Publications of Prof. Dr. Ron M.A. Heeren
1989-2020

2020

*Morphometric cell classification for single-cell MALDI-MSI*
Klára Šcupáková, Frédéric Dewez, Axel K. Walch, Ron M.A. Heeren, and Benjamin Balluff
Ang. Chemie Int. Ed. (2020) [DOI]

*Investigating of sex determination through MALDI MS analysis of peptides and proteins in fingermarks through comprehensive statistical modelling*
Cameron Heaton, Charles S. Bury, Ekta Patel, Robert Bradshaw, Florian Wulfert, Ron M. Heeren, Laura Cole, Leeanna Marchant, Neil Denison, Richard McCollm and Simona Francese
Forensic Chem. (2020) 100271 [DOI]

*INSPIRE: A European Training Network to Foster Research and Training in Cardiovascular Safety Pharmacology.*
Pieter-Jan D. Guns, Brian D. Guth, Stefan Braam, Georgios Kosmidis, Elena Matsa, Annie Delaunois, Vitalina Gryshkova, Sylvain Bernasconi, Harry Knot, Yair Shemesh, Alon Chen, Michael Markert, Miguel Fernandez, Damiano Lombardi, Céline Grandmont, Berta Cillero-Pastor, Ron M.A. Heeren, Wim Martinet, Jeanette Woolard, Matt Skinner, Vincent F.M. Segers, Constantijn Franssen, Emeline M. Van Craenenbroeck, Paul G.A. Volders, Thomas Pauwelyn, Dries Braeken, Paz Yanez, Krystle Correll, Xi Yang, Helen Prior, Gábor Kismihók, Guido R. Y. De Meyer and Jean-Pierre Valentin
J. of Pharmacological and Toxicological Methods (2020) [DOI]

*Spatial Localization of Vitamin D Metabolites in Mouse Kidney by Mass Spectrometry Imaging*
Karl Smith, Bryn Flinders, Paul Thompson, Faye Cruickshank, CoLin Mackay, Ron Heeren and Diego Cobice
ACS Omega (2020) 5 13430-13437 [DOI]

*Simultaneous Detection of Zinc and Its Pathway Metabolites Using MALDI MS Imaging of Prostate Tissue*
Maria K. Andersen, Sebastian Krossa, Therese S. Hoiem, Rebecca Buchholz, Britt S. R. Claes, Benjamin Balluff, Shane R. Ellis, Elin Richardsen, Helena Bertilsson, Ron M. A. Heeren, Tone F. Bathen, Uwe Karst, Guro F. Giskeødegård, and May-Britt Tessem
Analytical Chemistry (2020) 92 3171-3179 [DOI]

*Integrative metabolic pathway analysis reveals novel therapeutic targets in osteoarthritis*
Beatriz Rocha, Berta Cillero-Pastor, Gert Eijkel, Patricia Fernandez-Puente, Martin Paine, Cristina Ruiz-Romero, Ron Heeren, Valentina Calamia, and Francisco J Blanco
Molecular and Cellular Proteomics (2020) 19 574-588 [DOI]
Spatially resolved proteomics in osteoarthritis: State of the art and new perspectives
M. Eveque-Mourroux, B. Rocha, F.P.Y. Barre, Ron M.A. Heeren and B. Cillero-Pastor
Journal of Proteomics (2020) 215 103637 [DOI]

Ultra-High Mass Resolving Power, Mass Accuracy, and Dynamic Range MALDI Mass Spectrometry Imaging by 21-Tesla FT-ICR MS
A.P. Bowman, Greg T. Blakney, Christopher L. Hendrickson, S.R. Ellis, R.M.A Heeren and Donald F. Smith
Analytical Chemistry (2020) 92 3133-3142 [DOI]

Diagnostic accuracy of biomarkers of alcohol use in patients with liver disease: Systematic review and implications for liver transplantation
Janique Arnts, Benedict Vanlerberghe, Sylvia Roozen, Cleo L Crunelle, Ad Masclee, Steven WM Olde-Damink, Ron Heeren, Alexander van Nuijs, Hugo Neels, Frederik Nevens, Jef Verbeek
Submitted to Transplantation (2020) [DOI]

Cellular resolution in clinical mass spectrometry imaging: the latest advancements and current challenges
Klára Šcupáková, Benjamin Balluff, Caitlin Tressler, Tobi Adelaja, Ron M.A. Heeren, Kristine Glunde and Gokhan Ertaylan
Clin. Chem. Lab. Med. (2019) 58 914-929 [DOI]

Clinical use of mass spectrometry (imaging) in abnormal fracture healing
Sylvia P. Nauta, Martijn Poeze, Ron M.A. Heeren, Tiffany Porta-Siegel
Clin. Chem. Lab. Med. (2019) 58 897-913 [DOI]

Evaluation of Lipid Coverage and High Spatial Resolution MALDI-Imaging Capabilities of Oversampling Combined with Laser Post-Ionization
Andrew. P Bowman, Jeroen F. J Bogie, Jerome J.A. Hendriks, Mansour Haidar, Mikhail Belov, Ron M. A. Heeren and Shane R. Ellis
Anal. Bioanal. Chem. (2019) 412 2277–2289 [DOI]

LipostarMSI: comprehensive, vendor-neutral software solution for visualisation, data analysis and automated molecular identification in mass spectrometry imaging
Sara Tortorella, Paolo Tiberi, Andrew P. Bowman, Britt S. R. Claes, Klára Šcupáková, Ron M. A. Heeren, Shane R. Ellis, Gabriele Cruciani
JASMS (2020) 31 155-163 [DOI]

Glutamine deprivation counteracts hypoxia-induced chemoresistance in cholangiocarcinoma
Jessica Wappler, Martijn Arts, Anjali Röth1, Ron M.A. Heeren, Ulf Peter Neumann, Steven W. Olde Damink, Zita Soons, Thorsten Cramer
Neoplasia (2020) 22 22-32 [DOI]

2019

Deciphering metabolic heterogeneity by single-cell analysis
Tom Evers, Mazéne Hochane, Ron M.A. Heeren, Sander Tans, Stefan Semrau, Peter Nemes, Alireza Mashaghi
Analytical Chemistry (2019) 91 13314-13323 [DOI]

Imaging isomers on a biological surface: A review
B.S.R. Claes, E. Takeo, E. Fukusaki, S. Shimma and R.M.A. Heeren
J. Jap. Soc. Mass Spec. (2019) 8 A0078 [DOI]

Tissue classification by Rapid Evaporative Ionization Mass Spectrometric (REIMS): comparison between a diathermic knife and CO2 laser sampling on classification performance
Michele Genangeli, Ron M. A. Heeren and Tiffany Portal-Siegel
Analytical and Bioanalytical Chemistry (2019) 411 7943–7955 [DOI]
Maintenance of Deep Lung Architecture and Automated Airway Segmentation for 3D Mass Spectrometry Imaging
Alison J. Scott, Courtney E. Chandler, Shane R. Ellis, Ron M. A. Heeren and Robert K. Ernst
Nature Sci. Rep. (2019) 9 20160 [DOI]

A concise tutorial review of TOF-SIMS based molecular and cellular imaging.
Philippe Massonnet and Ron M.A. Heeren
J. Anal. Atom. Spec. (2019) 34 2217-2228 [DOI]

Spatially resolved endogenous improved metabolite detection in human osteoarthritis cartilage by matrix assisted laser desorption ionization mass spectrometry imaging
M.R. Eveque-Mourroux, P.J. Emans, R.R.M. Zautsen, A. Boonen, R.M.A. Heeren, B. Cillero-Pastor Analyst (2019) 144 5953-5958 [DOI]

Class-specific changes in lipid composition of tissues upon formalin fixation
Naomi Vos, Ron M. A. Heeren, Benjamin Balluff and Shane R. Ellis
IJMS (2019) 446 116212 [DOI]

Enhanced sensitivity using MALDI imaging coupled with laser post-ionization for pharmaceutical studies
Florian P. Y. Barré, Martin R. L. Paine, Bryn Flinders, Adam J. Trevitt, Patrick D. Kelly, Rima Ait-Belkacem, Joao P. Garcia, Laura B. Creemers, Jonathan Stauber, Rob J. Vreeken, Berta Cillero-Pastor, Shane R. Ellis, Ron M. A. Heeren
Analytical Chemistry (2019) 91 10840-10848 [DOI]

Precise coregistration of mass spectrometry imaging, histology, and laser microdissection-based omics
Frédéric Dewez, Marta; Martin-Lorenzo, Michael Herfs, Dominique Baiwir, Gabriel Mazzucchelli, Edwin De Pauw, Ron M.A. Heeren, Benjamin Balluff
Anal. Bioanal. Chem. (2019) 411 5647-5653 [DOI]

MALDI-mass spectrometry imaging to investigate lipid and bile acid modifications caused by lentil extract used as a potential hypocholesterolemic treatment
Michele Genangeli, Annemarie Heijens, Alice Rustichelli, Noortje Dien Schuit, Maria Vittoria Micioni Di Bonaventura, Carlo Cifani, Sauro Vittori, Tiffany Porta Siegel and Ron M.A. Heeren
JASMS (2019) 30 2041-2050 [DOI]

Ion Mobility Spectrometry Combined with Multivariate Statistical Analysis: Revealing the Effects of a Drug Candidate for Alzheimer’s Disease on Aβ1-40 Peptide Early Assembly
Serena Lazzaro, Nina Ogrinc Potocnik, Lieke Lamont, Graziella Vecchio, Giuseppe Pappalardo and Ron M.A. Heeren
Anal. Bioanal. Chem. (2019) 411 6353-6363 [DOI]

Trends in mass spectrometry imaging for cardiovascular diseases
Stephanie T. P. Mezger, Alma M. A. Mingels, Otto Bekers, Berta Cillero-Pastor, and Ron M. A. Heeren
Anal. Bioanal. Chem. (2019) 411 3709-3720 [DOI]

Protection of the ovine fetal gut against Ureaplasma-induced chorioamnionitis; a potential role for plant sterols.
Charlotte van Gorp, Ilse de Lange, Owen Spiller, Frédéric Dewez, Berta Cillero Pastor, Ron M.A. Heeren, Lilian Kessels, Nico Kloosterboer, Wim van Gemert, Michael Beeton, Sarah Stock, Alan Jobe, Matthew Kemp, Luc Zimmermann, Boris Kramer, Jogchum Plat, Tim Wolfs
Nutrients (2019) 11 968 [DOI]

Stigmatic imaging of secondary ions in MeV-SIMS spectrometry by linear Time-of-Flight mass spectrometer and the TimePix detector
Boštjan Jencic, Luka Šepec, Primož Vavpetic, Mitja Kelemen, Zdravko Rupnik, Matjaž Vencelj, Katarina Vogel-Mikuš, Nina Ogrinc Potocnik, Shane R. Ellis, Ron M.A. Heeren, Primož Pelicon
Nucl. Ins. Meth. B (2019) 452 1-6 [DOI]
Mass Spectrometry-Based Tissue Imaging: The Next Frontier in Clinical Diagnostics?
Felix Leung, Livia S. Eberlin, Kristina Schwamborn, Ron M. A. Heeren, Nicholas Winograd, R. Graham Cooks
Clin. Chem. (2019) 65 4 [DOI]

Breaking the spatial resolution limits in clinical MALDI-MSI: Patch-based super resolution of mass spectrometry images
Klara Scupakova, Vasilis Terzopoulos, Saurabh Jain, Dirk Smeets, and Ron M.A. Heeren
Nat. Sci. Rep. (2019) 9 2915 [DOI]

Mass spectrometry imaging rapidly discriminates between ischemic injury in renal tissue.
Tim van Smaalen, Shane Ellis, Nadine Mascini, Tiffany Porta, Berta Cillero-Pastor, Lisa Hillen, Ernest van Heurn, Carine Peutz-Kootstra and Ron M.A. Heeren
Anal. Chem. (2019) 91 3575-3581 [DOI]

Three-Dimensional Mass Spectrometry Imaging Identifies Metabolite Markers of Medulloblastoma Metastasis.
Martin R. L. Paine, Jingbo Liu, Shane R. Ellis, Dennis Trede, Jan Hendrik Kobarg, Ron M.A. Heeren, Facundo M Fernandez and Tobey J. Macdonald
Nature Sci. Rep. (2019) 9 2205 [DOI]

Distinguishing core from penumbra by lipid profiles using Mass Spectrometry Imaging in a transgenic mouse model of ischemic stroke.
I.A. Mulder, N. Ogrinc Potocnik, L.A.M. Broosc, A. Prop, M.J.H. Wermera, R.M.A. Heeren and A.M.J.M. van den Maagdenberg
Nature Sci. Rep. (2019) 9 1090 [DOI]

Matching sample preparation speed to high throughput mass spectrometry imaging
Lennart R.S. Huizing, Shane R. Ellis, Bart W.A.M.M Beulen, Florian P.Y Barré, Paul B. Kwant, Rob J. Vreeken, Ron M.A. Heeren
Clinical Mass Spectrometry (2019) 12 7-15 [DOI]

Integrative Clustering in Mass Spectrometry Imaging for Enhanced Patient Stratification
Benjamin Balluff, Achim Buck, Marta Martin-Lorenzo, Frédéric Dewez, Rupert Langer, Liam A. McDonnell, Axel Walch, and Ron M.A. Heeren
Proteomics Clin. Appl. (2019) 13 1800137C [DOI]

