Alexander A Makarov

List of Publications by Year
in descending order

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113 papers	13,563 citations	41323 49 h-index	32815 100 g-index
125 all docs	125 docs citations	125 times ranked	12732 citing authors

#	Article	IF	Citations
1	Parts per Million Mass Accuracy on an Orbitrap Mass Spectrometer via Lock Mass Injection into a C-trap. Molecular and Cellular Proteomics, 2005, 4, 2010-2021.	2.5	1,395
2	The Orbitrap: a new mass spectrometer. Journal of Mass Spectrometry, 2005, 40, 430-443.	0.7	1,091
3	Higher-energy C-trap dissociation for peptide modification analysis. Nature Methods, 2007, 4, 709-712.	9.0	844
4	Electrostatic Axially Harmonic Orbital Trapping:Â A High-Performance Technique of Mass Analysis. Analytical Chemistry, 2000, 72, 1156-1162.	3.2	754
5	Mass Spectrometry-based Proteomics Using Q Exactive, a High-performance Benchtop Quadrupole Orbitrap Mass Spectrometer. Molecular and Cellular Proteomics, 2011, 10, M111.011015.	2.5	701
6	Performance Evaluation of a Hybrid Linear Ion Trap/Orbitrap Mass Spectrometer. Analytical Chemistry, 2006, 78, 2113-2120.	3.2	663
7	Orbitrap Mass Spectrometry. Analytical Chemistry, 2013, 85, 5288-5296.	3.2	454
8	A Dual Pressure Linear Ion Trap Orbitrap Instrument with Very High Sequencing Speed. Molecular and Cellular Proteomics, 2009, 8, 2759-2769.	2.5	398
9	Dynamic range of mass accuracy in LTQ orbitrap hybrid mass spectrometer. Journal of the American Society for Mass Spectrometry, 2006, 17, 977-982.	1.2	358
10	High-sensitivity Orbitrap mass analysis of intact macromolecular assemblies. Nature Methods, 2012, 9, 1084-1086.	9.0	347
11	Evolution of Orbitrap Mass Spectrometry Instrumentation. Annual Review of Analytical Chemistry, 2015, 8, 61-80.	2.8	331
12	The 3D OrbiSIMSâ€"label-free metabolic imaging with subcellular lateral resolution and high mass-resolving power. Nature Methods, 2017, 14, 1175-1183.	9.0	327
13	Ultra High Resolution Linear Ion Trap Orbitrap Mass Spectrometer (Orbitrap Elite) Facilitates Top Down LC MS/MS and Versatile Peptide Fragmentation Modes. Molecular and Cellular Proteomics, 2012, 11, O111.013698.	2.5	303
14	The Q Exactive HF, a Benchtop Mass Spectrometer with a Pre-filter, High-performance Quadrupole and an Ultra-high-field Orbitrap Analyzer. Molecular and Cellular Proteomics, 2014, 13, 3698-3708.	2.5	285
15	A Compact Quadrupole-Orbitrap Mass Spectrometer with FAIMS Interface Improves Proteome Coverage in Short LC Gradients. Molecular and Cellular Proteomics, 2020, 19, 716-729.	2.5	284
16	Interfacing the Orbitrap Mass Analyzer to an Electrospray Ion Source. Analytical Chemistry, 2003, 75, 1699-1705.	3.2	268
17	Novel Parallelized Quadrupole/Linear Ion Trap/Orbitrap Tribrid Mass Spectrometer Improving Proteome Coverage and Peptide Identification Rates. Analytical Chemistry, 2013, 85, 11710-11714.	3.2	218
18	High-resolution mass spectrometry of small molecules bound to membrane proteins. Nature Methods, 2016, 13, 333-336.	9.0	205

