

**ASMS Conference Workshop:
Ion Mobility Mass Spectrometry: New Instrumentation & Enabling Technologies
Ion Mobility MS Interest Group
Presiding: Matthew F. Bush**

The ion mobility-related material at this year's ASMS started with the ion mobility-mass spectrometry two-day short course given by Prof. Herbert H. Hill, Prof. William Siems, and Prof. Brian Clowers (Washington State University), which remains very well attended in its fourth year with about 35 participants. The short course was divided into 8 sections: 1) History and types of ion mobility spectrometers; 2) The motion of ions in gases; 3) Analytical figures of merit for IMS instruments; 4) Collision cross sections in IMS; 5) Operation and Applications of standalone instruments; 6) Operation and application of Drift tube ion mobility spectrometers coupled to mass spectrometers; 7) Operation and application of FAIMS, DMS and DMA coupled to mass spectrometers; and 8) Operation and applications of the travelling wave IMS. The organizers intend to offer this short course again next year.

The interest group was very pleased with the inclusion of three ion mobility focused oral sessions for the 2013 conference: "FAIMS and DMS: New Developments and Applications" (chaired by Yves LeBlanc, attended by ~400), "Ion Mobility: Separations" (chaired by John McLean, attended by ~500) and "Ion Mobility: Structures" (chaired by Erin Baker, attended by ~400).

Beyond those in the three dedicated sessions, 15 additional presentations during the conference featured ion mobility techniques, data, or instrumentation. Of particular note is that these presentations were included in a diverse range of fundamental and applied sessions, including "Carbohydrates: New MS Approaches", "Fundamentals of Ion Activation and Dissociation", "Fundamentals of Peptide Fragmentation", "Imaging MS: Increasing Speed and Information Content", "Informatics: Metabolomics", "Metabolomics/Lipidomics: New MS Technologies and Applications", "Nucleic Acids", "Polymer- and Packaging-Related Contaminants and Degradants in Food, Drugs, and Consumer Products", "Protein-Protein and Protein-Ligand Interactions", "Space Science, Astrobiology, and Atmospheric Chemistry", and "Top-Down and Middle-Down Protein Analysis". There were 205 ion mobility related posters at this year's ASMS, a 15 % increase over last year, 82 of which were presented in the three dedicated ion mobility poster sessions.

The workshop this year focused recent advances in ion mobility instrumentation. The workshop included five short research presentations. In-depth discussions followed each talk and the attendees took advantage of the opportunity to offer opinions or suggestions about the topics presented. More than 230 people attended the workshop, including 60 who stood during the entire workshop due to inadequate seating. The workshop took place from 5:45 to 7:10 on Tuesday, June 11th.

Workshop Presenting Participants:

Miniaturization of Overtone Ion Mobility Spectrometry
Prof. Stephen Valentine; West Virginia University

Developments in Transversal Modulation IMS (TMIMS): an Add-on enabling absolute IMS-IMS pre-filtration in tandem with MS
Dr. Guillermo Vidal-de-Miguel; SEADM

Implementation of a novel Differential Mobility Spectrometry Platform in the Fore Vacuum Region of a Mass Spectrometer
Dr. Dimitris Papanastasiou; Fasmatech

High Resolution Trapped Ion Mobility Spectrometry and the Beginnings of a Theory
Dr. Melvin Park; Bruker

The development of the PNNL IMS platform: challenges and solutions
Dr. Yehia Ibrahim; Pacific Northwest National Laboratory

Respectfully,

Matthew F. Bush
Assistant Professor, University of Washington
IM-MS Interest Group Coordinator ('12-'14)