Strategies for managing multi-patient 3D mass spectrometry imaging data
D.R.N. Vos, I. Jansen, M. Lucas, M.R.L. Paine, O.J. de Boer, S.L. Meijer, C.D. Savci-Heijink, H. Marquering, D.M. de Bruin, R.M.A. Heeren, S.R. Ellis and B. Balluff
J. Prot. (2019) 193 184-191 [DOI]

Recent Advances in Mass Spectrometry Imaging Enabling Visualization and Understanding of Localized Lipid Biochemistry within Tissues
Andrew Bowman, Ron M. A. Heeren and Shane R. Ellis
Trends in Anal. Chem. (2019) 120 115197 [DOI]

Fast rastering matrix-assisted laser desorption ionization for mass spectrometry imaging of lipids at high lateral resolution
Florian Barré, Beatriz Rocha, Mark Towers, Paul Murray, Emmanuelle Claude, Berta Cillero Pastor, Ron M.A.Heeren, Tiffany Porta
Int. J. Mass Spec. (2019) 437 38-48 [DOI]

Increased throughput and ultra-high mass resolution in DESI FT-ICR MS imaging through new-generation external data acquisition system and advanced data processing approaches.
Pieter Kooijman, Konstantin Nagornov, Anton Kozhinov, David Kilgour, Yury Tsybin, Ron M.A. Heeren, and Shane Ellis
Nature Sci. Rep. (2019) 9 8 [DOI]
Mass Spectrometry Imaging: Enabling Comprehensive Local Analysis of Molecular Biomarkers in Tissue for Personalized Medicine
Tiffany Porta, Steven W.M. Olde Damink, and Ron M.A. Heeren
Handbook of Biomarkers and Precision Medicine, Eds. C. Carini, M. Fidock, A. van Gool (2019) Chapman and Hall/CRC, New York, ISBN 978-1-498-76258-8 pp. 439-445 [DOI]

Recent technological developments in MALDI-MSI based hair analysis
Bryn Flinders Tom Bassindale and Ron M. A. Heeren
Bookchapter Forensics, Ed. S. Francesce (2019) ISBN 978-3-030-20541-6 [DOI]

2018

Specific lipid and metabolic profiles of R-CHOP–resistant diffuse large B-cell lymphoma elucidated by matrix-assisted laser desorption ionization mass spectrometry imaging and in vivo imaging.
Florian Barré, Britt Claes, Frédéric Dewez, Carine Peutz-Kootstra, Helga Munch-Petersen, Kirsten Grønbæk, Anders Lund, Ron Heeren, Christophe Côme, Berta Cillero-Pastor
Anal. Chem. (2018) 90 14198-14206 [DOI]

Predicting head and neck cancer metastasis and disease-specific survival from MALDI-MSI data: feasible or not?
Nadine E. Mascini, Jannis Teunissen, Rob Noorlag, Stefan Willems and Ron M.A. Heeren
Methods (2018) 151 21-27 [DOI]

Understanding detrimental and beneficial grain boundary effects in halide perovskites.
Gede W.P. Adhyaksa, Sarah Brittman, Haralds Abolinš, Andries Lof, Xueying Li, Joel D. Keelor, Yanqi Luo, Teodor Duevski, Ron M.A. Heeren, Shane R. Ellis, David P. Fenning, Erik C. Garnett
Adv. Materials (2018) 39 1804792 [DOI]

Targeted Drug and Metabolite Imaging: Desorption Electrospray Ionization combined with Triple Quadrupole Mass Spectrometry
Lieve Lamont, Gert B. Eijkel, Emrys A. Jones, Bryn Flinders, Shane R. Ellis, Tiffany Porta Siegel, Ron M.A. Heeren, Rob J. Vreeken
Anal. Chem. (2018) 90 13229–13235 [DOI]

Cross-species molecular imaging of bile salts and lipids in liver: identification of hydroxyl-sulfatides as marker of bile ducts.
Bryn Flinders, Lennart R. S. Huizing, Marjolein van Heerden, Filip Cuyckens, Steven W. M. Olde Damink, Ron M. A. Heeren, Frank G. Schaap Rob J. Vreeken
Anal. Chem. (2018) 90 11835–11846 [DOI]

Digestion-free Analysis of Peptides from 30-year-old Formalin-fixed, Paraffin-embedded Tissue by Mass Spectrometry Imaging.
Martin R.L. Paine, Shane R. Ellis, Dan Maloney, Ron M.A. Heeren, Peter D.E.M. Verhaert
Anal. Chem. (2018) 90 9272–9280 [DOI]

Evaluation of Thin-Layer Chromatography – Laser Desorption Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometric Imaging for Visualization of Crude Oil Interactions
Ali Zahraei, Peter W. F. Arisz, Alexander P. van Bavel and Ron M. A. Heeren
Energy and Fuels (2018) 32 7347-7357 [DOI]

Round Robin Study of Formalin-Fixed Paraffin-Embedded Tissues in Mass Spectrometry Imaging.
Achim Buck, Bram Heijls, Birte Beine, Jan Schepers, Alberto Cassese, Ron M.A. Heeren, Liam McDonnell, Corinna Henkel, Axel Walch, Benjamin Balluff
Anal. Bioanal. Chem. (2018) 410 5969-5980 [DOI]

Mass Spectrometry Imaging with Isomeric Resolution Enabled by Ozone-Induced Dissociation.
Martin R. L. Paine, Berwyck L. J. Poad, Gert B. Eijkel, David. L. Marshall, Stephen J. Blanksby, Ron M. A.
NF-κB-mediated metabolic remodelling in the inflamed heart in acute viral myocarditis
Alexander Remels, Wouter Derks, Berta Cillero-Pastor, Koen Verhees, Marco Kelders, Ward Heggemont, Paolo Carai, Georg Summer, Shane R. Ellis, Chiel C. Detheije, Ron M.A. Heeren, Stephane Heymans, Anna-Pia Papageorgiou, Marc van Bilsen
Biophysica and Biochimica Acta - Molecular Basis of Disease (2018) 1864 2579-2589 [DOI]

Unambiguous identification and high resolution imaging of α-tocopherol from single cells to whole animals by ToF-SIMS Tandem Mass Spectrometry.
Anne L. Bruinen, Gregory L. Fisher, Rachelle Balez, Astrid M. van der Sar, Lezanne Ooi, Ron M.A. Heeren
JASMS (2018) 29 1571-1581 [DOI]

Automated, Parallel Mass Spectrometry Imaging and Structural Identification of Lipids
Shane R. Ellis, Martin R. L. Paine, Gert B. Eijkel, Peter Husen, Martin Hermansson, Christer S. Ejsing and Ron M. A. Heeren
Nature Methods (2018) 15 515-518 [DOI]

Spatial systems lipidomics reveals nonalcoholic fatty liver disease heterogeneity
Klára Šcupáková, Zita Soons, Gökhan Ertaylan, Keely A. Pierzchalski, Gert B. Eijkel, Shane R. Ellis, Jan W. Greve, Ann Dreissen, Joanne Verheij, Theo M. De Kok, Steven W.M. Olde Damink, Sander S. Rensen, and Ron M.A. Heeren
Analytical Chemistry (2018) 90 5130-5138 [DOI]

Simultaneous lipidomic and transcriptomic profiling in mouse brain punches of acute epileptic seizure model compared to controls.
Raisa Lerner, Julia M. Post, Shane R. Ellis, Dina R.N. Vos, Ron M.A. Heeren, Beat Lutz and Laura Bindila
J. Lipid Res. (2018) 59 283-297 [DOI]

Solvent Effects on Differentiation of Mouse Brain Tissue Using Laser Microdissection ‘Cut and Drop’ Sampling with Direct Mass Spectral Analysis.
John F. Cahill, Vilmos Kertesz, Tiffany Porta, J. C. Yves LeBlanc, Ron M. A. Heeren, and Gary J. Van Berkel
Rap. Comm. Mass Spec. (2018) 32 414-422 [DOI]

2017

3D Host-Pathogen Interface Mapping Defines a Lethal Role for Inflammatory Lipids.
Alison J. Scott, Julia María Post, Raisa Lerner, Shane R. Ellis, Joshua Lieberman, Kari Ann Shirey, Ron M.A. Heeren, Laura Bindila, Robert K. Ernst
P. Nat. Ac. Sci(2017) 47 12596-12601 [DOI]

Integration of Ion Mobility MSE after Fully Automated, Online, High-Resolution Liquid Extraction Surface Analysis Micro-Liquid Chromatography.
Lieke Lamont, Mark Baumert, Nina Ogrinc Potocnik, Mark Allen, Rob Vreeken, Ron M.A. Heeren and Tiffany Porta
Analytical Chemistry (2017) 89 11143-11150 [DOI]

Optimization of sample preparation and instrumental parameters for the rapid analysis of drugs of abuse in hair samples by MALDI-MS/MS imaging.
Bryn Flinders, Emma Beasley, Ricky M. Verlaan, Eva Cuypers, Simona Francese, Tom Bassindale, Malcolm R. Clench, Ron M. A. Heeren
J. Am. Soc. Mass Spec. (2017) 28 2462-2468 [DOI]

Small molecule distributions maintain patterns in the Drosophila melanogaster wing imaginal disc. Florian Marty, Gianluca Rago, Donald F. Smith, Xiaoli Gao, Gert B. Eijkel, Luke MacAleese, Mischa Bonn,
Erich Brunner, Konrad Basler, Ron M. A. Heeren
Anal. Chem. (2017) 89 9664–9670 [DOI]

Visualizing Molecular Distributions of Biomaterials with Mass Spectrometry Imaging: A Review.
Martin R. L. Paine, Pieter C. Kooijman, Gregory L. Fisher, Ron M. A. Heeren, Facundo M. Fernández,
Shane R. Ellis
J. Mat. Chem. B (2017) 5 7444 [DOI]

Sequencing and identification of endogenous neuropeptides with matrix-enhanced secondary ion mass spectrometry tandem mass spectrometry.
Nina Ogrinc Potocnik, Gregory L. Fisher, Arnoud Prop, Ron M. A. Heeren
Anal. Chem. (2017) 89 8223-8227 [DOI]

The paradoxical effects of chronic intra-amniotic ureaplasma parvum exposure on ovine fetal brain development.
Ruth Gussenhoven, Daan R.M.G. Ophelders, Matthew W. Kemp, Matthew S. Payne, Owen B. Spiller,
Michael L. Beeton, Sarah J. Stock Bertha Cillero-Pastor, Florian P.Y. Barré, Ron M.A. Heeren, Lilian Kessels, Bas Stevens, Bart P. Rutten, Suhas G. Kallapur, Alan H. Jobe, Boris W. Kramer and Tim G.A.M. Wolfs
Developmental Neuroscience (2017) 39 472-486 [DOI]

Mass Spectrometry Imaging for Clinical Research – Latest Developments, Applications, and Current Limitations
Pierre-Maxence Vaysse, Ron M. A. Heeren, Tiffany Porta and Benjamin Balluff
Analyst (2017) 142 2690-2712 [DOI]

Design and Performance of a Novel Interface for Combined Matrix-Assisted Laser Desorption Ionization at Elevated Pressure and Electrospray Ionization with Orbitrap Mass Spectrometry.
Mikhail Belov, Shane R. Ellis, Marialaura Dilillo, Martin Paine, William Danielson, Gordon Anderson, Eric De Graaf, Gert B. Eijkel, Ron M. A. Heeren, Liam A. McDonnell
Anal. Chem. (2017) 89 7493-7501 [DOI]

Oxygen dependent lipid profiles of 3D cultured human chondrocytes revealed by MALDI-MSI.
Brenda Bakker, Gert B. Eijkel, Ron M.A. Heeren, Marcel Karperien, Janine N. Post, Berta Cillero-Pastor
Anal. Chem. (2017) 89 9438-9444 [DOI]

The Composition of PET Surface Precipitates Determined at High Resolving Power by Tandem Mass Spectrometry Imaging
Gregory L. Fisher, John S. Hammond, Scott R. Bryan, Paul E. Larson, and Ron M.A. Heeren
Microscopy and Microanalysis (2017) 23 843-848 [DOI]

Mass Spectrometry Imaging for the Investigation of Intratumor Heterogeneity
Benjamin Balluff, Michael Hanselmann, Ron M.A. Heeren
Applications of mass spectrometry imaging to cancer, Edited by: Drake, RR; McDonnell, LA; Book Series: Advances in Cancer Research (2017) 134 201-230 [DOI]

ToF-SIMS Parallel Imaging MS/MS of Lipid Species in Thin Tissue Sections
Anne Lisa Bruinen, Gregory L. Fisher, and Ron M.A. Heeren
Imaging Mass Spectrometry; methods and protocols, Bookchapter in Methods in Mol. Biol., Laura M. Cole
Editor Humana Press, Springer methods (2017) 1618 165-173 [DOI]

Mass Spectrometry Imaging of Drugs of Abuse in Hair
Bryn Flinders, Eva Cuypers, Tiffany Porta, Emmanuel Varesio, Gérard Hopfgartner, and Ron M.A. Heeren
Imaging Mass Spectrometry; methods and protocols, Bookchapter in Methods in Mol. Biol., Laura M. Cole
Editor Humana Press, Springer methods (2017) 1618 137-148 [DOI]

