

Florida Inorganic and Materials Symposium 2024 (FIMS 2024)

presented by the

**University of Florida
Department of Chemistry
and
Center for Catalysis**



November 8 and 9, 2024

2024 Drago Lecturers



Dr. Stephanie Castro and Dr. Michael Wemple
The Sherwin-Williams Co., Cleveland, Ohio

Stephanie was born and raised in Rochester, NY. After that she spent a decade packing things into boxes and taking them out again - moving to Minnesota to attend Carleton College (BA Chemistry), Indiana University for graduate school (Ph.D. Inorganic Chemistry), two years in Georgia for her postdoc (Georgia Tech.) and finally Columbus, Ohio where she began her career as the only chemist at a biotech startup. Since moving to Cleveland in 2000, she has held a number of positions, working as a government contractor at NASA, a research scientist at a small company, and finally her current position as a Senior Scientist at Sherwin-Williams (2016 - present). She earned her Design for Six Sigma Black Belt and is an active member of an internal DFSS certification program. Outside of the lab, she has been an active member of the Sherwin-Williams Women's Club since 2016, serving on its board since 2021 and co-leading the 5K (2021 - 2023) and Philanthropy (2024) committees.



Dr. Stephanie Castro



Dr. Michael Wemple

Michael is from Michigan (mostly), having moved around when he was young. He earned his undergraduate degree at Michigan Technological University (Chemistry) and graduate degree from Indiana University (Inorganic Chemistry) in George Christou's group. After Indiana, Michael did postdocs at Universität Erlangen-Nürnberg (FAU), Germany, and Emory University, GA, before moving to Columbus, OH to work as a part-time lecturer at Ohio State University, and then for a small ceramics company. Michael moved to Cleveland, OH in 2000 where he held research positions at Energizer and then at Sherwin-Williams. At Energizer, he earned his Design for Six Sigma Black Belt. Michael was the Energizer representative, and is currently the Sherwin-Williams representative, for IFPRI (International Fine Particle Research Institute), an industry consortium that funds research in particle science and engineering. Michael is active at Sherwin-Williams in the new-hire formulation training program, the Six Sigma belt certification program, and is the chair-elect for the Sherwin-Williams Senior Advisory Board.

November 8th (Friday)

- 1:50 pm Check-in and coffee SFH 2nd Floor
- 2:50 pm Welcome by Dr. George Christou SFH 221
- Session 1 — Jiahui Liu**
- 3:00 pm Subhadeep Bera (UF): Modeling Cyanide Docking and Isomerism in H Cluster Maturation
- 3:20 pm Charuka Muktha Arachchige (USF): Hydrogen Detection at Parts-Per-Billion Sensitivity Using a Multi-Pass Cavity Portable Raman Analyzer
- 3:40 pm Rafael Loriga (FIU): Structural Behavior of GdTe_{1.8} at High Pressures
- 4:00 pm Coffee Break
- Session 2 — Charlotte Bailey** SFH 221
- 4:20 pm Rachel Weiss (FSU): Ultrafast Spectroscopy for Understanding LMCT Photocatalysts
- 4:40 pm Gina Pantano (USF): Tunable Localized Currents at Crystallographic Domain Boundaries in Altermagnet RuO₂
- 5:00 pm Namodhi Wijerathne (UF): Defective PbMoO₄ for Efficient Electrochemical Nitrogen Reduction Reaction
- 5:20 pm Coffee Break
- Session 3 — Selena Kuenzig** SFH 221
- 5:30 pm Marija Scheuren (Ave Maria): Controlling the Melting Points of Phosphonium Salts: The Impact of Intermolecular Forces
- 5:50 pm Chidiogo Akunne (Florida A&M): NiCoMoFe Electrocatalyst for Water Electrolysis
- 6:10 pm Courtney Sever (UF): Self Accelerating REMP

November 9th (Saturday)

- 8:00 am Breakfast (SFH 2nd Floor) and poster preparation (CLB 4th Floor)
- Session 4 — Daniel Rios** SFH 221
- 8:40 am Md Dulal Hossain Khan (FAU): Polydopamine-Based Fluorescent
- 9:00 am Doris Kissiwaa (UF): Surfactant-Free Synthesis and Catalytic Performance of Indium Oxide (In₂O₃) Nanoparticles for CO₂ Hydrogenation

- 9:20 am Doory Dan (UF): Molecular Nanoparticles of CeO₂: their Catalytic Activity and Use as Supports for Co(III) Ions
- 9:40 am Coffee Break
- Session 5 — Gabriel Eaton-Landau** SFH 221
- 10:00 am Sayeda Samina Ahmed (FAU): Development and Characterization of Chitosan-Based Silver Hydrogels for Nano-Drug Delivery and Biomedical Therapeutics
- 10:20 am Alissa Anderson (USF): Porous Metal-Halide Semiconductors: Prospects in Red Tide Mitigation
- 10:40 am Johnathon Johnson (UF): Synthesis and Electron-Induced Chemistry of Transition Metal-Iodide Complexes as Photoresists for EUVL
- 11:00 am Coffee break and FIMS Picture
- 11:30 am **Drago Session — Dr. George Christou** SFH 221

2024 Drago Lecture
Dr. Stephanie Castro and Dr. Michael Wemple
An Industrial Two-Body Problem

- 12:30 pm **Lunch — provided**
- 1:30 pm **Poster Session** CLB 4th Floor
- Session 6 — Fuyan Ma** SFH 221
- 3:30 pm Ian Campbell (FSU): Complex Magnetic Structure of Half-Heusler Compound MnCoGe_{1/3}As_{2/3}
- 3:50 pm Saeme Motevalian (FIU): Kinetics of Sulfur Reduction Reactions in Lithium-Sulfur Batteries
- 4:10 pm Alexander Mariscal (USF): Charge-Assisted Anion Recognition in Water by a 'Saddle Lactam' Receptor
- 4:30 pm Kyle Langlois (UCF): Exploring the Dipolar Response of Multivariate MOFs Containing *p*-Nitroaniline Following a Solid-Solution Approach.
- 4:50 pm Mahmudul Hasan (UF): Mixed Ionic-Electronic Conduction in Polymers of Intrinsic Microporosity
- 5:10 pm Presentation of poster prizes
Closing remarks by Dr. George Christou