10th Annual Engineering Graduate Symposium Program

Friday, October 30, 2015
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### Planning Committees

#### Graduate Education Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kim Elliott</td>
<td>Director for Graduate Education</td>
</tr>
<tr>
<td>Tiffany Porties</td>
<td>Assistant Director for Graduate Education</td>
</tr>
<tr>
<td>Andria Rose</td>
<td>Coordinator for Graduate Education</td>
</tr>
<tr>
<td>Shira Washington</td>
<td>Coordinator for Graduate Education</td>
</tr>
</tbody>
</table>

#### EGS Planning Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Department</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berk Altin</td>
<td>EE: Sys</td>
<td>Session Chair</td>
</tr>
<tr>
<td>Cesar Barraza Botet</td>
<td>ME</td>
<td>Session Chair</td>
</tr>
<tr>
<td>Shao Teng Chong</td>
<td>ME</td>
<td>Session Chair, Logistics</td>
</tr>
<tr>
<td>Colleen Crouch</td>
<td>ME</td>
<td>Logistics</td>
</tr>
<tr>
<td>Ahmet Emre</td>
<td>BME</td>
<td>Towner Chair</td>
</tr>
<tr>
<td>Ryan Hall</td>
<td>Macro</td>
<td>Session Chair</td>
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<tr>
<td>Ayse Buke Hiziroglu</td>
<td>BME</td>
<td>Session Chair</td>
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<tr>
<td>Justin Koczak</td>
<td>ME</td>
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</tr>
<tr>
<td>Juliusz Kruszelnicki</td>
<td>NERS</td>
<td>Session Chair</td>
</tr>
<tr>
<td>Janis Lai</td>
<td>NERS</td>
<td>Editorial Board</td>
</tr>
<tr>
<td>John Lipor</td>
<td>EE: Sys</td>
<td>Sponsor Recruiter</td>
</tr>
<tr>
<td>Jose Mesa</td>
<td>NAME</td>
<td>Session Chair</td>
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<tr>
<td>Soroush Moghaddam</td>
<td>ME</td>
<td>Session Chair</td>
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<tr>
<td>Maziar Mohammadi</td>
<td>ME</td>
<td>Session Chair, Editorial Board</td>
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<tr>
<td>Name</td>
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<tr>
<td>Sourav Mohanty</td>
<td>Aero</td>
<td>Session Chair</td>
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<tr>
<td>Samanthule Nola</td>
<td>Macro</td>
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<tr>
<td>Marc Paff</td>
<td>NERS</td>
<td>Session Chair</td>
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<tr>
<td>Sophia Pilipchuk</td>
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<td>Vahid Rashidi</td>
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<tr>
<td>Nima Salehi</td>
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<tr>
<td>Morteza Sheikhsofla</td>
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<td>Onajite Shemi</td>
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<tr>
<td>Reza Soroushmehr</td>
<td>Med School</td>
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<td>Zachariah Sperry</td>
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<td>Justin Storms</td>
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<td>Megan Szakasits</td>
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<td>Xiaoyu Wang</td>
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<td>Zhijie Wang</td>
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<td>Session Chair</td>
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<td>John Xun Yang</td>
<td>CLASP</td>
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<tr>
<td>Deokkyun Yoon</td>
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<tr>
<td>Chunyang Zhai</td>
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<tr>
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<tr>
<td>Colleen Crouch</td>
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<tr>
<td>Gian Garcia</td>
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<tr>
<td>Crystal Green</td>
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<tr>
<td>Dan Imaizumi Krieger</td>
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<tr>
<td>Yang Li</td>
<td>CLASP</td>
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<tr>
<td>Sean Messenger</td>
<td>Rob</td>
<td></td>
</tr>
<tr>
<td>Aeriel Murphy</td>
<td>MS&amp;E</td>
<td></td>
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<tr>
<td>Luciana Pinheiro</td>
<td>Aero</td>
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<tr>
<td>Ellen Solomon</td>
<td>MS&amp;E</td>
<td></td>
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<tr>
<td>Paige Tracy</td>
<td>BME</td>
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<tr>
<td>Alejandro Vigo</td>
<td>IOE</td>
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<tr>
<td>Yu Wang</td>
<td>EE: Sys</td>
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<tr>
<td>Kevin Wilt</td>
<td>ME</td>
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Sponsors

MICHIGAN ENGINEERING
UNIVERSITY OF MICHIGAN

COLLEGE OF ENGINEERING
CENTER FOR ENTREPRENEURSHIP
UNIVERSITY OF MICHIGAN

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Phone: 734.761.4539  E-mail: usa0411@fedex.com

2609 Plymouth Rd, Ann Arbor, MI 48105
Phone: 734.996.0050  E-mail: usa0465@fedex.com

3354 Washtenaw Rd, Ann Arbor, MI 48104
Phone: 734.975.0496  E-mail: usa1781@fedex.com
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Info session
October 30, 2015
EECS 1200
3 - 4pm