Laser Post-Ionisation Combined with a High Resolving Orbitrap Mass Spectrometer for Enhanced MALDI-MS Imaging of Lipids
Shane R. Ellis, Jens Soltwisch, Martin R.L. Paine, K. Dreisewerd and Ron M.A. Heeren
Chem. Comm. (2017) 53 7246-7249 [DOI]

Visualizing Localized Hepatocellular Amino Acid Kinetics through Mass Spectrometry Imaging of Stable Isotopes
Martijn Arts, Zita Soons, Shane R. Ellis, Keely A. Pierzchalski, Benjamin Balluff, Gert B. Eijkel, Ludwig J. Dubois, Natalja G. Lieuws, Stijn M. Agten, Tilman M. Hackeng, Luc J.C. van Loon, Ron M.A. Heeren, Steven W.M. Olde Damink
Angewandte Chemie Int. Ed. (2017) 56 7146-7150 [DOI]

Ion Mobility Spectrometry reveals temperature resolved evolution of DNA unfolding
Bob Hommersom, Tiffany Porta and Ron M.A. Heeren
Int. Journal of Mass Spec. (2017) 419 52-55 [DOI]

Mass spectrometry imaging in nanomedicine: unraveling the potential of MSI for detection of nanoparticles in neuroscience
Florian P.Y. Barre, Ron M.A. Heeren and Nina Ogrinc-Potocnic
Current Pharmaceutical Design (2017) 23 1974-1984 [DOI]

Efficient Functionalization of Additives at Supramolecular Material Surfaces
Olga J. G. M. Goor, Henk M. Keizer, Anne L. Bruinen, Moniek G. J. Schmitz, Ron M. Versteegen, Henk M. Janssen, Ron M. A. Heeren, and Patricia Y. W. Dankers
Advanced Materials (2017) 29 1604652 [DOI]

2016

Derivatization strategies for the detection of triamcinolone acetonide in cartilage by using matrix-assisted laser desorption/ionization mass spectrometry imaging
Florian P.Y. Barré, Bryn Flinders, João P. Garcia, Tiffany Porta, Laura B. Creemers, Ron M.A. Heeren and Berta Cillero-Pastor
Anal. Chem. (2016) 88 12051-12059 [DOI]

Direct Analysis and Quantification of Metaldehyde in Water using Reactive Paper Spray Mass Spectrometry
Simon Maher, Fred P.M. Junju, Deirde E. Damon, Hannah Gorton, Yosef S. Maher, Sarfaraz U. Syed, Ron M. A. Heeren, Iain Young, Stephen Taylor and Abraham K. Badu-Tawiah
Nature Scientific Reports (2016) 6 35643 [DOI]

Sub-Micron Resolution Imaging with Bio-Molecular Identification by TOF-SIMS Parallel Imaging MS/MS
Gregory L. Fisher, Nina Ogrinc Potocnik, Anne L. Bruinen, John S. Hammond, Scott R. Bryan, and Ron M.A. Heeren
Miroscopy and Microanalysis (2016) 22 350-351 [DOI]

Norharmane Matrix Enhances Detection of Endotoxin by MALDI-MS for Simultaneous Profiling of Pathogen, Host, and Vector Systems.
Alison J. Scott, Bryn Flinders, Joanna Cappell, Tao Liang, Rebecca S. Pelc, Bao Tran, David P.A. Kilgour, Ron M. A. Heeren, David . Goodlett, Robert K. Ernst
Pathogens and Disease (2016) 74 ftw097 [DOI]

The Impact of N-terminal Acetylation of Alpha Synuclein on Phospholipid Membrane Binding and Fibril Structure
Aditya Iyer, Steven J. Roeters, Nathalie Schilderink, Bob Hommersom, Ron M.A. Heeren, Sander Woutersen, Mireille M.A.E Claessens and Vinod Subramaniam
J. Biol. Chem. (2016) 291 21110-21122 [DOI]

Multimodal Spectroscopic Study of Amyloid Fibril Polymorphism
Corianne C. VandenAkker, Michael Schleeger, Anne L. Bruinen, Tanja Deckert-Gaudig, Krassimir P.
A New Method and Mass Spectrometer Design for TOF-SIMS Parallel Imaging MS/MS
Gregory Fisher, Anne Nina Ogrinc Potocnik, John Hammond, Scott Bryan, Paul Larson, and Ron M.A. Heeren
Anal. Chem. (2016) 88 6433-6440  [DOI]

Spatial autocorrelation in mass spectrometry imaging
Alberto Cassese, Shane Ellis, Nina Ogrinc Potocnik, Elke Burgermeister, Matthias Ebert, Axel Walch, Arn M.J.M. van den Maagdenberg, Liam A. McDonnell, Ron M.A. Heeren, Benjamin Balluff
Anal. Chem. (2016) 88 5871-5878  [DOI]

A Parallel Imaging MS/MS TOF-SIMS Instrument
Greg Fisher, John Hammond, Paul Larson, Scott Bryan and Ron M.A. Heeren
J. Vac. Sci. Technol. B (2016) 34 03H126  [DOI]

More From Less: High-Throughput Dual Polarity Lipid Imaging of Biological Tissues.
Shane R. Ellis, Jo Cappell, Nina Ogrinc Potocnik, Benjamin Balluff, Julie Hamaide, Annemie Van Der Linden and Ron M. A. Heeren
The Analyst (2016) 141 3832  [DOI]

Enhanced capabilities for imaging gangliosides and other lipid species in murine brain with desorption electrospray ionization mass spectrometry coupled to ion mobility separation.
Karolina Škrášková, Emmanuelle Claude, Emrys A. Jones, Mark Towers and Ron M.A. Heeren
Methods (2016) 104 69-78  [DOI]

An ambient detection system for visualization of charged particles generated with ionization methods at atmospheric pressure.
Bob Hommersom, Sarfaraz U.A.H. Syed, Gert B. Eijkel, David P.A. Kilgour, David R. Goodlett and Ron M.A. Heeren
Rap. Comm. in Mass Spec. (2016) 30 352-358  [DOI]

Consequences of Decontamination Procedures in Forensic Hair Analysis Using Metal-Assisted Secondary Ion Mass Spectrometry Analysis
Eva Cuypers, Bryn Flinders, Carolien M. Boone, Ingrid J. Bosman, Klaas J. Lusthof, Arian C. Van Asten, Jan Tytgat and Ron M.A. Heeren
Analytical Chemistry (2016) 88 3091-3097  [DOI]

Screening and Quantification of Aliphatic Primary Alkyl Corrosion Inhibitor Amines in Water Samples by Paper Spray Mass Spectrometry
Fred P. M. Jjunju, Simon Maher, Deirdre E. Damon, Richard M. Barrett, Sarfaraz U. Syed, Ron M. A. Heeren, Stephen Taylor, Iain S. Young and Abraham K. Badu-Tawia
Anal. Chem. (2016) 88 1391-1400  [DOI]

Mass Spectrometry Imaging of the Hypoxia Marker Pimonidazole in a Breast Tumor Model
Nadine E. Mascini, Menglin Cheng, Lu Jiang, Asif Rizwan, Helen Podmore, Dhaka R. Bhandari, Andreas Römpp, Kristine Glunde and Ron M.A. Heeren
Anal. Chem (2016) 88 3107-3114  [DOI]

Mass spectrometry imaging of drug related crystal-like structures in formalin-fixed frozen and paraffin embedded rabbit kidney tissue sections.
Anne L. Bruinen, Cateau van Oevelen, Gert Eijkel, Marjolein Van Heerden, Filip Cuyckens and Ron M.A. Heeren
J. Am. Soc. Mass Spec. (2016) 27 116-123  [DOI]

2015
**Handheld DAPCI Ion Source for in-situ Analysis of Nitroaromatic Explosives**
Fred Jjunju, Simon Maher, Anyin Li, Sarfaraz Syed, Barry Smith, Ron M.A. Heeren, Stephen Taylor and R. Graham Cooks
Anal. Chem. (2015) 87 10047-10055  [DOI]

**Use of Advantageous, Volatile Matrices Enabled by High Speed Next Generation MALDI-ToF Imaging Employing a Scanning Laser Beam.**
Nina Ogrinc Potocnik, Tiffany Porta, Michael Becker, Ron M. A. Heeren and Shane R. Ellis
Rap. Comm. Mass Spec. (2015) 29 2195-2203  [DOI]

**Preparation of longitudinal sections of hair samples for the analysis of cocaine by MALDI-MS/MS and TOF-SIMS imaging**
Bryn Flinders, Eva Cuypers, Hans Zeijlemaker, Jan Tytgat and Ron M.A. Heeren
Drug Testing and Analysis (2015) 7 859-865  [DOI]

**MALDI-mass spectrometric imaging reveals hypoxia-driven lipids and proteins in a breast tumor model**
Lu Jiang, Kamila Chughtai, Zaver Bhujwalla, Venu Raman, Ljiljana Paša-Tolic, Ron M.A. Heeren, Kristine Glunde
Anal. Chem. (2015) 87 5947-5956  [DOI]

**Precise anatomical localization of accumulated lipids in Msp2 deficient murine brains through automated registration of SIMS images to the Allen Brain Atlas**
Karolina Škrášková, Artem Khmelinskii, Walid M. Abdelmoula, Stephanie De Munter, Myriam Baes, Liam McDonnell, Jouke Dijkstra and Ron M.A. Heeren
J. Am. Soc. Mass Spec. (2015) 26 948-957  [DOI]

**Characterization of lipidic markers of chondrogenic differentiation using mass spectrometry imaging**
Beatriz Rocha, Berta Cillero-Pastor, Gert Eijkel, Anne L. Bruinen, Cristina Ruiz-Romero, Ron M. A. Heeren and Francisco J. Blanco
Proteomics (2015) 15 702-711  [DOI]

**Differentiation of Mesenchymal Stem Cells under Hypoxia and Normoxia: Lipid Profiles Revealed by Time-of-Flight Secondary Ion Mass Spectrometry and Multivariate Analysis**
Nicole Georgi, Berta Cillero Pastor, Gert Eijkel, Parthiban C. Periyasamy, Andras Kiss, Clemens van Blitterswijk, Janine N. Post, Ron M.A. Heeren and Marcel Karperien
Anal. Chem. (2015) 87 3981-3988  [DOI]

**Direct Ion Imaging Approach for Investigation of Ion Dynamics in Multipole Ion Guides**
Sarfaraz U. A. H. Syed, Simon Maher, Gert B. Eijkel, Shane R. Ellis, Fred Jjunju, Stephen Taylor and Ron M. A. Heeren
Anal. Chem. (2015) 87 3714-3720  [DOI]

**The use of mass spectrometry imaging to predict treatment response of patient-derived xenograft models of triple-negative breast cancer.**
Nadine E. Mascini, Gert B. Eijkel, Petra ter Brugge, Jos Jonkers, Jelle Wesseling and Ron M.A. Heeren
J. Prot. Res. (2015) 14 1069-1075  [DOI]

**Mass Spectrometry Imaging of Biological Tissue: An Approach for Multicenter Studies**
Andreas Römpp, Jean-Pierre Both, Alain Brunelle, Ron M. A. Heeren, Olivier Laprévote, Brendan Prideaux, Alexandre Seyer, Bernhard Spengler, Markus Stoeckli, Donald F. Smith
Anal. Bioanal. Chem. (2015) 407 2329-2335  [DOI]

**Discussion Point: Reporting Guidelines for Mass Spectrometry Imaging**
Liam A. McDonnell, Andreas Römpp, Benjamin Balluff, Ron M.A. Heeren, Juan Pablo Albar, Per E. Andrén, Garry L. Corthals, Axel Walch, Markus Stoeckli
Anal. Bioanal. Chem. (2015) 407 2035-2045  [DOI]

**Distributed Computing Strategies for Processing of FT-ICR MS Imaging Datasets for Continuous Mode Data Visualization**
Donald F. Smith, Carl Schulz, Marco Konijnenburg, Mehmet Kilic, and Ron M. A. Heeren
Anal. Bioanal. Chem. (2015) 407 2321-2327 [DOI]

_A Micro Pixelated Ion Imaging Detector for Mass Resolution Enhancement of a QMS Instrument_
Sarfaraz U. A. H. Syed, Gert B. Eijkel, Simon Maher, Piet Kistemaker, Stephen Taylor and Ron M. A. Heeren
Anal. Bioanal. Chem. (2015) 407 2055-2062 [DOI]

_Peptide classification and distribution in osteoarthritic human synovial tissue by matrix assisted laser desorption ionization mass spectrometry imaging_
Berta Cillero-Pastor, Gert B. Eijkel, Francisco J. Blanco and Ron M.A. Heeren
Anal. Bioanal. Chem. (2015) 407 2213-2222 [DOI]

_Fast image-charge calculations for multi-particle simulations in FT-ICR analyzer cells of arbitrary geometry_
Joshua A. Driver, Andriy Kharchenko, Ron M.A. Heeren and I. Jonathan Amster
Int. J. Mass Spec. (2015) 377 432-439 [DOI]

_Getting the picture: the coming of age of imaging MS_
Ron M.A. Heeren
Int. J. Mass Spec. (2015) 377 672-680 [DOI]

