UNIVERSITY OF MIAMI

CAST
CENTER FOR AEROSOL SCIENCE AND TECHNOLOGY
UNIVERSITY OF MIAMI

3rd Miami Workshop on Aerosol Science and Technology
Summer School in Winter
January 8 to 10, 2025
University of Miami
Program Agenda

Time	Title	Speaker/Moderator
1/8/2025, Wednesday **Rosenstiel School of Marine, Atmospheric, and Earth Science, Auditorium**		
Session I: Malvern Panalytical and Netzsch Special Session on Advanced Materials Characterizations		Samiul Amin
9:00 to 9:45	Introduction to particle size, concentration, and zeta potential	Ragy Ragheb
9:45 to 10:15	Targeted delivery: designing sprays to go where you want – and avoid where you don't	Daniel Mangel
10:15 to 10:30	Question/answer and discussion	
10:30 to 11:15	Fundamentals of rheology and some applications in food, pharmaceutical and personal care	Philip Rolfe
11:15 to 11:45	Netzsch grinding and dispersing solutions (TBC)	Rebecca Herman
11:45 to 12:00	Question and answer	
12:00 to 13:00	Lunch at Salt Waterfront Cafeteria	
Session II: Tutorials on Aerosol Science and Technology		
13:00 to 13:50	Tutorial I: Advanced light scattering for particle characterization	Frank Scheffold
14:00 to 14:50	Tutorial II: Machine learning for aerosol science and nanotechnology	Kevin Padron
15:00 to 15:50	Tutorial III: Fundamentals of aerosol science and technology	Pratim Biswas
16:00 to 16:50	Tutorial IV: Air quality sensors and data analysis	Wilton Mui
17:00	Happy hour at Salt Waterfront Cafeteria	
1/9/2025, Thursday **Frost Institute of Chemistry and Molecular Science, 1st Floor Seminar Room and 3rd Floor Lab**		
8:00 to 8:50	Breakfast	
8:50 to 9:00	Opening Remarks	
Session I: Nanoparticle Technology: Synthesis, Characterization and Applications		Samiul Amin Dibyendu Mukherjee
9:00 to 9:30	Optical characterization of nanoparticles (tentative)	Aristide Dogariu
9:30 to 10:00	Aerosol synthesis of functional nanoparticles (tentative)	Pratim Biswas
10:00 to 10:15	Microplastic characterization (tentative)	Sungyoon Jung
10:15 to 10:30	Composite and metastable metal/ceramic nanoparticles synthesized as advanced energetic materials via Laser Ablation Synthesis in Solution (LASiS)	Dibyendu Mukherjee
10:30 to 10:45	Chemical characterization of aerosols with laser-induced breakdown spectroscopy (LIBS)	Daniel Diaz
10:45 to 11:30	Panel Discussion moderated by Samiul Amin and Dibyendu Mukherjee	
11:30 to 14:00	Lunch and Poster Session (In-person Only)	