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# Current Graduate Student Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Event and Location</th>
</tr>
</thead>
</table>
| 8:00 am – 2:00 pm     | Registration & Information  
Bob & Betty Beyster Building Atrium |
| 9:00 am – 5:00 pm     | Sponsor Interview Sessions  
Duderstadt Center Study Rooms 2-4  
-Intel  
-Soar Technology, Inc.  
-MIT Lincoln Laboratory |
| 9:30 am – 10:25 am    | Welcome Remarks and Keynote Address  
Chesebrough Auditorium, Chrysler Center |
| 10:30 am – 3:30 pm    | Sponsor Booths  
Duderstadt Center  
-Center for Entrepreneurship  
-Exponent  
-FedEx  
-Soar Technology, Inc.  
-Tauber Institute for Global Operations |
| 10:45 am – 12:45 pm   | Poster Session 1  
Duderstadt Center & EECS Atrium |
| 11:00 am – 12:00 pm   | Tauber Institute for Global Operations Information Session  
1210 Lurie Engineering Center |
| 12:00 pm – 2:00 pm    | Lunch Pick-up  
Bob & Betty Beyster Building Atrium |
| 12:30 pm – 1:30 pm    | Exponent Information Session  
1210 Lurie Engineering Center |
| 12:30 pm – 2:30 pm    | Richard & Eleanor Towner Prize for Outstanding PhD Research Poster Session  
Pierpont Commons Atrium |
| 1:30 pm – 3:30 pm     | Poster Session 2  
Duderstadt Center & EECS Atrium |
| 3:00 pm – 4:00 pm     | Center for Entrepreneurship Information Session  
1200 EECS |
Prospective Student Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>Event and Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 am – 2:00 pm</td>
<td>Registration &amp; Information</td>
</tr>
<tr>
<td></td>
<td><em>Bob &amp; Betty Beyster Building Atrium</em></td>
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<tr>
<td>8:20 am – 9:20 am</td>
<td>Admissions &amp; Funding Workshop</td>
</tr>
<tr>
<td></td>
<td><em>1013 HH Dow</em></td>
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<tr>
<td>9:30 am - 10:25 am</td>
<td>Welcome Remarks and Keynote Address</td>
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<tr>
<td></td>
<td><em>Cheeseborough Auditorium, Chrysler</em></td>
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<tr>
<td>10:45 am – 12:45 pm</td>
<td>Poster Session 1</td>
</tr>
<tr>
<td></td>
<td><em>Duderstadt Center &amp; EECS Atrium</em></td>
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<tr>
<td>12:00 pm – 1:45 pm</td>
<td>Lunch Pick-up</td>
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<tr>
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<td><em>Bob &amp; Betty Beyster Building Atrium</em></td>
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<tr>
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<td>Seating is available in the BorgWarner Galleria (GG Brown)</td>
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<tr>
<td>12:30 pm – 1:45 pm</td>
<td>Richard &amp; Eleanor Towner Prize for Outstanding PhD Research Poster Session</td>
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<tr>
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<td><em>Pierpont Commons Atrium</em></td>
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<tr>
<td>1:30 pm – 1:45 pm</td>
<td>Poster Session 2</td>
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<td><em>Duderstadt Center &amp; EECS Atrium</em></td>
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<tr>
<td>1:45 pm – 2:00 pm</td>
<td>Meet Department Representatives</td>
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<tr>
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<td><em>Bob &amp; Betty Beyster Building Atrium</em></td>
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<tr>
<td>2:00 pm – 5:00 pm</td>
<td>Department Visit</td>
</tr>
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</table>
## Engineering Department Visit Rooms

<table>
<thead>
<tr>
<th>Department</th>
<th>Room</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>AERO</td>
<td>1044 FXB McDivitt Conference Room</td>
<td>Denise Phelps 734-615-4406</td>
</tr>
<tr>
<td>AP</td>
<td>267 West Hall (Central Campus)</td>
<td>Abe Oraiqat 313-585-9119</td>
</tr>
<tr>
<td>BME</td>
<td>2203 LBME</td>
<td>Maria Steele 734-647-1091</td>
</tr>
<tr>
<td>ChE</td>
<td>G126 NCRC Building 28</td>
<td>Susan Hamlin 734-763-1148</td>
</tr>
<tr>
<td>CEE</td>
<td>2355 GGB</td>
<td>Jessica Randolph 734-764-8405</td>
</tr>
<tr>
<td>CLASP</td>
<td>2204 SRB</td>
<td>Sandra Pytlinski 734-936-0482</td>
</tr>
<tr>
<td>CSE</td>
<td>3725 BBB</td>
<td>Dia Moulton 734-647-8047</td>
</tr>
<tr>
<td>EE</td>
<td>3316 EECS</td>
<td>Steven Pejuan 734-647-1758</td>
</tr>
<tr>
<td>EE:S</td>
<td>3316 EECS</td>
<td>Jose-Antonio Rubio 734-764-9387</td>
</tr>
<tr>
<td>IOE</td>
<td>1602 IOE</td>
<td>Matt Irelan 734-764-6480</td>
</tr>
<tr>
<td>IS+D</td>
<td>SI-North 2nd Floor Conf. Room</td>
<td>Sara Holliday 734-936-9107</td>
</tr>
<tr>
<td>Macro</td>
<td>3062C HH Dow</td>
<td>Adam Mael 734-763-2316</td>
</tr>
<tr>
<td>MSE</td>
<td>3062A HH Dow</td>
<td>Renee Hilgendorf 734-763-9790</td>
</tr>
<tr>
<td>ME</td>
<td>1018 HH Dow</td>
<td>Katie Morningstar 734-936-0337</td>
</tr>
<tr>
<td>NAME</td>
<td>232 NAME Conference Room</td>
<td>Nathalie Fiveland 734-936-0566</td>
</tr>
<tr>
<td>NERS</td>
<td>2906 Cooley Bear Room</td>
<td>Peggy Grammer 734-615-8810</td>
</tr>
<tr>
<td>Robotics</td>
<td>ROB 550 Lab 422 SRB Building</td>
<td>Ella Atkins 734-615-7456</td>
</tr>
</tbody>
</table>
Maps
Duderstadt Center – 1st Floor

To Duderstadt Center

Connector

Atrium

Duderstadt Center – 2nd Floor

Sponsor Interview Rooms

North

North
Poster Presentations: Session 1

10:45 am – 12:45 pm
Performance Testing of an ASIC 64x64 Coarse Digital Correlator for Synthetic Aperture Radiometry
David Austerberry, Darren McKague, Chris Ruf, Alan Tanner

Using Chlorophyll Fluorescence to Assess the Impact of Agriculture on Northern Hemisphere CO₂ Seasonality
Zachary Butterfield, Gretchen Keppel-Aleks

Parameter Uncertainty on AGCM-simulated Tropical Cyclones Campaign
Fei He, Derek J. Posselt

An Analysis of Wind Gusts and the Effect on Electrical Outages Based on Season in Southeast Michigan
Lindsay Job

Investigating the Effects Urban Aerosols Have on a Mesoscale Convective System
Stacey Kawecki, Geoffrey M. Henebry, Allison Steiner

Rain Rate Retrieval Using the Coupled-Pixel Model (CPM) Atmospheric Retrieval Algorithm
Mary Morris, Christopher S. Ruf

Monte Carlo Photon Modeling to Explore the Dependence of Snow Bidirectional Reflectance on Grain Shape and Size
Adam M. Schneider, Mark G. Flanner

Simulated Transport of Pollen Produced by an Offline, Observation-based Emission Model
Matthew C. Wozniak, Allison Steiner
Sharing Control Between Humans and Automation System
Paul Boehm, Amir H. Ghasemi, R. Brent Gillespie

Quality-Driven Carshare Fleet Allocation under Uncertain One-way and Round-trip Demands
Zhihao Chen, Siqian Shen