2014

_Software tools of the Computus European project to process mass spectrometry images_
M.-F. Robbe, J.-P. Both, B. Prideaux, I. Klinkert, V. Picaud, T. Schramm, A. Hester, V. Guevara, M. Stoeckli, A. Römpp, R.M.A. Heeren, B. Spengler, O. Gal and S. Haan
Eur. J. Mass Spectrom. (2014) 20 351–360 [DOI]

_The "Afterlife Experiment" : Use of MALDI-MS and SIMS Imaging for the Study of the Nitrogen Cycle within Plants_
Callie Seaman, Bryn Flinders, Gert Eijkel, Ron M.A. Heeren, Neil Bricklebank and Malcolm R Clench Anal. Chem. (2014) 86 10071-10077 [DOI]

_Direct Analysis of Thin Layer Chromatography Separations of Petroleum Samples by Laser Desorption Ionization FT-ICR Mass Spectrometry Imaging_
Donald F. Smith, Amy M. McKenna, Yuri E. Corilo, Ryan P. Rodgers, Alan G. Marshall and Ron M. A. Heeren
Energy and Fuels (2014) 28 6284-6288 [DOI]

_Automatic generic registration of Mass Spectrometry Imaging data to histology using nonlinear stochastic embedding_
Walid M. Abdelmoula, Karolina Škrášková, Benjamin Balluff, Ricardo J. Carreira, Else A. Tolner, Boudewijn P.F. Lelieveldt, Laurens van der Maaten, Hans Morreau, Arn M.J.M. van den Maagdenberg, Ron M.A. Heeren, Liam A. McDonnell, Jouke Dijkstra
Anal. Chem. (2014) 86 9204-9211 [DOI]

_Hydrogen peroxide reactions on cocaine in hair using imaging mass spectrometry_
Eva Cuypers, Bryn Flinders, Ingrid J Bosman, Klaas J Lusthof, Arian C Van Asten, Ron M Heeren Forensic Science International (2014) 242 103-110 [DOI]

_Experimental investigation of the 2D ion beam profile generated by an ESI Octopole-QMS system_
Sarfaraz U. A. H. Syed, Gert B. Eijkel, Piet G. Kistemaker, Shane R. Ellis, Simon Maher, Donald F. Smith, and Ron. M. A. Heeren
J. Am. Soc. Mass Spec. (2014) 25 1780-1787 [DOI]

_Combined X-ray CT and mass spectrometry for biomedical imaging applications_
E. Schioppa Jr., A.L. Bruinen, J. Visser, Ron M.A. Heeren, J. Uher, E. Koffeman
Journal of Instrumentation (2014) 9 C04029  [DOI]

Secondary Ion Mass Spectrometry Imaging of Dictyostelium discoideum Aggregation Streams
J. Daniel DeBord, Donald F Smith, Christopher R Anderton, Ron M. A. Heeren, Ljiljana Paša-Tolic, Richard H Gomer, Francisco Fernandez-Lima
PLoS One (2014) 9 e99319  [DOI]

Label-Free Characterization of Bio-Membranes: from Structure to Dynamics
Alireza Mashaghi, Samaneh Mashaghi, Ilya Revia, Ron M.A. Heeren, Vahid Sandoghdar, Mischa Bonn
Chem. Soc. Rev. (2014) 43 887-900  [DOI]

Time-Resolved Imaging of the MALDI Linear-TOF Ion Cloud: Direct Visualization and Exploitation of Ion Optical Phenomena Using a Position- and Time-Sensitive Detector
Shane R. Ellis, Jens Soltwisch, Ron M. A. Heeren
J. Am. Soc. Mass Spec. (2014) 25 809-819  [DOI]

Gold Sputtered Fiducial Markers for Combined SIMS and MALDI Imaging of Tissue Samples
Nina Ogrinc, Karolina Škrášková, Bryn Flinders, Primož Pelicon, Ron M.A. Heeren
Anal. Chem. (2014) 86 6781-6785  [DOI]

MALDI mass spectrometry imaging in microscope mode with infrared lasers – bypassing the diffraction limits
Jens Soltwisch, Guido Gorits, Julia Jungmann, Andras Kiss, Donald F. Smith, Shane Ellis and Ron M. A. Heeren
Anal. Chem. (2014) 86 321-325  [DOI]

Methods for Full Resolution Data Exploration and Visualization for Large 2D and 3D Mass Spectrometry Imaging Datasets
Ivo Klinkert, Kamila Chughtai, Ron M.A. Heeren
Int. J. Mass Spec. (2014) 362 40-47  [DOI]

Matrix assisted laser desorption ionization mass spectrometry imaging for peptide and protein analyses: on tissue digestion
Berta Cillero-Pastor and Ron M.A. Heeren
J. Proteome Res. (2014) 13 325-335  [DOI]

MALDI Mass Spectrometry Imaging Identifies Markers of Ageing and Osteoarthritic Cartilage
M.J. Peffers, B. Cillero-Pastor, G.B. Eijkel, P.D. Clegg, R.M.A. Heeren
Arthritis Research & Therapy (2014) 16 R110  [DOI]

A Critical Evaluation of the Current State-of-the-Art in Quantitative Imaging Mass Spectrometry
Shane R. Ellis, Anne L. Bruinen and Ron M.A. Heeren
Anal. Bioanal. Chem. (2014) 406 1275-1289  [DOI]

Top-Down Mass Spectrometry Imaging of Intact Proteins by LAESI FT-ICR MS
Andras Kiss, Donald F. Smith, Brent R. Reschke, Matthew J. Powell, Ron M. A. Heeren
Proteomics (2014) 14 1283-1289  [DOI]

2013

Characterization of Phosphatidylcholine Oxidation Products by MALDI MS
Whitney L. Stutts, Robert F. Menger, Andras Kiss, Ron M. A. Heeren, Richard A. Yost
Anal. Chem. (2013) 85 11410-11419  [DOI]

Absorption Mode FT-ICR Mass Spectrometry Imaging
Donald F. Smith, David P.A. Kilgour, Marco Konijnenburg, Peter B. O’Connor and Ron M. A. Heeren
Anal. Chem. (2013) 85 11180-11184  [DOI]
A review of complementary separation methods and maldi-imaging mass spectrometry imaging: lowering sample complexity
Karolina Skraskova and Ron M.A. Heeren
J. Chrom. A (2013) 1319 1-17 [DOI]

Multi order correction algorithms to remove image distortions from imaging mass spectrometry datasets
Florian Gerber, Florian Marty, Gert B.Eijkel, Konrad Basler, Erich Brunner, Reinhard Furrer, Ron M.A. Heeren
Anal. Chem. (2013) 85 10249-10254 [DOI]

Cluster SIMS Microscope Mode Mass Spectrometry Imaging
Andras Kiss, Donald F. Smith, Julia H. Jungmann, Ron M.A. Heeren
Rap. Comm. Mass Spec. (2013) 27 2745-2750

A Enhanced Detection of High Mass Proteins Using an Active Pixel Detector
Shane R. Ellis, Julia H. Jungmann, Donald F. Smith, Jens Soltwisch and Ron M. A. Heeren
Ang. Chemie. Int. Ed. (2013) 52 11261-11264 [DOI]

A MASSive Laboratory Tour: An Interactive Mass Spectrometry Outreach Activity for Children
Julia H. Jungmann, Nadine E. Mascini, Andras Kiss, Donald F. Smith, Ivo Klinkert, Gert B. Eijkel, Marc C. Duursma, Berta Cillero Pastor, Kamila Chughtai, Sanaullah Chughtai, Ron M. A. Heeren
JASMS (2013) 24 979-982 [DOI]

High Mass Accuracy and High Mass Resolving Power FT-ICR Secondary Ion Mass Spectrometry for Biological Tissue Imaging
Donald F. Smith, Andras Kiss, Franklin E. Leach III, Errol W. Robinson, Ljiljana Pasa-Tolic, Ron M.A. Heeren
Anal. Bioanal. Chem. (2013) 405 6069-6076 [DOI]

Sparse Techniques for Emission Imaging
Andrei Kharchenko, Julia H. Jungmann, Luke MacAleese, Ron M. A. Heeren
Int. J. Mass Spec. (2013) 351 37-46 [DOI]

An in-vacuum, pixelated detection system for mass spectrometric analysis and imaging of macromolecules
Julia H. Jungmann, Donald F. Smith, Andras Kiss, Luke MacAleese, Ronald Buijs, Ron M.A. Heeren
Int. J. Mass Spec. (2013) 341-342 34-44 [DOI]

Matrix Assisted Laser Desorption Ionization Imaging Mass Spectrometry: A new method to study human osteoarthritic cartilage
Berta Cillero Pastor, Gert Eijkel, Fransisco J. Blanco Garcia and Ron M.A. Heeren
Arthritis and Rheumatism (2013) 65 710-720 [DOI]

Multimodal Elucidation of the Choline Metabolism in a Murine Glioma Model using Magnetic Resonance Spectroscopy and 11C-choline Positrion Emission Tomography
Hans F. Wehrl, Julian Schwab, Kathy Hasenbach, Gerald Reischl, Ghazaleh Tabatabai, Leticia Quintanilla-Martinez, Filip Jiru, Kamila Chughtai, Andras Kiss, Funda Cay, Daniel Bukala, Ron M. A. Heeren, Bernd J. Pichler, Alexander W. Sauter
Can. Res. (2013) 73 1470-1480 [DOI]

Identifying Tissue-Specific Signal Variation in MALDI Mass Spectrometric Imaging by Use of an Internal Standard
David A. Pirman, Andras Kiss, Ron M.A. Heeren, Richard Yost
Anal. Chem. (2013) 85 1090-1096 [DOI]

Quantitative MALDI Tandem Mass Spectrometric Imaging of Cocaine from Brain Tissue with a Deuterated Internal Standard
David Pirman, Richard Reich, Andras Kiss, Ron M.A. Heeren, Richard Yost
Anal. Chem. (2013) 85 1081-1089 [DOI]
Lysophosphatidic Acid Induces Atherosclerotic Plaque Destabilization by Increasing Vascular Inflammation
Martine Bot, Saskia C.A. de Jager, Luke MacAleese, H. Maxime Lagraauw, Theo J.C. van Berkel, Paul H.A. Quax, Johan Kuiper, Ron M.A. Heeren, Erik A.L. Biessen, Ilze Bot
J. Lipid Res. (2013) 54 1265-1274 [DOI]

Mass Spectrometric Imaging of Red Fluorescent Protein in Breast Tumor Xenografts
Kamila Chughtai, Lu Jiang, Harm Post, Paul T. Winnard Jr., Tiffany R. Greenwood, Venu Raman, Zaver M. Bhujwalla, Ron M. A. Heeren, Kristine Glunde
J. Am. Soc. Mass Spec. (2013) 24 711-717 [DOI]

Mass Spectrometry Images Acylcarnitines and Lysophosphatidylcholines in Breast Tumour Models
Kamila Chughtai, Lu Jiang, Tiffany R. Greenwood, Kristine Glunde and Ron M.A. Heeren
J. Lipid Res. (2013) 54 333-344 [DOI]

Active Learning for Convenient Annotation and Classification of Mass Spectrometry Images
Michael Hanselmann, Jens Roeder, Ullrich Koethe, Bernhard Y. Renard, Ron M. A. Heeren, Fred A. Hamprecht
Anal. Chem. (2013) 85 147-155 [DOI]

Detection systems for mass spectrometry imaging: A perspective on novel developments with a focus on active pixel detectors.
Julia Jungmann and Ron M.A. Heeren
Rap. Comm. Mass Spec. (2013) 27 1-23 [DOI]

Microscope Mode Secondary Ion Mass Spectrometry Imaging with a Timepix Detector
Andras Kiss, Julia H. Jungmann, Donald F. Smith and Ron M.A. Heeren
Rev. Sci. Instr. (2013) 84 013704 [DOI]

Combined MR, fluorescence and histology imaging strategy in a human breast tumor xenograft model
Lu Jiang, Tiffany R. Greenwood, Erika R. Amstalden van Hove, Kamila Chughtai, Venu Raman, Paul T. Winnard Jr, Ron Heeren, Dmitri Artemov and Kristine Glunde
NMR in Biomedicine (2013) 26 285-298 [DOI]

2012

Localized Hypoxia Results in Spatially Heterogeneous Metabolic Signatures in Breast Tumor Models
Lu Jiang, Tiffany R. Greenwood, Dmitri Artemov, Venu Raman, Paul T. Winnard Jr., Ron M.A. Heeren, Zaver M. Bhujwalla and Kristine Glunde
Neoplasia (2012) 14 732-741 [DOI]

A time of flight secondary ion mass spectrometry based molecular distribution distinguishes healthy and osteoarthritic human cartilage
Berta Cillero Pastor, Gert Eijkel, Andras Kiss, Francisco J. Blanco Garcia and Ron M.A. Heeren
Anal. Chem. (2012) 84 8909-8916 [DOI]

Biological Tissue Imaging with a Position and Time Sensitive Pixelated Detector
Julia H. Jungmann, Donald F. Smith, Luke MacAleese, Ivo Klinkert, Jan Visser and Ron M.A. Heeren
J. Am. Soc. Mass Spec. (2012) 23 1679-1688 [DOI]