	Three-Minute Research (3MR) Student Competition	
Session II: Particle Instrument Hands-on Demonstration		Chang-Yu Wu Yang Wang
14:00 to 14:30	Introduction from Aerosol Instrument Industrial Attendees	
14:30 to 16:30	Hands-on Demonstration Malvern Panalytical, Netzsch Group, Aerodyne Research, TSI Inc., Handix, Particles Plus, etc.	
16:30 to 17:00	Group Picture and Lab Tour	
1/10/2025, Friday **Frost Institute of Chemistry and Molecular Science**		
8:00 to 9:00	Breakfast	
Session III: Biomass Burning Aerosols		Cassandra Gaston Yang Wang
9:00 to 9:30	Biomass burning aerosols in the Southeast U.S. (tentative)	Rebecca Sheesley
9:30 to 10:00	Brown carbon aerosols from biomass burning (tentative)	Rawad Saleh
10:00 to 10:15	Biomass burning aerosols and climate impacts (tentative)	Paquita Zuidema
10:15 to 10:30	Biomass burning aerosol physicochemical characterizations (tentative)	Marwa El-Sayed
10:30 to 11:30	Panel Discussion moderated by Cassandra Gaston and Yang Wang	
11:30 to 14:00	Lunch and Poster Session (In-person Only)	
Session IV: Indoor Air Quality and Advanced Control Methods		Chang-Yu Wu Jiayu Li
14:00 to 14:30	Indoor aerosols and advanced measurements (tentative)	Brandon Boor
14:30 to 15:00	Indoor air chemistry and aerosol measurements (tentative)	Nusrat Jung
15:00 to 15:15	Indoor bioaerosol aerosols and health impacts (tentative)	Shanna Ratnesar-Shumate
15:15 to 15:30	Community-based particle counter for indoor air monitoring (tentative)	Anil Namdeo
15:30 to 15:45	Indoor air quality and infectious disease (tentative)	Bhavarth Shukla
15:45 to 16:30	Panel Discussion moderated by Chang-Yu Wu and Jiayu Li	
16:30	Closing	

Speakers and Workshop Convenors:

Samiul Amin, Professor of Practice of the Department of Chemical, Environmental and Materials Engineering, University of Miami

Pratim Biswas, Dean of the College of Engineering, Professor of the Department of Chemical, Environmental and Materials Engineering & Department of Atmospheric Science, Member of the National Academy of Engineering, University of Miami

Brandon Boor, Associate Professor of Civil Engineering, Purdue University

Aristide Dogariu, Trustee Chair Pegasus Professor of the College of Optics & Photonics at the University of Central Florida

Daniel Diaz, Assistant Research Professor of Aerospace and Mechanical Engineering, University of Arizona

Marwa El-Sayed, Assistant professor of the Department of Civil Engineering at Embry-Riddle Aeronautical University

Cassandra Gaston, Associate Professor of the Department of Atmospheric Sciences, University of Miami

Rebecca Herman, Netzsch Group

Nusrat Jung, Assistant Professor of Civil Engineering, Purdue University

Sungyoon Jung, Assistant Professor of Engineering School of Sustainable Infrastructure & Environment, University of Florida

Jiayu Li, Assistant Professor of the Department of Mechanical and Aerospace Engineering, University of Miami

Daniel Mangel, Malvern Panalytical Inc.

Wilton Mui, Program Supervisor in the Monitoring & Analysis Division of South Coast South Coast Air Quality Management District

Dibyendu Mukherjee, Associate Professor of Practice of the Department of Chemical, Environmental and Materials Engineering, University of Miami

Anil Namdeo, Professor of the Department of Geography and Environmental Sciences, Northumbria University, UK

Kevin Padron, Chief AI/ML Engineer at Fastformulator Inc.

Ragy Ragheb, Malvern Panalytical Inc.

Shanna Ratnesar-Shumate, Director of the U.S. Environmental Protection Agency (EPA) Consequence Management Advisory Division and Voluntary Affiliated Faculty of the Department of Chemical, Environmental and Materials Engineering, University of Miami

Philip Rolfe, Product Manager & Sales at Netzsch Group

Rawad Saleh, Associate Professor of the School of Civil, Environmental, Agricultural, and Mechanical Engineering at the University of Georgia

Frank Scheffold, Professor of Physics, University of Fribourg, Switzerland

Rebecca Sheesley, Associate Professor of Environmental Science, Baylor University

Bhavarth Shukla, Associate Professor, UHealth Medical Director for Infection Control, Division of Infectious Diseases, University of Miami

Yang Wang, Assistant Professor of the Department of Chemical, Environmental and Materials Engineering, University of Miami

Chang-Yu Wu, Professor and Chair of the Department of Chemical, Environmental and Materials Engineering, University of Miami

Paquita Zuidema, Professor and Chair of the Department of Atmospheric Sciences, University of Miami