Vehicle and Drive Cycle Simulation of a Vacuum Insulated Catalytic Converter
Rohil Daya, John Hoard, Maneet Singh, Dale Pickelman, Sreedhar Chanda

Passive Ammonia SCR After-Treatment System Evaluation for a Gasoline Engine Operating on Conventional and Advanced HCCI and SACI Combustion Modes
Jordan Easter, Stani Bohac

Near-wall Flow Measurements in a Canonical Internal Combustion Engine
Mark L. Greene, David L. Reuss, Volker Sick

Dynamical Analysis and Optimization of Heterogeneous Connected Vehicle Systems
Nan Li, Prof. Gabor Orosz

Composite Adaptive Internal Model Control and its Application to Boost-Pressure Control of a Turbocharged Gasoline Engine
Zeng Qiu, Jing Sun, Mario Santillo, Mrdjan Jankovic

Constructing User Specific Probabilistic Models of Driver Input via Maneuver Recognition
Gaurav Kumar Singh

A Scaled-down Testbed for Modeling Connected and Automated Vehicle Systems
Yan Zhao, Shihong Huang, Xuan Di, Henry X. Liu

Battery State of Health Monitoring by the Estimation of Side Reaction Current Density
Xin Zhou, Tulga Ersal, Jeffrey L. Stein, Dennis S. Bernstein
Isotropic Self-assembly Models for Anisotropic Convex Shapes
Carl Simon Adorf, Pablo F. Damasceno, Sharon C. Glotzer

Plasmon-induced Reconstruction of Ag-Pt Bimetallic Hollow Nanoparticles under Oxidation Conditions
Umar Aslam, Suljo Linic

Using SERS to Shed Light on the Mechanism of Photocatalytic Enhancement in Plasmonic Systems
Calvin Boerigter, Robert Campana, Matthew Morabito, Suljo Linic

Using Depletion to Tune Colloid Shape for Assembly
Andrew Karas, Jens Glaser, Sharon C. Glotzer

Stretchable Electronic and Photonic (meta)Materials from Self-Assembled Layers
Yoonseob Kim and Nicholas A. Kotov

Shear-enhanced Coagulation of Uniform and Janus Spheres in Dilute-sphere Limit: A Brownian Dynamics Simulation Approach
Maziar Mohammadi, Eric D. Larson, Jun Liu, Ronald G. Larson

Dynamic Covalent Assembly of Peptoid-Based Ladder Oligomers by Vernier Templating
Tao Wei, Jae Hwan Jung, Timothy F. Scott

Nanodroplet Mediated Histotripsy Validation on 3D Prostate Cancer Models
Omer Aydin, Eli Vlaisavljevich, Yasemin Y. Durmaz, Zhen Xu, and Mohamed E. H. El-Sayed

Integrated Electrochemical Impedance Spectroscopy Biosensing for the Real-time Monitoring of Immune Cell Cytokine Secretion
Brian Berger, Mansoor Nasir, Robert Nidetz, Katsuo Kurabayashi
Effect of Core Temperature on Peripheral, Cerebral, and Infrarenal Vasculature in MRI Studies
A. Colleen Crouch, Joan Greve

Second Harmonic Generation in Scleral Collagen as Non-Invasive Probe for Tissue Optical Properties
Michael Haines, Gideon Billings, Blake Charlebois, Larry Baitch, Almantas Galvanauskas, Mary-Ann Mycek, Aghapi Mordovanakis

Design of a Simple and Reliable Microfluidic, High-throughput, Single-cell Capture Scheme
A. Buke Hiziroglu, Yu-Chih Chen, Euisik Yoon

A Miniaturized Hemoretractometer (mHRM) for Blood Clot Retraction Testing
Zida Li, Xiang Li, Brendan McCracken, Yue Shao, Kevin Ward, and Jianping Fu

Two Different Device Physics Principles for Operating MoS$_2$ Transistor Biosensors and Comparison of MoS$_2$ and WSe$_2$ Field-Effect Transistor Biosensors
Hongsuk Nam, Bo-Ram Oh, Mikai Chen, Sungjin Wi, Da Li, Katsuo Kurabayashi, Xiaogan Liang

MRI Characterization of Venous Thrombosis in Murine Models
Olivia Palmer, Jose A Diaz, Ulrich Scheven, Amos Cao, Joan M. Greve

Viscoelastic Multicomponent Diffusion in Non-biodegradable Polymeric Matrix Tablets
Ali Salehi, Ronald G. Larson

Noise in the Mammalian Cochlea
Aritra Sasmal and Karl Grosh

Dorsal Root Ganglia Neural Recordings with a Novel Non-penetrating Thin-film Microelectrode
Z. J. Sperry, F. Wu, S. E. Ross, K. Kim, J. T. Bentley, E. Yoon, T. M. Bruns

Delineating Cell Signaling Architecture using Microfluidics and Computational Modeling
Madhuresh Sumit, Richard R. Neubig, Shuichi Takayama, Jennifer J. Linderman

Analyzing 3-D Knee Rotations During Running with and without Load Using Inertial Measurement Units
Rachel Vitali, Stephen Cain, Steven Davidson, Ryan McGinnis, Scott McLean, Noel Perkins
Duderstadt Atrium
FAT: Fluid Dynamics, Acoustics, and Thermal Sciences
Session Chair: Shao Teng (Alex) Chong

Ion Energetics of the Modes of the CubeSat Ambipolar Thruster
Timothy A. Collard, J. P. Sheehan, and Alec D. Gallimore

Remote Acoustic Sensing of Mechanical Changes in Vibrating Plates
T.J. Flynn, David R. Dowling

High-fidelity Hydrostructural Shape Optimization of a 3-D Hydrofoil
Nitin Garg, Gaetan K. W. Kenway, Joaquim R. R. A. Martins, Yin L. Young

Towards Multidimensional High-Order Computational Fluid Dynamics Methods
J. Brad Maeng

Role of Secondary Flows in Flow Separations Associated with 3D SBLI
Rohan Morajkar, Robin Klomparens, Prof. James Driscoll, Prof. Mirko Gamba

Prediction of Auto-ignition Regimes in Turbulent Reacting Flows with Thermal Inhomogeneities
Pinaki Pal, Hong G. Im, Margaret S. Wooldridge

Broadband Vibration Suppression using Distributed Vibration Absorbers and an E-Damping Concept
Katherine Reichl, Daniel Inman

Improving High-Order Finite Element Approximation Through Geometrical Warping
Devina P. Sanjaya, Krzysztof J. Fidkowski