Protein identification in mass spectrometry imaging
Nadine Mascini and Ron M.A. Heeren
Trends in Anal. Chem. (2012) 40 28-37 [DOI]

Advanced Mass Calibration and Visualization for FT-ICR Mass Spectrometry Imaging
Donald F. Smith, Ivo Klinkert, Marco Konijnenburg, Andriy Kharchenko, Ljiljana Pasa-Tolic, Ron M.A. Heeren
J. Am. Soc. Mass Spec. (2012) 23 1865-1872 [DOI]
Three-dimensional molecular reconstruction of the heart with imaging mass spectrometry
Lara Fornai, Annalisa Angelini, Ivo Klinkert, Frans Giskes, Gert Eijkel, Erika A. Amstalden-van Hove, Leendert A. Klerk, Marny Fedrigo, Marialuisa Valente, Gaetano Thiene and Ron M.A. Heeren.
Anal. Bioanal. Chem. (2012) 404 2927-2938  [DOI]

A multimodal Mass Spectrometry Imaging study of musculoskeletal tissues
Sanaullah Chughtai, Kamila Chughtai, Berta Cillero Pastor, András Kiss, Prashant Agrawal, Luke MacAleese and Ron M.A. Heeren
Int. J. Mass. Spec. (2012) 325-327 150-160  [DOI]

Emerging Technologies in Mass Spectrometry Imaging
Julia H. Jungmann and Ron M.A. Heeren
J. Prot. (2012) 75 5077-5092  [DOI]

Going forward: Increasing the accessibility of imaging mass spectrometry
Liam A. McDonnell, Ron M.A. Heeren, Per E. Andre, Markus Stoeckli, Garry L. Corthals
J. Prot. (2012) 75 5113-5121  [DOI]

imzML - a common data format for the flexible exchange and processing of mass spectrometry imaging data
Thorsten Schramm, Alfons Hester, Ivo Klinkert, Jean-Pierre Both, Ron M. A. Heeren, Alain Brunelle, Olivier Laprevote, Nicolas Desbenoit, Marie-France Robbe, Markus Stoeckli, Bernhard Spengler and Andreas Roemp
J. Prot. (2012) 75 5106-5110  [DOI]

Fiducial Markers for Mass Spectrometric Imaging
Kamila Chughtai, Lu Jiang, Tiffany R. Blackwell, Ivo Klinkert, Erika R. Amstalden, Ron M.A. Heeren and Kristine Glunde
Anal. Chem. (2012) 84 1817-1823  [DOI]

Performance of Orbitrap mass analyzer at various space charge and non-ideal field conditions
Andrei Kharchenko, Eugene N. Nikolaev, Gleb Vladimirov and Ron M. A. Heeren
J. Am. Soc. Mass Spec.(2012) 23 977-987  [DOI]

Analysis of phase dependent frequency shifts in simulated FTMS transients using the filtered diagonalization method
Franklin E. Leach III, Andriy Kharchenko, Gleb Vladimirov, Konstantin Aizikov, Peter B. O’Connor, Eugene Nikolaev, Ron M. A. Heeren, I. Jonathan Amster
IJMS (2012) 325-327 19-24  [DOI]

Radioactive holmium acetylacetonate microspheres for interstitial microbrachytherapy: an in vitro and in vivo stability study
W. Bult, H. de Leeuw, O.M. Steinebach, H.T. Wolterbeek, R.M.A. Heeren, A.D. van het Schip, W.E. Hennink, J.F.W. Nijsen
Pharmaceutical Research (2012) 29 827-836  [DOI]

Fourier transform ion cyclotron resonance mass resolution and dynamic range limits calculated by computer modeling of ion cloud motion.
Gleb Vladimirov, Christopher L. Hendrickson, Greg T. Blakney, Alan G. Marshall, Ron M. A. Heeren and Eugene N. Nikolaev
J. Am. Soc. Mass Spec.(2012) 23 375-384  [DOI]

2011

$C_{60}$ SIMS Fourier Transform Ion Cyclotron Resonance Mass Spectrometry
Donald F. Smith, Errol W. Robinson, Aleksey V. Tolmachev, Christian B. Berg, Ron M.A. Heeren, Ljiljana Pasa-Tolic
Anal. Chem. (2011) 83 9552-9556  [DOI]
An Alternative Paper Based Tissue Washing Method for Mass Spectrometry Imaging: Localized Washing and Fragile Tissue Analysis
Erika R. Amstalden van Hove, Donald F. Smith, Lara Fornai, Kristine Glunde and Ron M. A. Heeren
J. Am. Soc. Mass. Spec. (2011) 22 1885-1890 [DOI]

Detailed molecular characterization of castor oil ethoxylates by liquid chromatography multistage mass spectrometry
Andreas Nasioudis, Jan W. van Velde, Ron M.A. Heeren and Oscar F. van den Brink
J. Chrom. A (2011) 1218 7166-7172 [DOI]

High Dynamic Range Bio-Molecular Ion Microscopy with the Timepix Detector
Julia H. Jungmann, Luke MacAleese, Jan Visser, Marc J.J. Vrakking and Ron M.A. Heeren
Anal. Chem.(2011) 83 7888-7894 [DOI]

Simulation of the motion of ions in the orbital ion trap taking into account of space charge and imperfection of the retaining electric field
G.N. Wladimirov, A.W. Kharchenko, R. Heeren, E.N. Nikolajev
Transactions MFTI (2011) 3 157-162

High Reactivity Matrices Improve Matrix Enhanced Secondary Ion Mass Spectrometry.
Fabian N. Svara, Andras Kiss, Thorsten Jaskolla, Michael Karas and Ron M.A. Heeren
Anal. Chem. (2011) 83 8308-8313 [DOI]

Hypertension is associated with marked alterations in sphingolipid biology: a potential role for ceramide
Léon J.A. Spijkers, Rob F.P. van den Akker, Ben J.A. Janssen, Jacques J. Debets, Jo G.R. De Mey, Erik S.G. Stroes, Bert-Jan H. van den Born, Dayanjan S. Wijesinghe, Charles E. Chalfant, Luke MacAleese, Gert B. Eijkel, Ron M.A. Heeren, Astrid E. Alewijnse, Stephan L.M. Peters
PLoSOne (2011) 6 e21817 [DOI]

Facing challenges in Proteomics today and in the coming decade:Report of Roundtable Discussions at the 4th EuPA Scientific Meeting, Portugal, Estoril 2010.
Jrgen Cox, Ron M.A. Heeren, Peter James, Jess V. Jorrin-Novo, Eugene Kolker, Fredrik Levander, Nicholas Morrice, Paola Picotti, Pier Giorgio Righetti, Jean-Charles Sanchez, Christoph W. Turck, Roman Zubarev, Bruno M. Alexandre, Fernando J. Corrales, Gyrgy Marko-Varga, Sinead O'Donovan, Serena O'Neil, Jozsef Prechl, Tania Simoes, Wolfram Weckwerth and Deborah Penque
J. of Proteomics (2011) 75 4-17 [DOI]

Electrospray Ionization Tandem Mass Spectrometry of Ammonium Cationized Polyethers
Andreas Nasioudis, Ron M. A. Heeren, Irene van Doormalen, Nicolette de Wijs-Rot and Oscar F. van den Brink
J. Am. Soc. Mass Spec. (2011) 22 837-844. [DOI]

Electrospray ionization mass spectrometry of the non-covalent complexes of ammonium ions with high molar mass polyethers
Andreas Nasioudis, Jan W. van der Velde, Ron M. A. Heeren and Oscar F. van den Brink
Int. J. Mass Spect. (2011) 303 63-38 [DOI]

imzML: Imaging Mass Spectrometry Markup Language – A Common Data Format for Mass Spectrometry Imaging
Andreas Rnpp, Thorsten Schramm, Alfons Hester, Ivo Klinkert, Jean-Pierre Both, Ron M.A. Heeren, Markus Stekli, and Bernhard Spengler
Data Mining in Proteomics From Standards to Applications, Series: Methods in Molecular Biology, Vol. 696, Hamacher, Michael; Eisenacher, Martin; Stephan, Christian (Eds.), 1st Edition., 2011, 420 p. 145 illus., 2 in color., Hardcover, ISBN: 978-1-60761-986-4, A Humana Press book [DOI]

Protein identification with Liquid Chromatography and Matrix Enhanced Secondary Ion Mass Spectrometry (LC-ME-SIMS)
Luke MacAleese, Marc Duursma, Leendert A. Klerk, Greg Fisher and Ron M.A. Heeren
J. of Proteomics (2011) 74 993-1001 [DOI]
Vacuum Compatible Sample Positioning Device for MALDI Fourier Transform Ion Cyclotron Resonance Mass Spectrometry Imaging
Konstantin Aizikov, Donald F. Smith, David Chargin, Sergei Ivanov, Tzu-yung Lin, Ron M.A. Heeren, and Peter O'Connor
Rev. Sci. Instr. (2011) 82 054102 [DOI]

Size, weight and position: ion mobility and imaging MS combined
Andras Kiss and Ron M.A. Heeren
Anal. BioAnal. Chem (2011) 399 2623-2634 [DOI]

An External Matrix-Assisted Laser Desorption Ionization Source for Flexible FT-ICR Mass Spectrometry Imaging with Internal Calibration on Adjacent Samples
Donald F. Smith, Konstantin Aizikov, Marc C. Duursma, Frans Giskes, Dirk-Jan Spaanderman, Liam A. McDonnell, Peter B. O’Connor, and Ron M.A. Heeren
JASMS (2011) 22 130-137 [DOI]

End-Group Analysis of Methacrylic (Co)polymers by LC-ESI-MS2
Junkan Song, Jan W. van Velde, Luc L. T. Vertommen, Donald F. Smith, Ron M. A. Heeren and Oscar F. van den Brink
Macromolecules (2011) 44 1319-1326 [DOI]

2010

High-Resolution Ion Mobility Spectrometry–Mass Spectrometry on Poly(methyl methacrylate)**
Junkan Song, Christian H. Grun, Ron M. A. Heeren, Hans-Gerd Janssen, and Oscar F. van den Brink Angew. Chem. Int. Ed. (2010) 49 10168-10171 [DOI]

Discrimination of Polymers by Using Their Characteristic Collision Energy in Tandem Mass Spectrometry
Andreas Nasiodus, Antony Memboeuf, Ron M.A. Heeren, Donald F. Smith, Karoly Vekey, László Drahos, Oscar van den Brink
Anal. Chem (2010) 82 9350-9356 [DOI]

Discrimination between Charge-Catalyzed and Charge-Independent Fragmentation Processes of Cationized Poly(n-Butyl Acrylate)
Junkan Song, Antony Memboeuf, Ron M.A. Heeren, Károly Vékey, Oscar F. van den Brink
Rap. Comm. Mass Spec. (2010) 24 3214-3216 [DOI]

An Interactive, Multi-Modal Approach to Analysing High-Resolution Image Mass Spectrometry Data
Ferdi Smit, Lara Formai, Ron M.A. Heeren and Robert van Lierie
Proceedings of Vision, Modeling and Visualization (VMV) conference title: Eurographics Int. Workshop on Vision Modeling and Visualization, Date: 2010, Nov 15(2010) 283 - 289 [DOI]

Investigation of Polymerization Mechanisms of Poly(n-Butyl Acrylate)s Generated in Different Solvents by LC-ESI-MS2
Junkan Song, Jan W. van Velde, Luc L. T. Vertommen, Leo G. J. van der Ven, Ron M. A. Heeren and Oscar F. van den Brink
Macromolecules (2010) 43 7082-7089 [DOI]

MALDI Techniques in Mass Spectrometry Imaging.
Ron M.A. Heeren
In: John Lindon, George Tranter and David Koppenaal, editors. Encyclopedia of Spectroscopy and Spectrometry, 2nd edition, Vol 2. Oxford: Elsevier; 2010. pp. 1443–1451 [DOI]

Imaging breast cancer cell lines in-situ: a multi-modal imaging approach.
Erika Amstalden-van Hove, Tiffany R. Blackwell, Ivo Klinkert, Gert B. Eijkel, Ron M.A. Heeren, and Kristine Glunde
Cancer Research (2010) 70 9012-9021 [DOI]
A new imaging method for understanding chemical dynamics: Efficient slice imaging using an in-vacuum detector.
Julia Jungmann, Arjan Gijsbertsen, Jan Visser, Jan Visschers, Ron Heeren, and Marc Vrakking
Rev. Sci. Instr. (2010) 81 103112 [DOI]

Fast, High Resolution Mass Spectrometry Imaging Using a Medipix Pixelated Detector.
Julia H. Jungmann, Luke MacAleese, Ronald Buijs, Frans Giskes, Ad de Snaijer, Jan Visser, Jan Visschers, Marc J.J. Vrakking and Ron M.A. Heeren
JASMS (2010) 21 2023-2030 [DOI]

A concise review of Imaging Mass Spectrometry
Erika R. Amstalden van Hove, Donald F. Smith, Ron M.A. Heeren
J. Chromatography A (2010) 1217 3946-3954 [DOI]

TOF-SIMS imaging of polymeric scaffolds with surrounding tissue after in-vivo implantation.
Leendert A. Klerk, Patricia Y.W. Dankers, Eliane R. Popa, Anton W. Bosman, Marjolein E. Sanders, Kris A. Reedquist and Ron M.A. Heeren
Anal. Chem. (2010) 82 4337-4343 [DOI]

