wileyonlinelibrary.com/journal/jms

Journal of MASS SPECTROMETRY

Volume 54 Number 11
November 2019

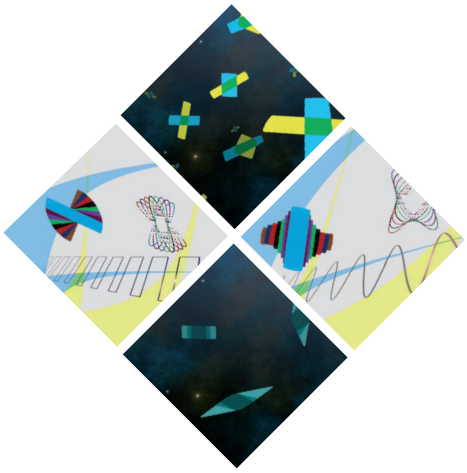
Cover story

(wileyonlinelibrary.com) DOI 10.1002/jms.4244

Tutorial and comprehensive computational study of acceptance and transmission of sinusoidal and digital ion guides
By Adam P. Huntley, Gregory F. Brabeck and Peter T.A. Reilly

Pages 857–868

The full featured article is available at http://onlinelibrary.wiley.com/doi/10.1002/jms.4440/pdf



The applications of phase space dynamics in quadrupole mass spectrometry have led to better understanding of ion motion and stability. One application is its use in determining ion beam acceptance and transmission of quadrupole mass filters. One way of determining acceptance is the method of ellipses. This method is relatively simple and does not require exhaustive amounts of calculation. In this tutorial Special feature article, Peter Reilly and colleagues present a computational method to investigate elementary differences between digital and sinusoidal systems. Peter Reilly is Associate Professor of Chemistry at Washington State University (Pullman, WA). His primary research focus is to develop new instrumentation and techniques to extend the working range of mass spectrometry. He is one of the world leaders in the development of digital ion traps and ion guides.

Authors' biographies

Adam P. Huntley earned his B.S. in chemistry from Oregon State University in 2014. He is currently working on his PhD in physical chemistry at Washington State University. His research focus is on the development of digital mass scanning techniques and the advancement of digital waveform theory.

Gregory F. Brabeck completed his PhD at Washington State University in 2016. He now works at Excellims in Massachusetts developing portable ion trap mass spectrometers.

Peter T. A. Reilly, Associate Professor of Chemistry at Washington State University, is one of the leading pioneers in digital waveform technology and the inventor of the comparator based low voltage waveform generator that permits digital mass filter analysis. The goal of his research is to develop and apply digital waveform technology to ultra-high mass analysis.