Michigan Institute for Plasma Science and Engineering (MIPSE)

University of Michigan & Michigan State University

3rd ANNUAL GRADUATE STUDENT SYMPOSIUM

Wednesday, October 3, 2012, 2:00 – 6:00 pm

Michigan State University

1345 Engineering Building, 428 S. Shaw Ln., East Lansing, MI 48824

Schedule

U-M attendees:	
12:30 – 12:45	*Boarding the bus: SRB, 2455 Hayward Ann Arbor, MI 48109-2143*
12:45 – 2:00	*Travel to East Lansing*
2:00 – 2:15	Posters set up
2:15 – 2:20	***Opening Remarks:*** **Prof. John Verboncoeur** (MSU)
2:20 – 3:05	**Poster Session I**
3:05 – 3:15	**Prof. Satish Udpa**, Dean of Engineering (MSU) ***Overview of COE Research***
3:15 – 4:15	Special MIPSE Seminar: **Prof. Konrad Gelbke** (MSU) ***From NSCL (National Superconducting Cyclotron Facility) to FRIB (Facility for Rare Isotope Beams) at MSU***
4:15 – 5:00	**Poster Session II**
5:00 – 5:45	**Poster Session III**
5: 45 – 6:00	**Best Presentation Award Ceremony**
U-M attendees:	
6:00 – 6:15	*Boarding the bus: the circle drive off of Red Cedar just North of the Shaw Lane/Red Cedar intersection, East Lansing*
6:15 – 7:30	*Travel to Ann Arbor*

Refreshments will be provided.

Student Participants

Last Name	First Name	Institution	Poster Session	Poster Number
Asgarian	Mohamad Ali	Michigan State University	III	3-12
Bae	Hyowon	Pusan National University, Korea	I	1-13
Bardel	Charles	Michigan State University	III	3-10
Bell	Iverson	University of Michigan	II	2-10
Demlow	Shannon	Michigan State University	I	1-08
Di Stefano	Carlos	University of Michigan	I	1-06
Frahan	Marc Henry de	University of Michigan	II	2-03
Gucker	Sarah M. Nowak	University of Michigan	I	1-07
Hara	Kentaro	University of Michigan	I	1-02
He	Zhaohan	University of Michigan	II	2-04
Hwang	Seokwon	Pusan National University, Korea	I	1-12
Joglekar	Archis	University of Michigan	III	3-03
Katus	Roxanne	University of Michigan	II	2-13
Kosaka	Hiroyuki	Nagoya University, Japan	II	2-08
Lee	Jung Yeol	Pusan National University, Korea	III	3-01
Liaw	David	University of Michigan	II	2-02
Liu	Peiyao	Michigan State University	II	2-05
Logue	Michael	University of Michigan	I	1-09
Lu	Jing	Michigan State University	III	3-06
MacDonald	Mike	University of Michigan	I	1-04
Meierbachtol	Collin	Michigan State University	I	1-11
Muehle	Matthias	Michigan State University	II	2-09
Parsey	Guy	Michigan State University	III	3-08
Patel	Sonal	University of Michigan	III	3-05
Ranieri	Pietro	University of Michigan	III	3-02
Raymond	Anthony	University of Michigan	III	3-04
Rice	Scott	Michigan State University	II	2-01
Rittersdorf	Ian	University of Michigan	I	1-14
Sommers	Bradley	University of Michigan	II	2-07
Song	In Cheol	Pusan National University, Korea	III	3-11
Song	Sang-Heon	University of Michigan	II	1-03
Tang	Qi	Michigan State University	I	1-01
Tian	Peng	University of Michigan	III	3-09
Tian	Wei	University of Michigan	III	3-07
Vargas	Michael	University of Michigan	I	1-05
Wang	Jun-Chieh (Jerry)	University of Michigan	I	1-10
Winklehner	Daniel	Michigan State University	II	2-12
Wolf	Eric	Michigan State University	II	2-14
Zhang	Peng	University of Michigan	III	3-13
Zhang	Yiting	University of Michigan	II	2-11
Zulick	Calvin	University of Michigan	II	2-06

Poster Session I

1-01	**Qi Tang,** Michigan State University ***High Order WENO AMR Method for Ideal Magnetohydrodynamic Equations***
1-02	**Kentaro Hara**, University of Michigan ***Kinetic Simulations of Partially Magnetized Plasma in a Hall Thruster***
1-03	**Sang-Heon Song,** University of Michigan ***Control of Electron Energy Distributions Through Interaction of Electron Beams and the Bulk in Capacitively Coupled Plasmas***
1-04	**Mike MacDonald**, University of Michigan ***Imaging X-ray Fluorescence Relevant to Hydrodynamic Mixing Experiments at the National Ignition Facility***
1-05	**Michael Vargas**, University of Michigan ***Phase Contrast Imaging with Betatron Radiation from Laser Wakefield Accelerated Electrons***
1-06	**Carlos Di Stefano**, University of Michigan **A Two-Dimensional Multimode RM Experiment on OMEGA-EP**
1-07	**Sarah M. Nowak Gucker**, University of Michigan ***Asymmetric Characteristics of a Dielectric Barrier Discharge***
1-08	**Shannon Demlow**, Michigan State University ***Doping Efficiency in Plasma Enhanced Chemical Vapor Deposition of Boron Doped Diamond***
1-09	**Michael Logue**, University of Michigan ***Control of Ion Energy Distributions Using Ion Mass Ratios in Inductively Coupled Plasmas With a Pulsed DC Substrate Bias***
1-10	**Jun-Chieh (Jerry) Wang**, University of Michigan ***The Role of Micro-Plasmas from Charge Rollers in Printer Engines***
1-11	**Collin Meierbachtol**, Michigan State University ***Including Convective Flows in a Self-Consistent Hydrogen-Based Microwave PACVD Reactor Model***
1-12	**Seokwon Hwang**, Pusan National University, Korea ***Performance Improvement of a Particle-in-Cell Simulation Using GPUs***
1-13	**Hyowon Bae**, Pusan National University, Korea ***Characteristics of Radio-Frequency Driven Discharges in Sub-micro Gap***
1-14	**Ian Rittersdorf**, University of Michigan ***Effects of Random Circuit Fabrication Errors on Small Signal Gain and Output Phase in a Traveling Wave Tube***