Formation of low charge state ions of synthetic polymers using quaternary ammonium compounds.
Andreas Nasioudis, William F. Joyce, Jan W. van Velde, Ron M.A. Heeren and Oscar F. van den Brink Anal. Chem. (2010) 82 5735–5742 [DOI]

Mass Spectrometric Imaging for biomedical tissue analysis.
K. Chughtai and Ron M.A. Heeren
Chem. Reviews (2010) 110 3237-3277 [DOI]

Biological tissue imaging at different levels: MALDI and SIMS imaging combined
J. Stauber and Ron M.A. Heeren
Bookchapter Eds.V Smentowski (2010) [DOI]

On-Tissue Protein Identification and Imaging by MALDI-Ion Mobility Mass Spectrometry
Jonathan Stauber, Luke MacAleese, J. Franck, Marten Snell, Emmanuelle Claude, basak Kükrer Kaletas, Ingrid van der Wiel, Maxensce Wisztorski, Isabelle Fournier and Ron M.A. Heeren
JASMS (2010) 21 338-347 [PDF file] [DOI]

Fast, high resolution secondary ion MS microscopy at full C_{60}^{+} beam current using a delay line detector
L. Klerk, N. Lockyer, A. Kharchenko, L.A. Macaleese, P.Y.W. Dankers, J.C. Vickerman and R.M.A. Heeren
Anal. Chem (2010) 82 801-807 [PDF file] [DOI]

Particle-in-cell simulations of experimentally observed frequency shifts between ions of the same mass-to-charge in Fourier Transform Ion Cyclotron Resonance Mass Spectrometry
Franklin E. Leach III, Andriy Kharchenko, Ron M. A. Heeren, Eugene Nikolaev, I. Jonathan Amster
J.Am. Soc. Mass Spec. (2010) 21 203-208 [DOI]

Imaging mass spectrometry using a delay line detector
Martin Froesch, Stefan L. Luxembourg, Duncan Verheijde, Ron M. A. Heeren
Eur. J. Mass Spec. (2010)16 35-45 [DOI]

On-the-fly targeted selection of labeled peptides in LC-MS base quantitative proteomics
Ioana M. Taban Barbu, Donald F. Smith, Bas van Breukelen, Yuri E.M. van der Burgt, Marc Duursma, Albert J.R. Heck, Ron M.A. Heeren Jeroen Krijgsvedl
Rapid Communications in Mass Spectrometry (2010)24 239-241 [PDF file] [DOI]

2009
Correlating MALDI and SIMS imaging mass spectrometric datasets of biological tissue surfaces
Gert B. Eijkel, B. Kuekker-Kaletas, Ingrid M. van der Wiel, J.M. Kros, Theo M. Luider and Ron M.A. Heeren
Surface and Interface Analysis (2009) 41 675-685 [DOI]

Ruisloos deeltjes detecteren
Raoul van Gastel, Sense Jan van der Molen, Irakli Sikharulidze, Georg Gademann, Julia Jungmann, Ron M.A. Heeren and Marc Vrakking
Ned. Tijdschrift voor Natuurkunde (2009) 75 402-405

Tissue Analysis with High-Resolution Imaging Mass Spectrometry
A.F. Maarten Altelaar and Ron M.A. Heeren
Methods in molecular biology (Clifton, N.J.) (2009) 492 295-308 [DOI]

Towards Digital Staining using Imaging Mass Spectrometry and Random Forests
Michael Hanselmann, Ullrich Kotho, Marc Kirchner, Bernhard Y. Renard, Erika R. Amstalden, Kristine Glunde, Ron M. A. Heeren, Fred A. Hamprecht
J. Proteome Research (2009) 8 3558-3567 [DOI]

Fast and automated large-area imaging MALDI mass spectrometry in microprobe and microscope mode
Leendert A. Klerk, A.F. Maarten Altelaar, Martin Froesch, Liam A. McDonnell, Ron M.A. Heeren
International Journal of Mass Spectrometry (2009) 285 19-25 [PDF file] [DOI]

Structural characterization of alpha-lactalbumin nanotubes
J.F. Graveland-Bikker, R.I. Koning, H.K. Koerten, R.B.J. Geels, R.M.A. Heeren, C.G. de Kruif
Soft Matter (2009) 5 2020-2026 [DOI]

Sample Preparation for Tissue Imaging by Imaging Mass Spectrometry: Human Cerebellum as a Test Case
Basak Kükrer Kaletas, Ingrid M. van der Wiel, Jonathan Stauber, Lennard J. Dekker, Coskun Güzel, J.M. Kros, Theo Luider, Ron M.A. Heeren
Proteomics (2009) 9 2622-2633 [DOI]

Imaging mass spectrometry: Hype or Hope
Ron M.A. Heeren, Donald F. Smith, Jonathan Stauber, Basak Kükrer-Kaletas, Luke MacAleese
J.Am. Soc. Mass Spec. (2009) 20 1006-1014 [DOI]

Perspectives for Imaging Mass Spectrometry in the Proteomics Landscape
Luke MacAleese, Erika R. Amstalden van Hove, Jonathan Stauber and Ron M.A. Heeren
Proteomics (2009) 9 819-834 [DOI]

Electron capture dissociation of peptide hormone changes upon opening of the tocin ring and complexation with transition metalcations
Yuri E. M. van der Burgt, Magnus Palmblad, Hans C. Dalebout, Ron M. A. Heeren, and André M. Deelder
Rap. Comm. Mass Spec. (2009) 23 31-38 [DOI]

Nitromatrix provides improved LC-MALDI signals and more protein identifications
Petri Kouvonen, Liam A. Mcdonnell, Ron M.A. Heeren and Garry Corthals
Proteomics (2009) 9 1662-1671 [PDF file] [DOI]

2008

Thermal activation of the co-chaperonins GroES and gp31 probed by mass spectrometry
Rimco B.J. Geels, Stephane Calmat, Albert J.R. Heck, Saskia M. van der Vies and Ron M.A. Heeren
Rap. Comm. in Mass Spec. (2008) 22 3633-3641 [PDF file] [DOI]

Concise Representation of Mass Spectrometry Images by Probabilistic Latent Semantic Analysis
Michael Hanselmann, Marc Kirchner, Bernhard Y. Renard, Erika R. Amstalden, Kristine Glunde, Ron M.A.
Automated, feature-based image alignment for high resolution imaging mass spectrometry of large biological samples
A. Broersen, R. van Liere, A.F. Maarten Altelaar, Ron M.A. Heeren and Liam A. McDonnell
J. Am. Soc. Mass Spec. (2008) 19 823-832 [DOI]

Quality of surface: The influence of sample preparation on MS based biomolecular tissue imaging with MALDI-MS and (ME-)SIMS.
Ron M.A. Heeren, Basak Kürker-Kaletas, Ioana M. Taban, Luke P. MacAleese, Liam A. McDonnell
Appl. Surf. Sci. (2008) 255 1289-1297 [DOI]

A novel workflow control system for FTICR-MS allows on-the-fly data dependent decisions
Ioana M. Taban, Yuri E.M. van der Burgt, Marc C. Duursma, Marco Seynen, Marco Konijnenburg, Anton Vijftigtschild, Idsart Attema and Ron M.A. Heeren
Rap. Comm. Mass Spec. (2008) 22 1245-1256 [DOI]

2007

Mass Microscopy
M. Setou, R.M.A Heeren, M. Stoeckli, S. Simma. M. Matsumoto
Seikagaku (2007) 79 874-879

Realistic modeling of ion clouds motion in an FTICR cell using a Particle in Cell approach
Eugene N. Nikolaev, Ron M.A. Heeren, Alexander M. Popov, Alexander V. Pozdneev and Konstantin S. Chingin
Rap. Comm. Mass Spec. (2007) 21 3527-3546 [DOI]

Imaging Mass Spectrometry
Liam A. McDonnell, Ron M. A. Heeren
Mass Spectrometry Reviews (2007) 26 606-643 [PDF file] [PDF file] [DOI]

Tools and strategies for visualization of large image datasets in high-resolution imaging mass spectrometry
Ivo Klinkert, Liam A. McDonnell, Stefan L. Luxembourg, A.F. Maarten Altelaar, Erika R. Amstalden, Sander R. Piersma, Marco Konijnenburg and Ron M.A. Heeren
Rev. Sci. Instr. (2007) 78 053716 [DOI]

Comparative gas-phase activation of two similar noncovalent heptameric protein complexes: gp31 and GroES
Rimco B.J. Geels, Saskia M. van der Vies, Albert J.R. Heck and Ron M.A. Heeren
Int. J. Mass Spec. (2007) 265 159-168 [DOI]

Imaging Mass Spectrometry at Cellular Length Scales
A.F. Maarten Altelaar, Stefan L. Luxembourg, Liam A. McDonnell, Sander R. Piersma† and Ron M.A. Heeren
Nature Protocols (2007) 2 1185-1196 [DOI]

Disulfide bond cleavages observed in SORI-CID of three nonapeptides complexed with divalent transition metal cations
Romulus Mihalca, Yuri E. M. van der Burgt, Albert J. R. Heck and Ron M.A. Heeren
J. Mass Spec. (2007) 42 450-458 [PDF file] [DOI]

Imaging of peptides in the rat brain using MALDI-FTICR mass spectrometry
I.M. Taban, A.F.M. Altelaar, J. Fuchser, Y.E.M. van der Burgt, L.A. McDonnell, G. Baykut and R.M.A. Heeren
J. Am. Soc. Mass Spec. (2007) 18 145-151 [DOI]
Metastasis-related Proteins in Cerebrospinal Fluid by a Combination of MALDI-TOF, MALDI-FTICR, and NanoLC-FTICR Mass Spectrometry
A. Roempp, L. Dekker, I. Taban, G. Jenster, W. Boogerd, H. Bonfrer, B. Spengler, R. M. A. Heeren, P. S. Smitt, and T. M. Luider
Mol. Cell. Proteomics (2007) 7 S56 254 [PDF file] [DOI]

Identification of leptomeningeal metastasis-related proteins in cerebrospinal fluid of patients with breast cancer by a combination of MALDI-TOF, MALDI-FTICR and nanoLC-FTICR mass spectrometry
Andreas Roempp, Lennard Dekker, Ioana Taban, Guido Jenster, Willem Boogerd, Hans Bonfrer, Bernhard Spengler, Ron M.A. Heeren, Peter Sillevis Smitt and Theo Luider
Proteomics (2007) 7 474-481 [PDF file] [PDF file] [DOI]

Specific peptides identified by MALDI-TOF mass spectrometry in placental tissue from pregnancies complicated by early onset preeclampsia attained by laser capture dissection
Christianne J.M. de Groot, Coskun Gzel, M. de Maat, Régine P. Steegers-Theunissen, Pieter Dirkxs, Eva M. Roes, Ron M.A. Heeren, Theo M. Luider, Eric A.P. Steegers
Proteomics - Clinical Applications (2007) 1 325-335 [PDF file] [DOI] [DOI]

High-resolution MALDI imaging mass spectrometry allows localization of peptide distributions at cellular length scales in pituitary tissue sections
A.F. Maarten Altelaar, Ioana M. Taban, Liam A. McDonnell, Robert P.J. de Lange, Roger A.H. Adan, Wolter J. Mooi, Ron M.A. Heeren and Sander R. Piersma
Int. J. Mass Spec.(2007) 260 203-211 [DOI]

Extended data analysis strategies for high resolution imaging MS: New methods to deal with extremely large image hyperspectral datasets
Leendert A. Klerk, Alexander Broersen, Ian W. Fletcher, Robert van Liere, Ron M.A. Heeren
Int. J. Mass Spec.(2007) 260 222-236 [PDF file] [DOI]

Imaging mass spectrometry imaging
Ron M.A. Heeren and Jonathan V. Sweedler
Int. J. Mass Spec.(2007) 260 89 [PDF file] [DOI]

Parallel processing of large datasets from nanoLC-FTICR-MS measurements
Y.E.M. van der Burgt, I.M. Taban, M. Konijnenburg, M.C. Duursma, R.M.A. Heeren, M. Biskup, R.V. van Nieuwenhout, H.E. Bal, A. Roempp
J. Am. Soc. Mass Spec. (2007) 18 152-161 [PDF file] [DOI]

2006

The Molecular scanner in microscope mode
Stefan L. Luxembourg, Ali R. Vaezaddeh, Erika R. Amstalden, Catherine G. Zimmermann-Ivol, Denis F. Hochstrasser and Ron M.A. Heeren
Rap. Comm. Mass Spec.(2006) 20 3435-3442 [DOI]

Massamicroscopie: moleculaire flitsfoto's van eiwitverdelingen
Stefan Luxembourg, Maarten Altelaar, Liam McDonnell and Ron M.A. Heeren
Ned. Tijdschrift voor Natuurkunde (2006) 72 188-192

Storage and analysis of mass spectrometry derived peptides
Mark K. Titulaer, Lennard J. Dekker, Ivar Siccama, Ron M.A. Heeren, Peter A. Sillevis Smitt and Theo M. Luider
BMC Bioinformatics (2006) 7 403 [DOI]