Synthetic Inflow Conditions for Large Eddy Simulations of Spatially Evolving Wall Bounded Flows
Siddhesh Shinde, Eric Johnsen, Kevin Maki

Understanding Coaxial Helicopter Rotor Interaction using a Two-Dimensional Unsteady Vortex Method
Puneet Singh
Nonlinear Signal Processing Algorithm for Remote Acoustic Source Localization in a Shallow Ocean
Brian M. Worthmann, David R. Dowling

Duderstadt Atrium

IOF: Industrial, Operations, and Financial Engineering
Session Chair: Nima Salehi

Macroscopic Look at the Equity Markets
Abdullah Al-Shelahi, Romesh Saigal

Scheduling Downloads Under Uncertainty During a Small Satellite Mission
Jeremy Castaing, Amy Cohn, James Cutler

Nonparametric Data-Driven Algorithms for Multi-Product Inventory System
Cong Shi, Weidong Chen, Izak Duenyas

Dual Decomposition Algorithms for Solving Chance-constrained Binary Programs
Yan Deng, Siqian Shen, Jon Lee

Simulating a Medical Observation Unit for a Pediatric Emergency Department
Mark Grum, Gabriel Zayas-Caban PhD, Amy Cohn PhD, Michelle Macy MD

Two-Stage Distributionally Robust Unit Commitment with Generalized Linear Decision Rules
Yuanyuan Guo, Ruiwei Jiang, Jianhui Wang

Exact Methods for Finding Pareto-Dominant Resident Shift Schedules for a Pediatric Emergency Department
Young-Chae Hong, Amy Cohn, Marina Epelman

Scheduling Medical Residents With Conflicting Requests For Time-Off
Brian Lemay, Amy Cohn, Marina Epelman

Improving Patient Flow in an Outpatient Chemotherapy Infusion Center
Pamela Martinez Villarreal, Matthew Rouhana, Prof. Amy Cohn, Carolina Typaldos
Innovations in Surgical Instrument Reprocessing for Improved Patient Safety and Financial Stewardship at UMHS
Rama Mwenesi, Nina Scheinberg, Mark Grum, Amy Cohn, Joseph Derosier, James P. Bagian, Shawn Murphy

Determining an Optimal Schedule for Pre-mixing Chemotherapy Drugs
Donald Richardson, Amy Cohn PhD, Alon Weizer MD, Carolina Typaldos, Kelly Procalio PharmD

Optimal Double McCormick for Trilinear Monomials*
Global Optimization of Non-convex Functions
Emily Speakman, Jon Lee

Surface Defect Monitoring Using Robust Generalized Singular Value Decomposition
Yaser Zerehsaz, Jionghua (Judy) Jin

Data-driven Optimization Approaches for Optimal Power Flow with Uncertain Reserves
Yiling Zhang, Siqian Shen, Johanna L. Mathieu

EECS Atrium
IVM: Integrated Circuits, VLSI, and Microsystems
Session Chair: Chunyang Zhai

Whole Angle Mode Micro-machined Fused-Silica Birdbath Resonator Gyroscope
Christopher Boyd, Jong-Kwan Woo, Jae Yoong Cho, Tal Nagourney, Khalil Najafi

Phase Change Optical Shutter with Subwavelength Metallic Line Array
Mohsen Jafari, Mina Rais-Zadeh

Very Large Scale Analog (VLSA): Fully Synthesizable Clock Generators
David M. Moore, David D. Wentzloff

Temperature Compensated Fused Silica Resonators Using Embedded Nickel-Refilled Trenches
Adam Peczalski, Mina Rais-Zadeh

Modular Stacked Variable-Compression Ratio Multi-State Gas Micropump
Amin Sandoughsaz, Luis P. Bernal, Khalil Najafi
AC Electroosmosis Coupled LSPR Nanobiosensor for Ultralow Concentration Biomarkers Detection
Yujing Song, Meng Ting Chung, Pengyu Chen, Robert Nidetz, Katsuo Kurabayashi

3-D Biomimetic Sensor Arrays
Stacey Tang, Khalil Najafi

Development of RF Ohmic Switches Using GeTe Phase Change Material
Muzhi Wang, Feng Lin, Mina Rais-Zadeh

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**Duderstadt Atrium**

MDM: Multidisciplinary Design, Manufacturing, and Mechatronics
Session Chair: Sourav Mohanty

Aerostructural Design Optimization of an Adaptive Compliant Trailing Edge on an Aircraft Wing for Improved Fuel Efficiency
David Burdette, Joaquim R.R.A. Martins

Fabrication Encoded Piezoresistive Properties in Thin Film Polymer Composites
Andrew R. Burton, Jerome P. Lynch

2D Material Based Field-effect Transistor Arrays Fabricated via Nanoimprint-assisted Shear Exfoliation (NASE)
Mikai Chen, Hongsuk Nam, Hossein Rokni, Sungjin Wi, Jeong Seop Yoon, Katsuo Kurabayashi, Wei Lu, and Xiaogan Liang

Low Cost and Energy Efficient Vibration Reduction of Ultra-precision Manufacturing Machine
Jihyun Lee, Amir H. Ghasemi, Chinedum Okwudire

Active Assist Device for Precision Scanning Stages
Deokkyun Yoon, Chinedum Okwudire

Grinding Wheel Dynamics and Plaque Removal Mechanism in Atherectomy
Yihao Zheng, Barry Belmont, Albert J. Shih
Duderstadt Connector

MSE: Material Science and Engineering
Session Chair: Ryan Hall

Short Crack Growth and Very High Cycle Fatigue Behavior of Magnesium Alloy WE43
Jacob Adams, John Allison, J. Wayne Jones

Influence of Hot Isostatic Pressing on the Microstructure and Tensile Behavior of HPDC Mg AM50 Alloys
Erin Deda, John Allison

Nanoscale Orientation Effects on Carrier Transport in a Low-Band-Gap Polymer
Ban Xuan Dong, Bingyuan Huang, Aaron Tan, Peter F. Green

Biorealistic Implementation of Synaptic Behaviors using Metal Oxide Memristors with Second Order Effects
Chao Du, Wen Ma, Sungho Kim, Wei D. Lu

Thermal Stress Analysis of Photovoltaic Modules using Thermo-elastic Modeling
Nasreddine El-Dehaibi

3-D Crystal Plasticity Finite Element Method: Modeling and Validation of Deformation Response in Magnesium Alloys
Sriram Ganesan, Veera Sundararaghavan

