



## HRMAC 21T FTICR Mass Spectrometer Project Publications

### 2012

Futrell JH, FE Leach, III, and AV Tolmachev. 2012. "DESIGN CONSIDERATIONS FOR HIGH FIELD FT-ICR MS AT 21T: A PROGRESS REPORT ." Abstract submitted to European FTMS Conference, Coventry, United Kingdom. PNNL-SA-85873.

Leach FE, III, JH Futrell, AV Tolmachev, EW Robinson, SM Hengel, GA Anderson, DW Koppenaal, and L Pasa-Tolic. 2012. "DESIGN CONSIDERATIONS FOR HIGH FIELD FT-ICR MS AT 21 T: SIMULATION AND PRACTICE ." Abstract submitted to ASMS, Vancouver, Canada. PNNL-SA-85818.

Tolmachev AV, EW Robinson, RD Smith, FE Leach, III, JH Futrell, and L Pasa-Tolic. 2012. "A Conceptual Approach for FT-ICR cell Harmonization Utilizing External Shim Electrodes ." *International Journal of Mass Spectrometry* 325-327:45-50. doi:10.1016/j.ijms.2012.06.027

### 2013

Leach FE, III, GA Anderson, RV Norheim, RJ Ewing, BL Lamarche, JH Futrell, YM Ibrahim, RD Smith, EW Robinson, DW Koppenaal, AV Tolmachev, IK Webb, TY Lin, and L Pasa-Tolic. 2013. "PROGRESS TOWARDS ENHANCED HIGH FIELD FT-ICR MS AT EMSL." Presented by Franklin E. Leach III (Invited Speaker) at 9th North American FTMS Conference, Key West, FL, FL on April 30, 2013. PNNL-SA-94405.

Lin TY, GA Anderson, RV Norheim, FE Leach, III, BL Lamarche, JD Sandoval, EW Robinson, and L Pasa-Tolic. 2013. "CONTROL AND DATA SYSTEM DESIGN FOR A 21-T FOURIER-TRANSFORM ION CYCLOTRON RESONANCE MASS SPECTROMETER." Presented by Tzu-Yung Lin at 9th North American Fourier Transform Mass Spectrometry Conference , Key West, FL on April 29, 2013. PNNL-SA-95072.

### 2014

Anderton CR. 2014. "Fourier Transform Ion Cyclotron Resonance Mass Spectrometry Imaging Capabilities at the Environmental Molecular Sciences Laboratory." Presented by Christopher Anderton (Invited Speaker) at Washington State University, Pullman, WA on May 21, 2014. PNNL-SA-102950.

Leach FE 3rd, Norheim R, Anderson G, Pasa-Tolic L. "Application of printed circuit board technology to FT-ICR MS analyzer cell construction and prototyping." *J Am Soc Mass Spectrom.* 2014 Dec;25(12):2069-72. doi: [10.1007/s13361-014-0952-6](https://doi.org/10.1007/s13361-014-0952-6). Epub 2014 Jul 24.

Lin TY, GA Anderson, RV Norheim, SA Prost, BL Lamarche, FE Leach, III, KJ Auberry, RD Smith, DW Koppenaal, EW Robinson, and L Pasa-Tolic. 2015. "An Adaptable Multiple Power Source for Mass Spectrometry and other Scientific Instruments." PNNL-SA-110063, Pacific Northwest National Laboratory, Richland, WA. [Unpublished] SUBMITTED

Lin TY, GA Anderson, RV Norheim, FE Leach, III, JB Shaw, AV Tolmachev, KM Roscioli, KJ Auberry, DW Koppenaal, EW Robinson, and L Pasa-Tolic. 2014. "Comprehensive Evaluation of Preamplifier Configurations and Performance Parameters for Fourier Transform Ion Cyclotron Resonance Mass Spectrometry at 21 Tesla

." Presented by Tzu-Yung Lin at PNNL Postdoc Research Symposium , Richland, WA on July 30, 2014. PNNL-SA-104021.