Combined infrared multiphoton dissociation and electron capture dissociation using co-linear and overlapping beams in Fourier transformation cyclotron resonance mass spectrometry
Romulus Mihalca, Yuri van der Burgt, Liam McDonnell, Marc C. Duursma, Illya Čerjak, Albert J.R. Heck,
2006

Higher Sensitivity Secondary Ion Mass Spectrometry of Biological Molecules for High Resolution, Chemically Specific Imaging
Liam A. McDonnell, Ian W. Fletcher, Robert P.J. de Lange en Ron M.A. Heeren
J. Am. Soc. Mass Spec.(2006) 17 1195-1202  [DOI]

Instrumental developments in interfacing ESI to FTICR-MS instruments
Ron M.A. Heeren
Encyclopedia of Mass Spectrometry, R. Caprioli, M.L. Gross and W.M.A. Niessen eds. (2006) Elsevier Amsterdam, The Netherlands Volume 8, 163-171 [PDF file]

ECD as Structural Probe for Non-Covalent Gas-Phase Protein Assemblies
Rimco B.J. Geels, Saskia M. van der Vies, Albert J.R. Heck and Ron M.A. Heeren
Anal. Chem. (2006) 78 7191-7196  [DOI]

Fragmentation at and above surfaces in SIMS; effects of biomolecular yield enhancing surface modifications
Stefan L. Luxembourg and Ron M.A. Heeren
Int. J. Mass Spec. (2006) 253 181-192 [DOI]

Atypical behavior in the electron capture induced dissociation of biologically relevant transition metal ion complexes of the peptide hormone oxytocin
Anne J. Kleinnijenhuis, Romulus Mihalca, Ron M.A. Heeren, Albert J.R. Heck
Int. J. Mass Spec. (2006) 253 217-224 [DOI]

Tandem mass spectrometry of intact GroEL-substrate chaperonin complexes reveal substrate specific conformational changes in the GroEL trans ring
Esther van Duijn, Douglas A. Simmons, Robert H. H. van den Heuvel, Harm van Heerikhuizen, Ron M. A. Heeren, Carol V. Robinson, Saskia M. van der Vies and Albert J. R. Heck
J. Am. Chem. Soc.(2006) 128 4694-4702 [DOI]

Gold-enhanced biomolecular surface imaging of cells and tissue by SIMS and MALDI mass spectrometry
A.F. Maarten Altelaar, Kees Jalink, Robert P.J. de Lange, Roger A.H. Adan, Ron M.A. Heeren, and Sander R. Piersma
Anal. Chem.(2006) 78 734-742  [DOI]

The influence of the cholesterol microenvironment in tissue sections on molecular ionization efficiencies and distributions in ToF-SIMS
A.F. Maarten Altelaar, Jan van Minnen, Ron M.A. Heeren, and Sander R. Piersma
Appl. Surf. Sci.(2006) 252 6702–6705  [DOI]

Why don’t biologists use SIMS; a critical evaluation of imaging MS
R.M.A. Heeren, L.A. McDonnell, E. Amstalden, S.I. Luxembourg, A.F.M. Altelaar and S.R.Piersma
Appl. Surf. Sci. (2006) 252 6827–6835  [DOI]

General Discussion paper SIMS XV
Castner D, Ewing AG, Heeren RMA, et al.
Appl. Surf. Sci. (2006) 252 6827–6835

2005

Does double electron capture lead to the formation of biradicals? An ECD-SORI-CID study on lacticin 481.
Anne J. Kleinnijenhuis, Marc C. Duursma, Albert J.R. Heck and Ron M.A. Heeren
J. Am. Soc. Mass Spec. (2005) 10 1595-1601 [DOI]
**Proteome imaging: A closer look at life's organization**
Ron M. A. Heeren
Proteomics (2005) 5 4316-4326 [PDF file] [DOI]

**Comparing three PCA-based Methods for the 3D Visualization of Imaging Spectroscopy Data**
A. Broersen, R. van Liere & R.M.A. Heeren
Proceedings IASTED International Conference on Visualization, Imaging, & Image Processing (VIIP 2005), J.J. Villanueva (ed.), Benidorm, Spain, September 2005, ISBN 0-88989-530-2, 540-545 [PDF file]

**Mass spectrometer identifies and localises biomarkers in cells**
Ron M.A. Heeren
NPC highlights (2005) 1 24-27 [PDF file]

**Simion modelling of octupole linacs for FTMS**
Ioana M. Taban, Liam A. McDonnell, Andreas Roempp, Iliya Cerjak and Ron M.A. Heeren
Proceedings IASTED International Conference on Visualization, Imaging, & Image Processing (VIIP 2005), J.J. Villanueva (ed.), Benidorm, Spain, September 2005, ISBN 0-88989-530-2, 540-545 [PDF file]

**Infrared mass spectrometric imaging below the diffraction limit**
S.L. Luxembourg, L.A. McDonnell, Todd H. Mize and Ron M. A. Heeren
J Proteome Research (2005) 4 671-673 [PDF file] [DOI]

**Monitoring chaperonin-assisted protein folding by mass spectrometry**
Esther van Duijn, Patrick J. Bakkes, Ron M. A. Heeren, Robert H. H. van den Heuvel, Harm van Heerikhuizen, Saskia M. van der Vies and Albert J. R. Heck
Nature Methods, (2005) 2 371-376 and comment by Carol V. Robinson [DOI]

**Direct molecular imaging of Lymnaea nervous tissue at subcellular resolution by mass spectrometry**
A.F. Maarten Altelaar, Jan van Minnen, Connie R. Jiménez, Ron M.A. Heeren and Sander R. Piersma
Analytical Chemistry, (2005) 77 735-741. [DOI]

**Examples of FTICR-MS developments: from ion physics to remote acces biochemical mass spectrometry.**
A. Roempp, R. Mihalca, I. Taban, A.J.R. Heck and A.J. Kleinnijenhuis, L.A. McDonnell, Todd H. Mize and and R.M.A. Heeren
Eur. J. Mass Spec. (2005) 11 443-456 [PDF file] [DOI]

**Matrix-Enhanced Secondary Ion Mass Spectrometry Imaging of Brain Tissue.**
L.A. McDonnell, S.R. Piersma, A.F.M. Altelaar, Todd H. Mize, Peter D.E.M. Verhaert, Jan van Minnen and R.M.A. Heeren
Journal of Mass Spectrometry, (2005) 40 160-168 [PDF file] [DOI]

### 2004

**Low temperature ECD reveals selective non-ergodic dissociation**
R. Mihalca, L.A. McDonnell, Albert J. R. Heck and Ron M. A. Heeren
J. Am. Soc. Mass Spec. (2004) 15 1869–1873 [DOI]

**A practical evaluation of preparation methods and accessories for the infrared spectroscopic analysis of traditional multilayered paint films.**
Jaap van der Weerd, Ron M.A. Heeren and Jaap J. Boon
Studies in Conservation, 49 193-210 [PDF file] [DOI]

**A modular data and control system to improve sensitivity, selectivity, speed of analysis, ease of use, and transient duration in an external source FTICR-MS**
T. H. Mize, G. v. Rooij, M. Duursma, M. Seynen, M. Konijnenburg, A. Vijftigschild, C. v. Doornik, I. Taban, R. M. A. Heeren
Int. J. Mass Spec. (2004) 235 243-253 [DOI]
The Mass Microscope: high-speed, (sub-) micron imaging of peptide and protein distributions
Stefan Luxembourg, T.H. Mize, L.A. McDonnell and Ron M.A. Heeren
Analytical Chemistry (2004) 76 5339-5344  [DOI]

Mass Spectrometry using high performance FTICR-MS methods: a mini review
Ron M.A. Heeren, A.J. Kleinnijenhuis, L.A. McDonnell and T.H. Mize
Analytical and Bioanalytical Chemistry (2004) 378 1048-1058.  [DOI]

Design and performance of a new thermostated FT-ICR cell operating at 77-500 K
Xinghua Guo, Marc C. Duursma, Ahmed Al-Khalili, Liam A. McDonnell and Ron M.A. Heeren
Int. J. Mass Spec. (2004) 231 37-45[PDF file] [DOI]

2003

Using matrix peaks to map topography: increased mass resolution and enhanced sensitivity in chemical imaging.
Liam A. McDonnell, Todd H. Mize, Stefan L. Luxembourg, Sander Koster, Gert B. Eijkel, Elisabeth Verpoorte, Nico F. de Rooij and Ron M.A. Heeren
Analytical Chemistry (2003) 75 4373-4381.  [DOI]

Evaluating the VLAM-G toolkit on the DAS-2
Zeger W. Hendrikse, Adam S. Z. Belloum, Philip M.R. Jonkergouw, Gert B. Eijkel, Ron .M.A. Heeren, Bob L.O. Hertzberger, Vladimir Korkhov, Cees T.A.M. de Laat,Dmitry Vasunin.
Future Generation of Computer Systems (2003) 19 815-824.  [DOI]

The Effect of Local Matrix Crystal Variations in Matrix Assisted Ionization Techniques for Mass Spectrometry.
Stefan L. Luxembourg, Liam A. McDonnell, Marc C. Duursma, Xinghua Guo and Ron M.A. Heeren
Analytical Chemistry (2003) 75 2333-2341.  [DOI]

Localization of intramolecular monosulfide bridges in lantibiotics determined with electron capture induced dissociation.
Anne J. Kleinnijenhuis, Marc C. Duursma, Eefjan Breukink, Ron M.A. Heeren, Albert J.R. Heck. Analytical Chemistry (2003) 75 3219-3225.  [DOI]

The identification of pigments in paint cross-sections by reflection visible light imaging microspectroscopy (VIS-imaging.
Van der Weerd, J., M. K. Van Veen, et al.
Analytical Chemistry (2003) 75 716-722.  [DOI]

Electron capture dissociation mass spectrometry of doubly charged hyperbranched polyesteramides. Koster, S., S. Ingemann, et al.
Journal of the American Society for Mass Spectrometry (2003) 14 332-341.  [DOI]

Manipulation of internal energy of protonated biomolecules in ESI-FT-ICR Mass Spectrometry.
Guo, X., M. C. Duursma, et al.
Journal of Mass Spectrometry (2003) 38 597-606.  [DOI]

Experimental calibration of SORI-CID internal energy scale : energy uptake and loss.
Guo, X., M. C. Duursma, et al.
International Journal of Mass Spectrometry (2003) 225 71-82.  [DOI]

Evaluation of the chemical and physical changes induced by KrF laser irradiation of tempera paints. Marta Castillejo, Margarita Martín, Mohamed Oujja, Jesús Santamaria, Diego Silva, Ricardo Torres, Alexandra Manousaki, Vassilis Zafiropulos, Oscar F. van den Brink, Ron M.A. Heeren, Rianne Teule, Alberto Silva.
Journal of Cultural Heritage (2003) 4 257-263.  [DOI]
Controlled UV laser cleaning of painted artworks: a systematic effect study on egg tempera paint samples. Rianne Teule, Hans Scholten, Oscar F. van den Brink, Ron M.A. Heeren, Vassilis Zafiropulos, Roy Hesterman, Marta Castillejo, Margarita Martin, Urban Ullenius, Isac Larsson, Fernando Guerra-Librero, Alberto Silva, Helena Gouveia and Maria-Beatriz Albuquerque. Journal of Cultural Heritage (2003) 4 209-215. [DOI]

Chemical changes in old master paintings: dissolution, metal soap formation and remineralization processes in lead pigmented paint layers of 17th century paintings. Van der Weerd, J., J. J. Boon, et al. Journal for Art Technology and Conservation (2002) 1 36-51.

Isomer separation of hyperbranched polyesteramides with gas-phase H/D exchange and a novel MSn approach: DoDIP. Koster, S., M. C. Duursma, X. Guo, R. A. T. M. van Benthem, C. G. de Koster, J. J. Boon, and R. M. A. Heeren. Journal of Mass Spectrometry (2002) 37 792-802. [DOI]

Analytical study of the chemical and physical changes induced by KrF laser cleaning of tempera paints. Marta Castillejo, Margarita Martin, Mohamed Oujja, Diego Silva, Ricardo Torres, Alexandra Manousaki, Vassilis ZafiropulosOscar F. van den Brink, Ron M. A. Heeren, Rianne Teule, Alberto Silva and Helena Gouveia Analytical Chemistry (2002) 74 4662 - 4671. [DOI]

Quantitative analysis of copolymers: influence of the structure of the monomer on the ionization efficiency in electrospray ionization FTMS. Koster, S., B. Mulder, M. C. Duursma, J. J. Boon, H. J. A. Philipson, J. W. van Velde, M. W. F. Nielen, C. G. de Koster, and R. M. A. Heeren. Macromolecules (2002) 35 4919 - 4928. [DOI]

Probing mass discriminations and mass shifts in the ITMS mass spectra of externally generated MALDI ions with synthetic polymers. Van Rooij, G. J., J. J. Boon, M. C. Duursma, R. M. A. Heeren. International Journal of Mass Spectrometry (2002) 221 201-207. [DOI]

Fourier Transform Infrared microscopic imaging of an embedded paint cross-section. Van der Weerd, J., H. Brammer, J. J. Boon, R. M. A. Heeren. Applied Spectroscopy (2002) 56 275-283. [DOI]

VLAM-G: A Grid-based virtual laboratory. H. Afsarmanesh, R.G. Belleman, A.S.Z. Belloum, A. Benabdelskader, J.F.J. van den Brand, G.B. Eijkel, A. Frenkel, C. Garita, D.L. Groep, R.M.A. Heeren, Z.W. Hendrikse, L.O. Hertzberger, J.A. Kaandorp, E.C. Kaletas A1, V. Korkhov, C.T.A.M. de Laat, P.M.A. Sloot, D. Vasunin, A. Visser, H.H. Yakali. Scientific Programming (2002) 10 173-181 [DOI]

Analysis of natural organic pigments by laser desorption mass spectrometry (Idms): A preliminary study to spatially resolved mass spectrometry. Wyplosz, N., R. M. A. Heeren, et al. Dyes in History and Archaeology (2001) 16/17 187-198.
A European 640 x 486 PtSi camera for infrared reflectography.
van der Weerd, J., R. M. A. Heeren, and J. R. J. van Asperen de Boer.
La peinture et le laboratoire: procédés. méthodologie. applications. R. van Schoute and H. Verougraete.
Leuven, Peeters (2001): 231-243.

