**, University of Michigan
Magneto-Rayleigh-Taylor Growth and Feedthrough in Cylindrical Liners
- 1-10 **Sang-Heon Song**, University of Michigan
SiO₂ Etch Properties and Ion Energy Distribution in Pulsed Capacitively Coupled Plasmas Sustained in Ar/CF₄/O₂
- 1-11 **Michael Sekerak**, University of Michigan
Hall Effect Thruster Oscillatory Modes
- 1-12 **Shannon Demlow**, Michigan State University
Temperature Dependence of Boron Doping Efficiency
- 1-13 **Wei Tian**, University of Michigan
Interaction of Atmospheric Pressure Dbds with Liquid Covered Tissues
- 1-14 **Abdulkadir Yucel**, University of Michigan
An FMM-FFT Accelerated Hybrid Volume Surface Integral Equation Solver for Electromagnetic Analysis of Plasma-Engulfed Vehicles
- 1-15 **Zhen (Tony) Zhao**, University of Michigan
Phase Contrast Imaging and Characterization of X-rays Produced via Ultraintense Laser Plasma Interactions Using Coated Metallic Targets

Poster Session II

- 2-01 **Joshua Davis**, University of Michigan
Film Characterization of Agfa D7 and D8 x-ray Film Using a Multiple Anode X-ray Source
- 2-02 **Paul Cummings**, University of Michigan
Simulations for the Elucidation of Electron Beam Properties in Laser-Wakefield Acceleration Experiments via Betatron and Synchrotron-Like Radiation
- 2-03 **Scott Rice**, Michigan State University
Multipactor Suppression Via Secondary Modes in a Coaxial Cavity
- 2-04 **Jun-Chieh (Jerry) Wang**, University of Michigan
A Microdischarge Based Pressure Sensor
- 2-05 **Horatiu Dragnea**, University of Michigan
Description of the Sputtered Boron Atoms in the Plume of a SPT-70 Hall Thruster
- 2-06 **Mayur Jain**, Michigan State University
Modeling and Simulation of Strongly Coupled Plasmas
- 2-07 **Yiting Zhang**, University of Michigan
Control of Ion Energy & Angular Distribution in Dual-Frequency Capacitively Coupled Plasmas
- 2-08 **Roxanne Katus**, University of Michigan
Statistical Analysis of the Geomagnetic Response to Different Solar Wind Drivers and the Dependence on Storm Intensity
- 2-09 **Matthias Muehle**, Michigan State University
Investigating the Dependencies and Limitations of High Pressure Microwave Plasma Assisted Chemical Vapor Deposition of Single Crystalline Diamond
- 2-10 **Xiuzhang Cai**, University of Michigan
Adaptively Matched Dual Band GPS Antenna for Variable Plasma Environments
- 2-11 **David Yager-Elorriaga**, University of Michigan
Development of a Compact Pulse Generator for X-Ray Backlighting of Planar Foil Ablation Experiments
- 2-12 **Peng Zhang**, University of Michigan
Electrical Contacts: A voltage Scale for Thermal Runaway and Issues in Measurements of Constriction Resistance
- 2-13 **Qi Tang**, Michigan State University
Finite Difference Weighted Essentially Non-Oscillatory Schemes with Constrained Transport for Ideal Magnetohydrodynamics

Poster Session III

- 3-01 **Jeff Fein**, University of Michigan
Preliminary Investigation of the High-energy X-ray Spectrum of Pinhole Point Projection Backlighters
- 3-02 **Zhaohan He**, University of Michigan
Direct Control of Electron Beam from a Laser Plasma Accelerator Using Adaptive Optics with a Genetic Algorithm
- 3-03 **Gautam Dharuman**, Michigan State University
Quasi-Classical Study of Atomic States
- 3-04 **Ian Rittersdorf**, University of Michigan
Effects of Random Circuit Fabrication Errors on Small Signal Gain and Output Phase in a Traveling Wave Tube
- 3-05 **Iverson Bell**, University of Michigan
Studying Miniature Electrodynamical Tethers and Interaction with the Low Earth Orbit Plasma
- 3-06 **Peiyao Liu**, Michigan State University
Atmospheric Pressure Microwave-Powered Microplasma Source Based on Strip-Line-Like Structure
- 3-07 **Wesley Wan**, University of Michigan
Supersonic, Single-mode, Shockwave-driven Kelvin-Helmholtz Instability Experiment on OMEGA-EP
- 3-08 **Peng Tian**, University of Michigan
Microwave Excited Microplasmas at Low Pressure as a Vuv Photon Source
- 3-09 **Christopher Durot**, University of Michigan
Development of a Novel Time-Resolved Laser-Induced Fluorescence Technique
- 3-10 **Shreya Nad**, Michigan State University
Growth and Analysis of Large Undoped Single Crystal Diamond Substrates Using Microwave Plasma-Assisted Chemical Vapor Deposition
- 3-11 **Sarah Nowak Gucker**, University of Michigan
The Scaling of Breakdown Voltage of Air Bubbles in Liquid Water
- 3-12 **Rachel Young**, University of Michigan
Creating Magnetized Plasma Jets on the OMEGA Laser
- 3-13 **Eric Wolf**, Michigan State University
A New Field Solver For Particle-in-Cell (PIC) Methods
- 3-14 **Kapil Sawlani**, University of Michigan
An Experimental Study to Show the Effects of Secondary Electron Emission on Plasma Properties in Hall Thrusters