Catalyst Migration in Conjugated Polymer Synthesis
Peter K. Goldberg, Anne J. McNeil

Designing Durable Icephobic Surfaces
Kevin Golovin, Sai Pradeep Reddy Kobaku, Edward T. DiLoreto, Duck Hyun Lee, Anish Tuteja

Charge Anisotropy of Gold Nanorods without Light
Ji-Young Kim, Myung-Geun Han, Miao-Bin Lien, YimeiZhu, Ted Norris, Nicholas A. Kotov

Glycocalyx-mimetic Interfaces with Tunable Surface Charge: Electrokinetic Investigation and Adsorption Kinetics
Ramya Kumar, Kenneth Cheng, Julia Prisby, Kai Liu, Joerg Lahann

Cross Polarization for Improved Digital Image Correlation Surface Deformation Measurements
William LePage, J.A. Shaw, Sam Daly
Layer-by-Layer Films on Spiky Hedgehog Particles
Douglas Montjoy, Joong Hwan Bahng, Nicholas Kotov

Recrystallization, Grain-growth, and Low-cycle Fatigue Behavior of Magnesium
Aeriel D. Murphy, John E. Allison

Surface X-Ray Diffraction Studies on ZnSnN2 Thin Films
Nancy Senabulya, Yongsoo Yang, Christian M. Schlepütz, Nathaniel Feldberg, Robert A. Makin, Christina Jones, James Mathis, Steven Durbin, Roy Clarke

Tunable Polymer-Graphene Oxide (GO) Composite Film for Efficient CTC Isolation and Enumeration

Paper Art Inspired Tunable & Multifunctional Composites
Terry C. Shyu, Paul M. Dodd, Pablo F. Damasceno, Aaron Lamoureux, Matthew Shlian, Lizhi Xu, Max Shtein, Sharon C. Glotzer, Nicholas A. Kotov

Wettability Based Patterning of Ovarian Cancer Cells on Paper
Sarah A. Snyder, Mathew Boban, Chao Li, Anish Tuteja, Geeta Mehta

Predicting the Separation of CO2/He, CO2/CH4, and CO2/N2 Mixtures in an Elastic Layered Metal-Organic Framework
Francisco Sotomayor, Christian Lastoskie

Thermodynamic Properties of Aqueous PEO-PPO-PEO Micelles of Varying Hydrophilicity with Added Cisplatin Determined by Differential Scanning Calorimetry
Andre L. Thompson, Brian J. Love

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**EECS Atrium**

**SCE: System and Communication Engineering**

Session Chair: Morteza Sheikhsofla

A New Scheme for Distributed Function Computation
Mohsen Heidari, Farhad Shirani, Sandeep Pradhan

Impact of Community Structure on Cascades
Mehrdad Moharrami, Vijay Subramanian, Mingyan Liu

Risky Business: Fine-grained Data Breach Prediction Using Business Profiles
Armin Sarabi, Parinaz Naghizadeh, Yang Liu, Mingyan Liu
New Lattice Codes for Multiple-descriptions  
Farhad Shirani, Mohsen Heidari, Sandeep Pradhan

Mechanism Design for Fair Allocation  
Abhinav Sinha, Achilleas Anastasopoulos

A Systematic Process for Evaluating Structured Perfect Bayesian Equilibria in Dynamic Games with Asymmetric Information  
Deepanshu Vasal, Vijay Subramanian, Achilleas Anastasopoulos

Capacity of the General Trapdoor Channels  
Jui Wu, Achilleas Anastasopoulos

**EECS Atrium**

**SIC: Signal and Image Processing, Computer Vision**  
Session Chair: Zachariah Sperry

Embracing Data Science with Graph Mining: Action Recommendations for Cyber Security, Clustering, and Beyond  
Pin-Yu Chen, Alfred Hero, Sutanay Choudhury

Consistency of a Fixed Bandwidth Kernel Density Estimator  
Efrén Cruz Cortés, Clay Scott

Kernel Approximation for Transfer Learning  
Aniket Anand Deshmukh, Clayton Scott

Modeling 3D Error Propagation from 2D Visual tracking with Applications in Quadrotor Tracking  
Vikas Dhiman, Madan Ravi Ganesh, Wei Ding, Dimitra Panagou, R. N. Severinghaus, Jason J. Corso

Meta Learning of Bounds on the Bayes Classifier Error  
Kevin R. Moon, Veronique Delouille, Alfred O. Hero

The Accuracy of Singular Vectors of Thresholded Low-rank Plus Noise Plus Outlier Matrices  
Brian E. Moore, Raj Rao Nadakuditi

Sparse Equisigned PCA  
Arvind Prasadan, Raj Rao Nadakuditi
New Image Reconstruction Algorithm Guided by Local Gradient SVD
Matthew A. Prelee, David L. Neuhoff

EmoShapelets: Capturing Local Dynamics of Audio-visual Affective Speech
Yuan Shangguan, Emily Mower Provost

Robust Orbit Determination: A Machine Learning Approach
Srinagesh Sharma, James Cutler

Algorithms for Estimation of Low Rank Matrices with Kronecker Structured Singular Vectors
Raj Tejas Suryaprakash, Raj Rao Nadakuditi

Action Understanding with Multiple Classes of Actors
Chenliang Xu, Caiming Xiong, Jason J. Corso

Recognizing Emotion from Singing and Speaking Using Shared Models
Biqiao Zhang, Georg Essl, Emily Mower Provost
Richard and Eleanor Towner Prize for Outstanding Ph.D. Research Poster Competition

Pierpont Commons Atrium
12:30 pm – 2:30 pm
Azadeh Ansari – EE
Q-Enhanced Depletion-mediated AlGaN/GaN Resonators

Alex Burnap – IS+D
Balancing Design Freedom and Brand Recognition in the Evolution of Automotive Brand Styling

Johann Dahm – AERO
Robust and Efficient hp-adaptation for Discontinuous Galerkin Methods

Abdoulaye Djire – ChE
Charge Storage Mechanisms in Nanostructured Carbides and Nitrides for Energy Storage

Jason Geathers – ME
Examining the Role of Microstructure and Environment on Small Fatigue Crack Growth Behavior in Ti-6242S

Marc T. Henry de Frahan – ME
Simulations of Shocks and Interfaces in Highly Compressible Multiphase Flows

Pooyan Kazemian – IOE
Dynamic Personalized Monitoring and Treatment Control of Glaucoma