Matrix-assisted laser desorption/ionization Fourier transform mass spectrometric analysis of oxygenated triglycerides and phosphatidylcholines in egg tempera paint dosimeters used for environmental monitoring of museum display conditions.
Van den Brink, Oscar F., Jaap J. Boon, Peter B. O'Connor, Marc C. Duursma, and Ron M. A. Heeren. Journal of Mass Spectrometry (2001) 36 479-492. [PDF file] [DOI]

Spatially-resolved TOF-MS analysis of paint materials and easel paintings samples.
Wyplosz, N., M. C. Duursma, J. J. Boon, and R. M. A. Heeren.
Advances in Mass Spectrometry. E. Gelpi. Chichester, Wiley. 15 (2001): 883-884.

An ESI-FTMSMS study of the structure of photo-oxidised egg glycerolipids.
Van den Brink, O. F., M. C. Duursma, J. J. Boon, and R. M. A. Heeren.
Advances in Mass Spectrometry. E. Gelpi. Chichester, Wiley. 15 (2001): 889-890.

Monitoring the effects of traditional 19th century ADDITIVES on the chemical drying of OIL PAINT by mass spectrometry.
Languri, G. M., J. van der Horst, W. J. Muizebelt, R. M. A. Heeren, and J. J. Boon.
Advances in Mass Spectrometry. E. Gelpi. Chichester, Wiley. 15 (2001): 831-832.

Sequencing of synthetic copolyesters by ESI FTMS.
Koster, S., M. C. Duursma, J. J. Boon, M. W. F. Nielen, C. G. de Koster, and R. M. A. Heeren.
Advances in Mass Spectrometry. E. Gelpi. Chichester, Wiley. 15 (2001): 917-918.

A novel surface induced dissociation tandem mass spectrometry set-up.
Heeren, R. M. A., M. C. Duursma, A. de Snaijer, P. G. Kistemaker, and J. J. Boon.
Advances in Mass Spectrometry. E. Gelpi. Chichester, Wiley. 15 (2001): 469-470.

ESI-FTICR tandem mass spectrometry in the determination of internal energy relaxation rates of macromolecules.
Heeren, R. M. A., M. C. Duursma, L. Drahos, and K. Vékey.
Advances in Mass Spectrometry. E. Gelpi. Chichester, Wiley. 15 (2001): 355-356.

Fragmentation of suberin and composition of aliphatic monomers released by methanolysis of cork from Quercus suber L., analysed by GC-MS, SEC and MALDI-MS.
Bento, M. F., H. Pereira, M. A. Cunha, A. M. C. Moutinho, K. J. van den Berg, J. J. Boon, O. van den Brink, and R. M. A. Heeren.
Holzforschung (2001) 55 487-493. [DOI]

Escherichia coli minicell membranes are enriched in cardiolipin.
Koppelman, Cecile-Marie, Tanneke den Blaauwen, Marc C. Duursma, Ron M. A. Heeren, and Nanne Nanninga.
Journal of Bacteriology (2001) 183 6144-6147. [DOI]

Structural characterization of hyperbranched polyesteramides: MSn and the origin of species.
Koster, Sander, Chris G. de Koster, Rolf A. T. M. van Benthem, Marc. C. Duursma, Jaap J. Boon, and Ron M. A. Heeren.
International Journal of Mass Spectrometry and Ion Physics (2001) 210/211 591-602. [DOI]
Lysozyme distribution and conformation in a biodegradable polymer matrix as determined by FTIR techniques.
Van de Weert, Marco, Ron van ’t Hof, Jaap van der Weerd, Ron M. A. Heeren, George Posthuma, Wim E. Hennink, Daan J. A. Crommelin.
Journal of Controlled Release (2000) **183** 6144 - 6147. [DOI]

Improvements in surface preparation of paint cross-sections necessary for advanced imaging techniques.
Wyplosz, N., R. Koper, et al.
Art et Chimie, la Couleur : Actes du congrs. J. Goupy and J.-P. Mohen. Paris, CNRS ditions (2000) 126-129.

Aspects of 17th century binding medium : Inclusions in Rembrandt's Anatomy Lesson of Dr Nicolaes Tulp.
Noble, P., J. Wadum, et al.
Art et Chimie, la Couleur : Actes du congrs. J. Goupy and J.-P. Mohen. Paris, CNRS ditions (2000) 65-68.

Structural analysis of synthetic homo- and copolyesters by electrospray ionization on a Fourier transform ion cyclotron resonance mass spectrometer.
Koster, Sander, Marc C. Duursma, Jaap J. Boon, Michel W. F. Nielen, Chris G. de Koster, and Ron M. A. Heeren.
Journal of Mass Spectrometry (2000) **35** 739-748. [DOI]

Controlled laser cleaning of painted artworks using accurate beam manipulation and on-line LIBS-detection.
Scholten, J. H., J. M. Teule, V. Zafiropulos and R. M. A. Heeren
Journal of Cultural Heritage (2000) **1** S215-S220. [DOI]

Endgroup determination of synthetic polymers by electrospray ionization Fourier transform ion cyclotron resonance mass spectrometry.
Koster, Sander, Marc C. Duursma, Jaap J. Boon, Ron M. A. Heeren.
Journal of the American Society for Mass Spectrometry (2000) **11** 536-543. [DOI]

1987 - 1999

Identification of the lowest energy dissociation pathway of collisionally activated O-methyl oligosaccharide \([M + Na]^+\) cations by SORI-FTMS.
de Koster, C. G., R. M. A. Heeren, and J. J. Boon.
Fundamentals and Applications of Gas Phase Ion Chemistry. K. R. Jennings, Kluwer (1999): 457-458.

Thermal energy distribution observed in electrospray ionization.
Drahos, L., R. M. A. Heeren, C. Collette, E. de Pauw, and K. Vékey.
Journal of Mass Spectrometry (1999) **34** 1373-1379. [DOI]

Isotope beating effects in the analysis of polymer distributions by Fourier Transform Mass Spectrometry.
Easterling, M. L., I. J. Amster, G. J. van Rooij, and R. M. A. Heeren.
Journal of the American Society for Mass Spectrometry (1999) **10** 1074-1082. [DOI]

Summary of the workshop on fundamentals and applications in Fourier transform ion cyclotron resonance mass spectrometry.
Heeren, R. M. A.
Fundamentals and Applications of Gas Phase Ion Chemistry. K. R. Jennings, Kluwer (1999): 445.

Characterisation of synthetic polymers with FT-ICR-MS.
Heeren, R. M. A., G. J. van Rooij, C. G. de Koster, and J. J. Boon.
Fundamentals and Applications of Gas Phase Ion Chemistry. K. R. Jennings, Kluwer (1999): 454-456.
A novel method to determine collisional energy transfer efficiency by Fourier Transform Ion Cyclotron Resonance Mass Spectrometry.
Heeren, R. M. A. and K. Vékey.
Rapid Communications in Mass Spectrometry (1998) 12 1175-1181. [DOI]

Determination of block length distributions of poly(oxypropylene) and (poly(oxyethylene) block copolymers by MALDI-FTICR mass spectrometry.
van Rooij, G. J., M. C. Duursma, C. G. de Koster, R. M. A. Heeren, J. J. Boon, P. J. W. Schuyl, and E. R. E. van der Hage.
Analytical Chemistry (1998) 70 843-850. [DOI]

Large ion yields in hydrogen scattering from a graphite surface.
Tsumori, K., W. R. Koppers, R. M. A. Heeren, M. F. Kadodwala, J. H. M. Beijersbergen, and A. W. Kleyn.
J.Appl.Phys. (1997) 81 6390-6396. [DOI]

Structural analysis of polyoxyalkyleneamines by matrix-assisted laser desorption/ionization on an external ion source FT-ICR-MS and NMR.
van der Hage, E. R. E., M. C. Duursma, R. M. A. Heeren, J. J. Boon, M. W. F. Nielen, A. J. M. Weber, C. G. de Koster, and N. K. de Vries.
Macromolecules (1997) 30 4302-4309. [DOI]

Correction of time-of-flight shifted polymeric molecular weight distributions in matrix-assisted laser desorption/ionization Fourier transform mass spectrometry.
O'Connor, P. B., M. C. Duursma, G. J. van Rooij, R. M. A. Heeren, and J. J. Boon.
Analytical Chemistry (1997) 69 2751-2755. [DOI]

High resolution end group determination of low molecular weight polymers by matrix-assisted laser desorption ionization on an external ion source Fourier transform ion cyclotron resonance mass spectrometer.
Van Rooij, G. J., M. C. Duursma, R. M. A. Heeren, J. J. Boon, and C. G. de Koster.
Journal of the American Society for Mass Spectrometry (1996) 7 449-457. [DOI]

Rapid microscale analyses with an external ion source Fourier transform ion cyclotron resonance mass spectrometer.
Heeren, R. M. A. and J. J. Boon.
International Journal of Mass Spectrometry and Ion Processes (1996) 157/158 391-403. [DOI]

Endgroup analysis of polyethylene glycol polymers by matrix-assisted laser desorption/ionization Fourier-transform ion cyclotron resonance mass spectrometry.
De Koster, C. G., M. C. Duursma, G. J. van Rooij, R. M. A. Heeren, and J. J. Boon.
Rapid Communications in Mass Spectrometry (1995) 9 957-962. [DOI]

Direct temperature resolved HRMS of fire-retarded polymers by in-source PyMS on an external ion source Fourier transform ion cyclotron resonance mass spectrometer.
Heeren, R. M. A., C. G. de Koster, and J. J. Boon.
Analytical Chemistry (1995) 67 3965-3970. [DOI]

Angular and energy distributions of surface produced H- and D- ions in a barium surface conversion source.
Heeren, R. M. A., M. J. de Graaf, D. Ciric, H. J. Hopman, and A. W. Kleyn.
J.Appl.Phys. (1994) 75 4340-4351. [DOI]

Hydrogen and deuterium depth profiles in a barium surface converter determined by LAMS and P-SNMS.
Heeren, R. M. A., D. B. Meyler, D. Ciric, H. J. Hopman, and A. W. Kleyn.
Appl.Surf.Sci. (1993) 68 265-274. [DOI]

Investigation of the extracted H- current in a continuously pulsed-volume negative-ion source.
Heeren, R. M. A., K. N. Mellon, M. B. Hopkins, D. Ciric, and A. W. Kleyn.
Europhys.Lett. (1992) 11-13 503-508. [DOI]
Negative ion source technology.
Hopman, H. J. and R. M. A. Heeren.
Plasma Technology : Fundamentals and Applications. M. Capitelli and C. Gorse. New York, Plenum. (1992) 185-201. [DOI]

Energetic "self-extracted" H- ions in a Ba surface conversion source.
Heeren, R. M. A., M. J. de Graaf, D. Ciric, H. J. Hopman, and A. W. Kleyn.
Appl.Surf.Sci. (1992) 70/71 332-336. [DOI]

Sputtering of a hydrogenated barium surface in a negative ion surface conversion source.
Heeren, R. M. A., D. Ciric, S. Yagura, H. J. Hopman, and A. W. Kleyn.
Nucl.Instrum.Methods Phys.Res.B (1992) 69 389-402. [DOI]

Enhanced preferential sputtering of a hydrogenated barium surface.
Heeren, R. M. A., D. Ciric, H. J. Hopman, and A. W. Kleyn.
Appl.Phys.Lett. (1991) 59 158-160. [DOI]

Angular «selection rules» for the resonant population of O-(2P) and C-(4S) in grazing ion-surface collisions.
Van Pinxteren, H. M., C. F. A. van Os, R. M. A. Heeren, R. Rodink, J. J. C. Geerlings, and J. Los.
Europhys.Lett. (1989) 10 715-719. [DOI]

Dissociation and vibrational excitation of H2 molecules and wall influence on the densities in a multicusp ion source.
Eenshuistra, P. J., R. M. A. Heeren, A. W. Kleyn, and H. J. Hopman.
Physical Review A (1989) 40 3613-3625. [DOI]

Negative ion formation at a barium surface in contact with a hydrogen plasma.
van Os, C. F. A., R. M. A. Heeren, and P. W. van Amersfoort.
Appl.Phys.Lett. (1987) 51 1495-1497. [DOI]