Pasa-Tolic L. 2014. "Advanced Mass Spectrometry for Biotechnology." Presented by Ljiljana Pasa-Tolic (Invited Speaker) at American Society for Microbiology, Boston, MA on May 19, 2014. PNNL-SA-103192.

Pasa-Tolic L. 2014. "Unlocking the secrets of the secreted proteins." Presented by Ljiljana Pasa-Tolic (Invited Speaker) at 11th European Fourier Transform Mass Spectrometry Conference, Paris, France on April 22, 2014. PNNL-SA-101776.

Shaw JB. 2014. "Characterization of Ultraviolet Photodissociation in a FT-ICR Mass Spectrometer for Top-Down Proteomics." Presented by Jared Shaw at 11th European Fourier Transform Mass Spectrometry Conference , Paris, France on April 25, 2014. PNNL-SA-101756.

Shaw JB, FE Leach, III, TY Lin, S Wu, EW Robinson, DW Koppenaal, and L Pasa-Tolic. 2014. "Intact Protein Characterization by Ultraviolet Photodissociation in a FT-ICR Mass Spectrometer." Presented by Jared Shaw at American Society for Mass Spectrometry , Baltimore, MD on June 17, 2014. PNNL-SA-104076.

Tolmachev AV, IK Webb, YM Ibrahim, VBS Garimella, X Zhang, GA Anderson, and RD Smith. 2014. "Characterization of Ion Dynamics in Structures for Lossless Ion Manipulations." *Analytical Chemistry* 86(18):9162-9168. doi:10.1021/ac502054p

Tolmachev AV, IK Webb, YM Ibrahim, X Zhang, VBS Garimella, GA Anderson, and RD Smith. 2014. "Fundamental Aspects of Ion Confinement in SLIM Devices ." Presented by Aleksey Tolmachev at 62nd ASMS Conference 2014, Baltimore, MD on June 16, 2014. PNNL-SA-103681.

## 2015

Anderton CR, JB Shaw, RK Chu, and L Pasa-Tolic. 2015. "Utilizing Ultraviolet Photodissociation in MALDI-FTICR Mass Spectrometry: Maximizing Structural Detail in Top-Down Imaging Applications." Presented by Christopher Anderton at American Society for Mass Spectrometry , St. Louis, MO on June 2, 2015. PNNL-SA-110260.

Lin TY, M Gorshkov, AV Tolmachev, JB Shaw, RK Chu, M Zhou, R Harkewicz, RJ Ewing, DW Koppenaal, EW Robinson, and L Pasa-Tolic. 2015. "Frequency multiplication for high-throughput Fourier-transform ion cyclotron resonance mass spectrometry." Presented by Tzu-Yung Lin at American Society for Mass Spectrometry , St. Louis, MO on June 1, 2015. PNNL-SA-110716.

Pasa-Tolic L. 2015. "FTMS FOR FUNCTIONAL CHARACTERIZATION OF MICROBIAL PROTEINS." Presented by Ljiljana Pasa-Tolic (Invited Speaker) at 10th North American FT MS Conference, Key West, FL on April 12, 2015. PNNL-SA-109814.

Shaw JB. 2015. "Advances in High Field FT-ICR: Ultra-High Resolving Power and Mass Accuracy for Environmental and Biological Research." Presented by Jared Shaw at American Society for Mass Spectrometry , St. Louis, MO on June 2, 2015. PNNL-SA-111161.

Shaw JB, AV Tolmachev, TY Lin, EW Robinson, DW Koppenaal, and L Pasa-Tolic. 2015. "Empirical Characterization of FT-ICR Cell Harmonization Utilizing External Shim Electrodes ." Presented by Jared Shaw at 10th North American FT MS Conference, Key West, FL on April 13, 2015. PNNL-SA-109567.