Yelin Kim – EE:Sys
Audio-Visual Emotion Recognition: Time-Series Analysis and Segmentation for Complex and Dynamic Data

Kayse Lee Maass – IOE
Mitigating Hard Capacity Constraints in Facility Location Modeling

Matthew J. Muckley – BME
Improving fMRI Scans Using Low Rank Modeling

Parinaz Naghizadeh – EE:Sys
Provision of Non-Excludable Goods on Networks: Incentives, Exit Equilibria, and Applications to Cyber-Security

Shruti Padmanabha – CSE
Energy Efficient Processing through Fine-grained Heterogeneity

Marc Paff – NERS
Screening for Smuggled Nuclear Weapons with Novel Radiation Detection Systems at our Country’s Borders

JoonOh Seo – CEE
Understanding of Workers’ Physical Demand and Its Impact on Construction Operation
Guangsha Shi – MS&E
SnSe: a Multifunctional Material with Exceptional Thermoelectric and Photovoltaic Performance

Diana R. Thatcher – CLASP
Modeling the Multi-decadal Climatology of the Extratropical Transition of Tropical Cyclones in the North Atlantic

Sriram Vaidyanathan – BME
Quantifying Cell Membrane-Polymer Interactions: Implications for Endosomal Escape and Successful Gene Expression

Daniel Walter – NERS
A High Fidelity Multiphysics Modeling Framework and Validation of CRUD Deposition on Nuclear Fuel Rods

W.C. Wan – CLASP
Observations of Vortex Merger and Growth Reduction in a Dual-mode, Supersonic Kelvin-Helmholtz Instability Experiment

Jihyeon Yeom – MACRO
Inorganic Chiral Nanomaterials: Design Strategies and Origin of Homochirality

Scott R. Zavada – MACRO
Rapid, Puncture-initiated Healing via Oxygen-mediated Polymerization

Cheng Zhang – EE
Optical Properties and Optoelectronic Applications of Nano-size Metallic Films and Metamaterials

Shuyi Zhang – MS&E
In-situ TEM on Catalysts at Atmospheric Pressure with a Novel Gas Cell Technique

Sheng Zheng – ChE
Modeling Wax Deposition in Oil Pipelines with Fundamentals of Thermodynamics and Transport
Poster Presentations: Session 2

1:30 pm – 3:30 pm
A New Technique for Designing Scalable Phased Arrays
Fatemeh Akbar, Amir Mortazawi

Towards the Analytical Design of Tensor Metasurfaces
Nikolaos Chiotellis, Anthony Grbic

Compact, Low-power, Low-VHF Radios for Enhanced Networking in Complex Environments
Jihun Choi, Kamal Sarabandi

A Phase-tunable, Liquid Crystal-based, Metamaterial Sub-reflector
Amanda Couch, Anthony Grbic

Simulation of Magnetic Nozzle Plasma Rockets
Frans H. Ebersohn, J. P. Sheehan, Alec D. Gallimore, John V. Shebalin

Time-resolved Ion Velocity Distribution Measurements Near the Hollow Cathode of a Hall Thruster
Marcel Georgin, Christopher Durot, Alec D. Gallimore

Wireless Power Transfer with Non-Diffracting Beams
Jason Daniel Heebl, Anthony Grbic

Data-cubes of Vegetated Surfaces for Active Algorithm of SMAP: Model Development, Validation and Retrieval
Huanting Huang, Seung-bum Kim, Leung Tsang, Xiaolan Xu, Tien-Hao Liao, Thomas J. Jackson, Simon Yueh

Model Validation for Plasma Contactor Mediation of Electron Beam Charged Spacecraft
Omar Leon, Grant Miars, Dr. Brian Gilchrist

Simulating Proton Radiographs of Weibel-like Magnetic Fields
Joseph Levesque, Frederico Fiuza

Snow Pack and Lake Ice Pack Remote Sensing using Wideband Autocorrelation Radiometry
Seyedmohammad Mousavi, Roger De Roo, Kamal Sarabandi, Anthony England
The Time Evolution of Streamer Discharges in Single and Multiple Bubbles in Water
Selman Mujovic, Joe Groele, John Foster

Generating Arbitrary Radiation Patterns with Metasurfaces
Brian B. Tierney, Anthony Grbic

All-directions through the Wall Radar Imaging using a Limited Number of Moving Transceivers
Behzad Yektakhah, Kamal Sarabandi

High Q BST Based Switchable FBARs and their Application as an IR Resonant Sensor
Milad Zolfagharloo Koohi, Amir Mortazawi

EECS Atrium

CDR: Control, Dynamics, and Robotics
Session Chair: Berk Atlin

Reduced-order Models of Bladed Disks with Friction Ring Dampers
Seunghun Baek, Bogdan Epureanu

Dynamic Modeling, Trajectory Optimization, and Control of a Flexible Kiteplane
Ryan James Caverly, James Richard Forbes

Constrained Control for Landing on an Asteroid with Model Uncertainty
William Dunham, Christopher Petersen, Ilya Kolmanovsky

Optimal Defense Policies for Partially Observable Spreading Processes on Bayesian Attack Graphs
Erik Miehling, Mohammad Rasouli, and Demosthenis Teneketzis

Measuring Human Interest during Technical Poster Presentations
Meghan Richey, Emily Mower Provost, Dawn Tilbury

Real-Time Hybrid Simulation of Manufacturing Systems for Performance Analysis and Control
Miguel Saez, Francisco Maturana, Kira Baron, Dawn Tilbury

Distributed Reactive Control Protocol Synthesis for Aircraft Electric Power Systems via SAT Solving
Yunus Emre Sahin, Necmiye Ozay
Improving Teleoperation Performance with Semi-Autonomous Behaviors
Justin Storms, Dawn Tilbury

Feedback Control during Mode Transition for a Marine Dual Fuel Engine
Hao Wang, Ilya Kolmanovsky, Jing Sun, Yoshi Ozaki

Synthesis of Robust Switching Protocol for Vehicle Engine Thermal Management
Liren Yang, Necmiye Ozay

Optimizing Motion and Morphology: The Effect of Series and Parallel Elasticity on a Two-Dimensional Hopper
Yevgeniy Yesilevskiy, Zhenyu Gan, C. David Remy

Property Enforcement for Partially-Observed Discrete-Event Systems
Xiang Yin and Stéphane Lafortune