Poster Session II

2-01	**Scott Rice,** Michigan State University ***Multipactor Suppression in Resonant Cavities via Secondary Modes***
2-02	**David Liaw,** University of Michigan ***Simulation of Using Background Plasma to Neutralize Charged Particle Thrusters on Nanospacecraft***
2-03	**Marc Henry de Frahan,** University of Michigan ***Beryllium Strength under Extreme Dynamic Loading Conditions***
2-04	**Zhaohan He,** University of Michigan ***Diffraction of Electron Pulses Generated from Laser-Plasma Wakefield***
2-05	**Peiyao Liu,** Michigan State University ***Atmospheric Pressure Microwave-Powered Microplasma Source***
2-06	**Calvin Zulick,** University of Michigan ***Neutron Generation Using Ultra-Intense Laser Plasma Interactions***
2-07	**Bradley Sommers,** University of Michigan ***Plasma Formation Inside Deformed Gas Bubbles Submerged in Water***
2-08	**Hiroyuki Kosaka,** Nagoya University, Japan ***Atomic Composition of Diamond-Like Carbon Film Coated at over 100 □m/h by Using Microwave-Excited High-Density Near Plasma***
2-09	**Matthias Muehle,** Michigan State University ***Quality and Internal Stress of Single Crystalline Diamond Synthesized by Microwave Plasma*** ***Assisted Chemical Vapor Deposition***
2-10	**Iverson Bell**, University of Michigan ***Investigating Low Earth Orbit Plasma Interaction to Enhance Understanding of Miniaturized Electrodynamic Tether Propulsion for Femtosatellites and Picosatellites***
2-11	**Yiting Zhang,** University of Michigan ***Ion Energy Angular Phase Distribution from the Bulk Plasma through Sheath in Single- and Dual-Frequency Capacitively Coupled Plasma***
2-12	**Daniel Winklehner,** Michigan State University ***Space Charge Compensation Measurements of Multi-Charged Ion Beams Extracted from an ECR Ion Source***
2-13	**Roxanne Katus,** University of Michigan ***Similarities and Differences in Low-to-Mid Latitude Geomagnetic Indices During Storms***
2-14	**Eric Wolf**, Michigan State University ***Lacunae-Based Stabilization of FDTD Mesh Refinement***

Poster Session III

3-01	**Jung Yoel Lee,** Pusan National University, Korea ***Investigation of EEPFs in a Micro Dielectric Barrier Discharge at Atmospheric Pressure Using a Particle-in-Cell Simulation***
3-02	**Pietro Ranieri,** University of Michigan ***Stimulated Beam Extraction Performance Characterization of a 50-cm Ion Thruster Discharge***
3-03	**Archis Joglekar,** University of Michigan ***Magnetic Reconnection in Plasma under Inertial Confinement Fusion Conditions Driven by Heat Flux Effects in Ohm's Law***
3-04	**Anthony Raymond,** University of Michigan ***Directional, Energetic Neutron Generation via High-Intensity Laser/Plasma Interactions at CUOS***
3-05	**Sonal Patel,** University of Michigan ***X-Pinch Experiments on UM Linear Transformer Drivers***
3-06	**Jing Lu,** Michigan State University ***A Description of the Experimental Microwave Discharge Behavior versus Pressure, Power and Reactor Geometry for MPACVD Diamond Synthesis Reactors***
3-07	**Wei Tian,** University of Michigan ***Simulations of Plasma Dynamics of Electrical Discharges Sustained in Bubbles in Water***
3-08	**Guy Parsey,** Michigan State University ***Kinetic Modeling of Electronically Enhanced Reaction Pathways in Plasma Assisted Combustion***
3-09	**Peng Tian,** University of Michigan ***Controlling Ion and UV/VUV Photon Fluxes in Pulsed Low Pressure Inductively Coupled Plasmas for Materials Processing***
3-10	**Charles Bardel**, Michigan State University ***Increasing Efficiency of Monte Carlo Particle-Fluid Collision Calculations on GPU***
3-11	**In Cheol Song**, Pusan National University, Korea ***Parallelized Two-Dimensional Particle-in-Cell Simulation for Capacitively Coupled Plasma Using Graphic Processing Unit***
3-12	**Mohamad Ali Asgarian,** Michigan State University ***Modeling of the O-X-B Double Conversion Pprocess in Fusion Plasmas***
3-13	**Peng Zhang,** University of Michigan ***Spreading Resistance of Thin Film Contacts***