Sixth Annual Student Research Symposium

Friday, November 5th, 2010
## Schedule

**10:00 AM**  
opening remarks

**10:10 AM**  
research talks

**10:10 AM**  
Hong Seok Choi  
Polymer-coated silica ultra-high-Q microresonators  
(with Xiaomin Zhang and Andrea M. Armani)

**10:25 AM**  
Nitin Nair  
A novel way for landfill gas clean-up using a flow-through catalytic membrane reactor  
(with M.M Yousef Motamedhhashemi, Theodore Tsotsis, and Fokion Egolfopoulos)

**10:40 AM**  
Patrick Haller  
ILiCVD: Vapor-phase polymerization in the presence of ionic liquids  
(with Malancha Gupta)

**10:55 AM**  
Su Li  
Confocal imaging to quantify passive drug transport across biomimetic lipid membranes  
(with Noah Malmstadt)

**11:10 AM**  
Christina Naify  
Transmission loss and dynamic response of membrane-type locally resonant acoustic metamaterial arrays  
(with Steven Nutt)

**11:25 AM**  
Junyi Arthur Xu  
Investigation of mass transfer in gas shale  
(with Zhenshuo Liu, Kristian Jessen, and Theodore Tsotsis)

**11:40 AM**  
Ting-Wei Yeh  
GaN nanorod arrays for efficient LEDs grown by selective area growth  
(with Lawrence Stewart, Hyung-Joon Chu, and P.Dan Dapkus)

**11:55 PM**  
Yuning Alex Lei  
Gene editing of human embryonic stem cells via an engineered baculoviral vector carrying zinc finger nucleases  
(with Pin Wang)

**12:10 PM**  
Artin Petrossians  
Electrodeposition and characterization of thin-film platinum-iridium alloys  
(with Florian B. Mansfeld)

**12:25 PM**  
lunch and poster session

**2:30 PM**  
awards ceremony
Graduate student posters

Jingran Ma
Real-time model predictive control for energy and demand optimization of commercial buildings
(with S. Joe Qin)

Panteha Mirarefi
Photo-control of dynamic-form-function relationship of enzymes
(with Ted Lee)

Jing Xu
Hybrid silicon-carbon nanostructured composites as superior anodes of lithium ion batteries
(with Chongwu Zhou)

Ashley Maker
Design and fabrication of waveguide sensors
(with Heather K. Hunt and Andrea Armani)

Peichi Celine Hu
Microfluidic fabrication of asymmetric giant lipid vesicles
(with Noah Malmstadt)

James L. Young
Amorphous mixed metal oxides for photoelectrochemical water splitting
(with Chongwu Zhou)

Farnoosh Fazlollahi
Translocation properties of PEGylated quantum dots across rat alveolar epithelial cell monolayers
(with Zea Borok, Kwang-Jin Kim and Edward D. Crandall)

Tayeb A. Tafti
Characterizing fractures in geysers’ geothermal field using soft computing
(with Debotyam Maity and Fred Aminzadeh)

Yu-Hsuan Wu
Mitochondrial membrane permeabilization with nanosecond pulsed electric fields
(with Tina Batisa-Napotnik, Martin A. Gundersen, Damijan Mikavcic, and P. Thomas Vernier)

Xiaomin Zhang
Ultimate quality factor of silica microtoroid resonators
(with Hong Seok Choi and Andrea M. Armani)

Mitra Abdollahi
Catalytic hydrogen generation from biomass
(with J. Yu, Hyun Tae Hwang, Muhammad Sahimi, and Theodore T. Tsotsis)

Yousef Motamedhashemi
A new catalytic membrane reactor concept for the destruction of chemical warfare agents
(with Nitin Nair, Fokion Egolfopoulos, and Theodore T. Tsotsis)

Zachary Lingley
A new approach to nanocrystal quantum dot ligand exchange
(with Siyuan Lu and Anupam Madhukar)
Qiyao Feng  
A fundamental study of the oxidation characteristics and pollutant emissions of modern biodiesel fuels  
(with Yang L. Wang, Fokion N. Egolfopoulos, and Theodore T. Tsotsis)

Basabdatta Roychudhuri  
Water inversion in shale materials  
(with Kristian Jessen and Theodore T. Tsotsis)

Lessa Grunenfelder  
Void formation in prepreg processed composites: moisture and pressure effects  
(with Steven Nutt)

Yarong Laura Liu  
Site-specific modification of AAV2 vector by using the genetically encoded aldehyde tag  
(with Pin Wang)

Biliang Hu  
IDLV targeting DCs for in vivo immunization  
(with Pin Wang)

I-Fang Lee  
Three-dimensional x-ray microbeam measurement of full strain tensors in deformed single-crystal copper  
(with Michael E. Kassner)

Mohammad Javaheri  
Integration of counter-current relative permeability in the simulation of CO$_2$ injection into saline aquifers  
(with Kristian Jessen)

Francisco Navarro  
Exciton diffusion length measurement of a platinum tetrephenylbenzoporphyrin for design and optimization of organic photovoltaics  
(with Matthew Whited, Peter I. Djurovich, and Mark E. Thompson)

Mohammad Evazi Yadecuri  
Unstructured coarse grid generation based on streamline clustering  
(with Kristian Jessen)

Undergraduate student posters

Cristofer Flowers  
Patterning vapor-deposited polymers onto porous substrates  
(with Patrick Haller and Malancha Gupta)

Anna Harley-Trochimczyk  
A synthetic model of ceramide-Fas colocalization  
(with Noah Malmstadt)

Carol Soteropulos  
Development of optical biosensors for label-free, single-molecule binding studies  
(with Heather K. Hunt and Andrea M. Armani)

Brian Rose  
Silica sol-gel synthesis for integrated photonics  
(with Heather K. Hunt and Andrea M. Armani)