_Duderstadt Atrium_

**CEE: Civil and Environmental Engineering**
Session Chair: Zhijie Wang

Thermo-mechanical Shell Elements and Coupled Fire-structure Simulations
Paul A. Beata and Dr. Ann E. Jeffers

Effect of Shear Stud Layout on the Behavior of Reinforced Concrete Slab-column Connections under Gravity Loading
Thai X. Dam, James K. Wight, Gustavo J. Parra-Montesinos

Development of a Finite Element Model for Reliability Assessment of a Long-span Railroad Truss Bridge Exposed to Multi-Hazards
Katherine A. Flanigan, Jerome P. Lynch

A Parallel Execution of Adaptive Structural Control in Dual-core Wireless Sensor Networks
Mitsuhito Hirose, Jerome P. Lynch
Subspace System Identification Method for Vehicular Load Estimation using Vehicle-bridge Monitoring System
Rui Hou, Jerome P. Lynch

Assessing the State of Michigan’s WWAT in Evaluating High Volume Groundwater Withdrawal
Ivan S. Jayawan, Avery H. Demond, Brian R. Ellis

A Novel Method to Determine Fatigue Life of Naval Vessels
Nephi R. Johnson, Sean M. C’Connor, Anne K. Magnus, Matthew D. Collette, Jerome P. Lynch

Monitoring and Control of Indoor Building Air Quality using Mechanical and Natural Ventilation
Da Li, Carol C. Menassa, Vineet R. Kamat

Vision-Based Automated Action and Posture Analysis of Construction Workers
Meiyin Liu, SangHyun Lee

Electromechanical Development of a Low-cost End Effector Pose Estimation System for Articulated Excavators
Kurt M. Lundeen, Suyang Dong, Nicholas Fredricks, Manu Akula, Jongwon Seo, Vineet R. Kamat

Real-time Building Energy and Comfort Parameter Monitoring Using Autonomous Indoor Robots
Bharadwaj R. K. Mantha, Carol C. Menassa, and Vineet R. Kamat

Finite Element Analysis of Steel-Concrete Composite Floor Systems under Traveling Fire Conditions
Jason Martinez, Dr. Ann E. Jeffers

Two-step Design Method for Engineered Geopolymer Composite
Motohiro Ohno, Victor C. Li

Designing a Facility to Improve Pedestrian Safety in Ethiopia
Shreeniwas Sharma Poudel, Ishi Keenum

What Can Seashells Teach Us about Designing Durable, Resilient Materials for Sustainable Infrastructure?
Daniel Soltan, Joshua Cousins, Richard Robertson, Maria Lemos, Victor C. Li

User-guided Dimensional Analysis of Indoor Scenes using Depth Sensors
Yong Xiao, Chen Feng, Yuichi Taguchi, Vineet R. Kamat
Long-Term Modal Analysis and Condition Assessment of a Wirelessly Monitored Wind Turbine
Jingyuan Zhang, Yilan Zhang, Eunshin Byon, Jerome P. Lynch

Determining Ice Pressure Distribution on Ice-force Measuring System (IFMS) Panel using Orthotropic Plate Inverse Theory
Yuxi Zhang, Dale G. Karr, A. W. England, L. van Nieuwstadt, Roger De Roo, D. Lyzenga

Duderstadt Connector

MTR: Medicine and Translational Research
Session Chair: Sophia Pilipchuk

Side-viewing Confocal Endomicroscope for In Vivo Imaging
Xiyu Duan, Haijun Li, Chi Qiu, Bishnu P. Joshi, Asha Pant, Kenn R. Oldham, Thomas D. Wang

Noninvasive Ultrasonic Transcranial Brain Therapy using Histotripsy
Tyler Gerhardson, Jonathan Sukovich, Steven Allen, Zhen Xu

Dental Caries Diagnosis with Fluorescent Bio-based Nanoparticles
Nathan Jones, Sywe-Ren Chang, Brian Clarkson, Joerg Lahann

Fiberless Multicolor Optoelectrodes for Neural Circuit Analysis
Komal Kampasi, Eran Stark, John Seymour, Kyoungwan Na, Herbert G. Winful, György Buzsaki, Kensall D. Wise, Euisik Yoon

Application of a Graphene Oxide Based Microfluidic Device (GO Chip) to Prostate Cancer Circulating Tumor Cell Capture and Analysis
Molly Kozminsky, Hyeun Joong Yoon, Nallasivam Palanisamy, Todd Morgan, Sunitha Nagarath

Development of Targeted, Enzyme-activated Nano-conjugates for Hepatic Cancer Therapy
Sibu Kuruvilla, Gopinath Tiruchinapally, Mahmoud El Azzouny, Mohamed EI-Sayed

Microfluidic Study of Circulating Tumor Cells from Different Venous Sources in Early Lung Cancer
Regeneration of the Bone-ligament Complex Using 3D Printed, Patterned Polymeric Substrates
S. Pilipchuk, A. Monje, Y. Jiao, J. Hao, L. Kruger, C. Flanagan, S. J. Hollister, W.V. Giannobile

EMG-Based Weight Classification during a Symmetrical Lifting Task: A Pilot Study
Deema Totah, Lauro Ojeda, Daniel D. Johnson, Deanna Gates, Emily Mower Provost, Kira Barton

RF Pulse Design for MRI with Direct Constraint on Peak Pulse Amplitude
Sydney Williams, Douglas C. Noll, Jeffrey A. Fessler

Photoacoustic In Vivo Imaging Of Hepatocellular Carcinoma With EGFR-targeting Peptide
Quan Zhou, Zhao Li, Juan Zhou, Bishnu Joshi, Xiyu Duan, Thomas D. Wang
CFD-grade Experiments of Thermal Striping in Nuclear Reactor Coolant Branch Lines and CFD Validation
John Downing, Annalisa Manera, Victor Petrov

Comparison of Overlapping and Separate Domain Coupling Methods for 1D Flow Systems with STAR-CCM+ and TRACE
Timothy P. Grunloh, Annalisa Manera

Active Interrogation of Plasma-Liquid Boundary using 2D Plasma-in-Liquid Apparatus
Janis Lai, John E. Foster

DBD on Liquid Covered Tissue: Modeling Long-Timescale Chemistry
Amanda M. Lietz Mark J. Kushner

Development of Biomechanical Models to Describe Dose-volume Response to Liver Stereotactic Body Radiation Therapy (SBRT) Patients
Molly McCulloch, Daniel Polan, Guillaume Cazoulet, Mary U. Feng, Theodore S. Lawrence, Randall K. Ten Haken, Kristy K. Brock

