Ion Traps MS: Using Trapping Mass Analyzers Beyond Mass Analysis

Ion Trap Interest Group
73rd ASMS Conference on Mass Spectrometry and Allied Topics
Monday, June 3rd, 2023

Presider: Kenneth Lee (Brigham Young University)

Panelists:
Electrostatic Linear Ion Trap
Jordan Fritz (Purdue University)

Orbitrap Charge Detection
Jared Kafader (Northwestern University)

FT-ICR Collision Cross Section Measurements
Sudam Mane (Brigham Young University)

Attendance: ~50

Format: Three 10 min flash talks followed by prepared discussion questions for panelists and attendees.

Summary:
Last year's ion trap workshop was focused on measuring large ions and featured six speakers. The presentations were well prepared, but most attendees felt that the workshop was "another oral session". To avoid a similar outcome, this year I invited only three speakers. The topic was chosen to highlight the potential of high-resolution trapping mass analyzers as more flexible devices. FT-ICR and Orbitrap were each represented by one panelist, and I included the custom-built ELIT as a counterpoint to the two commercially available traps. After each panelist introduced a unique experiment that they had demonstrated on their trapping mass analyzer, we spent the remainder of the time discussing preprepared questions. Some were specifically for the panelists for them to elaborate their methods and give perspectives on the possibilities of future development and commercialization. Other questions were designed to engage the audience and encourage them to discuss broader ideas surrounding the future of ion trap instrumentation development. Near the end of the workshop, attendees began to raise more interesting broader perspectives such how to create an open, inclusive environment that encourages everyone to participate in mass spectrometry development.