High Resolution Experiments of Velocity and Concentration Fluctuations in a Jet Flow
Daniel Nunez, Victor Petrov, Thien Duy Nguyen, Akshay Dave, Annalisa Manera

Application of the Method of Manufactured Solutions to Sn Equation in Planar Geometry
Jipu Wang, Benjamin Collins, William Martin

A Multi-level Quasi-Static Kinetics Method for Pin-Resolved Transport Transient Reactor Analysis
Ang Zhu, Yunlin Xu, Thomas Downar
EECS Atrium

OPS: Optics, Photonics, and Solid-State Devices
Session Chair: Jose Mesa

Dynamic Terahertz Switch Comprising Cylindrical Spoof Surface Plasmon Polariton Waveguide
Mahdi Aghadjani, Pinaki Mazumder

Hybrid Memristor/CMOS Integration with 3D Vertical Structure
Fuxi Cai, Siddharth Gaba, Yeonjoo Jeong, Wei Lu

Vertical Ge/Si Core/Shell Nanowire Junctionless Transistor
Lin Chen, Fuxi Cai, Ugo Otuonye, Wei D. Lu

Measurement of Charge Balance and its Effect on Blue Electrophosphorescent OLED Lifetime
Caleb Coburn, Jaesang Lee, Stephen Forrest

A Flexible Thin-film InGaAs Photodiode Focal Plane Array (FPA)
Dejiu Fan, Kyusang Lee, Stephen R. Forrest

Ternary Alloys of Rare Earth Scandates as Solution-processed High-k Dielectrics
Wenbing Hu, Rebecca L. Peterson

Bilayer Interdiffused Heterojunction Organic Photodiodes with Extremely Suppressed Dark Current
Hyunsoo Kim, Jerzy Kanicki

Current Progress in Blue Phosphorescent Organic Light-emitting Diodes (PHOLED)
Jaesang Lee, Yifan Zhang, Hsiao-Fan Chen, Thilini Batagoda, Caleb Coburn, Peter Djurovich, Mark Thompson, Stephen Forrest

Ptychographic Imaging on a High Harmonic Generation X-Ray Source
Albert Liu, Jonathan Gigax, Edwin Fohtung, Richard Sandberg

Graphene Ambipolar Nanoelectronics for High Noise Rejection Amplification
Che-Hung Liu, Qi Chen, Chang-Hua Liu, Zhaohui Zhong

Temporal Information Encoding in Dynamic Memristive Devices
Wen Ma, Lin Chen, Chao Du, Wei D. Lu
Silicon Photovoltaics for Infrared Energy Harvesting in mm-Scale Systems
Eunseong Moon, Jamie D. Phillips

Enhanced Light Extraction from Organic Light-emitting Devices using a Sub-anode Grid
Yue Qu, Michael Slootsky, Stephen R. Forrest

Schottky Diodes Made with Solution-processed Amorphous Zinc Tin Oxide Semiconductor
Youngbae Son, Jiabo Li, Rebecca Lorenz Peterson

Transforming Organic Photovoltaics (OPV) into a Fully Practical Energy Solution
Byeongseop Song, Kyusang Lee, Quinn C. Burlingame, Stephen R. Forrest

High-efficiency AlGaAs Indoor Photovoltaics
Alan S. Teran, Inhee Lee, Wootaek Lim, Gyouho Kim, David Blaauw, Jamie D. Phillips

Fabrication of Tungsten Diselenide Photovoltaic Devices Using Surface-charge Transfer (SCT) Doping Mechanism
Sungjin Wi, Da Li, Mikai Chen, Hongsuk Nam, Edgar Meyhofer, Xiaogan Liang

Selector Devices for Crossbar Resistive Memory Arrays
Jiantao Zhou, Ming Wang, Sungho Kim, Kuk-Hwan Kim, Wei D. Lu

EECS Atrium
PEN: Power and Energy
Session Chair: Ayse Buke Hiziroglu

Cooperate CdS QDs and Ag@PVP to Improve Efficiency of Dye Sensitized Solar Cell
Omid Amiri, Masoud Salavati-Niasari

Effect of Torrefaction on the Pyrolysis of Centimeter-Scale Pine Wood Particles
Yawei Chen, Weiyu Cao, Arvind Atreya

Adaptive State Estimation and Control of Thermostatic Loads for Real-time Energy Balancing
Stephanie J. Crocker, Johanna L. Mathieu

Magnetoelastic Energy Harvester
Brittany C. Essink, Jared D. Hobeck, Robert B. Owen, Daniel J. Inman
Shooting Methods for Computation of Parameter Stability Boundaries in Fault Induced Delayed Voltage Recovery
Michael Fisher, Ian Hiskens

Temporal Instanton Analysis: Identifying Vulnerability in Transmission Networks
Jonas Kersulis, Dr. Ian Hiskens, Dr. Michael Chertkov, Dr. Scott, Backhaus, Dr. Daniel Bienstock

Stability Assessment of Vanadium(III) Acetylacetonate Complexes for Non-Aqueous Redox Flow Batteries
Jonathan Kucharyson, James Suttil, Ismailia Escalante-Garcia, and Levi Thompson

Chance-Constrained Optimal Power Flow with Uncertain Load Control
Bowen Li, Johanna Mathieu

An Improved Initialization for the AC-QP OPF Method Using an SOCP Relaxation
Jennifer F. Marley, Ian A. Hiskens

Corrective Model-Predictive Control in Large Electric Power Systems
Jonathon Martin, Ian Hiskens

Power Systems Scheduling Incorporating Histogram Control of Electric Loads with Energy Storage
Md Salman Nazir, Francisco Galiana, Alexandre Prieur

Spatial Multi-Objective Optimization of Electricity System in Indonesia: The Role of Renewable Energy in a Sustainable Energy System
Yoga Wienda Pratama, Widodo Wahyu Purwanto, Tetsuo Tezuka

A Methodology for Generation Expansion Planning in Restructured Electricity Industry
Mohammad Rasouli, Demosthenis Teneketzis

Characterizing the Stability of Li$_7$La$_3$Zr$_2$O$_{12}$ Solid State Electrolyte and Li Anode Interface as a Function of Current Density
Asma Sharafi, Micheal Naguib, Collin Becker, Jagjit Nanda, Jeffery Wolfentstine, Jeff Sakamoto

Sequential Contracts for Uncertain Electricity Resources
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