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19	Coupling liquid chromatography to Orbitrap mass spectrometry. Journal of Chromatography A, 2010, 1217, 3938-3945.	1.8	187
20	Orbitrap Mass Analyzer â€“ Overview and Applications in Proteomics. Proteomics, 2006, 6, 16-21.	1.3	180
21	Fourier Transform Mass Spectrometry. Molecular and Cellular Proteomics, 2011, 10, M111.009431.	2.5	171
22	Dynamics of ions of intact proteins in the Orbitrap mass analyzer. Journal of the American Society for Mass Spectrometry, 2009, 20, 1486-1495.	1.2	161
23	From Protein Complexes to Subunit Backbone Fragments: A Multi-stage Approach to Native Mass Spectrometry. Analytical Chemistry, 2013, 85, 11163-11173.	3.2	148
24	Performance evaluation of a high-field orbitrap mass analyzer. Journal of the American Society for Mass Spectrometry, 2009, 20, 1391-1396.	1.2	147
25	High-fidelity mass analysis unveils heterogeneity in intact ribosomal particles. Nature Methods, 2017, 14, 283-286.	9.0	145
26	A Proteomics Grade Electron Transfer Dissociation-Enabled Hybrid Linear Ion Trap-Orbitrap Mass Spectrometer. Journal of Proteome Research, 2008, 7, 3127-3136.	1.8	137
27	Mass measurement and top-down HPLC/MS analysis of intact monoclonal antibodies on a hybrid linear quadrupole ion trap-orbitrap mass spectrometer. Journal of the American Society for Mass Spectrometry, 2009, 20, 1415-1424.	1.2	137
28	Analysis of Intact Monoclonal Antibody IgG1 by Electron Transfer Dissociation Orbitrap FTMS. Molecular and Cellular Proteomics, 2012, 11, 1758-1767.	2.5	137
29	Defining the Stoichiometry and Cargo Load of Viral and Bacterial Nanoparticles by Orbitrap Mass Spectrometry. Journal of the American Chemical Society, 2014, 136, 7295-7299.	6.6	134
30	Exploring an Orbitrap Analyzer for the Characterization of Intact Antibodies by Native Mass Spectrometry. Angewandte Chemie - International Edition, 2012, 51, 12992-12996.	7.2	130
31	Resolving heterogeneous macromolecular assemblies by Orbitrap-based single-particle charge detection mass spectrometry. Nature Methods, 2020, 17, 395-398.	9.0	121
32	Orbitrap mass spectrometry with resolving powers above 1,000,000. International Journal of Mass Spectrometry, 2012, 325-327, 80-85.	0.7	116
33	Multiplexed mass spectrometry of individual ions improves measurement of proteoforms and their complexes. Nature Methods, 2020, 17, 391-394.	9.0	110
34	Benchmarking Multiple Fragmentation Methods on an Orbitrap Fusion for Top-down Phospho-Proteoform Characterization. Analytical Chemistry, 2015, 87, 4152-4158.	3.2	99
35	Expanding the structural analysis capabilities on an Orbitrap-based mass spectrometer for large macromolecular complexes. Analyst, The, 2018, 143, 100-105.	1.7	89
36	Tandem Native Mass-Spectrometry on Antibodyâ€“Drug Conjugates and Submillion Da Antibodyâ€“Antigen Protein Assemblies on an Orbitrap EMR Equipped with a High-Mass Quadrupole Mass Selector. Analytical Chemistry, 2015, 87, 6095-6102.	3.2	78

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37	Mass spectrometry of stanozolol and its analogues using electrospray ionization and collision-induced dissociation with quadrupole-linear ion trap and linear ion trap-orbitrap hybrid mass analyzers. Rapid Communications in Mass Spectrometry, 2005, 19, 3369-3378.	0.7	73
38	Implementation of Ultraviolet Photodissociation on a Benchtop Q Exactive Mass Spectrometer and Its Application to Phosphoproteomics. Analytical Chemistry, 2016, 88, 2303-2310.	3.2	72
39	Dissecting ribosomal particles throughout the kingdoms of life using advanced hybrid mass spectrometry methods. Nature Communications, 2018, 9, 2493.	5.8	67
40	Enhanced Fourier transform for Orbitrap mass spectrometry. International Journal of Mass Spectrometry, 2014, 369, 16-22.	0.7	66
41	Analysis of molecular isotopic structures at high precision and accuracy by Orbitrap mass spectrometry. International Journal of Mass Spectrometry, 2017, 422, 126-142.	0.7	64
42	Discrimination of Leucine and Isoleucine in Peptides Sequencing with Orbitrap Fusion Mass Spectrometer. Analytical Chemistry, 2014, 86, 7017-7022.	3.2	61
43	Surface-Induced Dissociation of Noncovalent Protein Complexes in an Extended Mass Range Orbitrap Mass Spectrometer. Analytical Chemistry, 2019, 91, 3611-3618.	3.2	61
44	An informatic framework for decoding protein complexes by top-down mass spectrometry. Nature Methods, 2016, 13, 237-240.	9.0	59
45	Petroleomics via Orbitrap mass spectrometry with resolving power above 1â€‰000â€‰000 at m/z 200. RSC Advances, 2018, 8, 6183-6191.	1.7	58
46	Measurement of Individual Ions Sharply Increases the Resolution of Orbitrap Mass Spectra of Proteins. Analytical Chemistry, 2019, 91, 2776-2783.	3.2	57
47	Advancing Cell Biology Through Proteomics in Space and Time (PROSPECTS). Molecular and Cellular Proteomics, 2012, 11, O112.017731.	2.5	55
48	Sequencing Grade Tandem Mass Spectrometry for Topâ€“Down Proteomics Using Hybrid Electron Capture Dissociation Methods in a Benchtop Orbitrap Mass Spectrometer. Analytical Chemistry, 2018, 90, 10819-10827.	3.2	54
49	Triple-Stage Mass Spectrometry Unravels the Heterogeneity of an Endogenous Protein Complex. Analytical Chemistry, 2017, 89, 4708-4715.	3.2	52
50	Orbitrap mass analyser for in situ characterisation of planetary environments: Performance evaluation of a laboratory prototype. Planetary and Space Science, 2016, 131, 33-45.	0.9	47
51	Top-down analysis of immunoglobulin G isotypes 1 and 2 with electron transfer dissociation on a high-field Orbitrap mass spectrometer. Journal of Proteomics, 2017, 159, 67-76.	1.2	47
52	Advances in bioanalytical LCâ€“MS using the Orbitrapâ„¢ mass analyzer. Bioanalysis, 2009, 1, 741-754.	0.6	46
53	STORI Plots Enable Accurate Tracking of Individual Ion Signals. Journal of the American Society for Mass Spectrometry, 2019, 30, 2200-2203.	1.2	44
54	Engineering Nanodisc Scaffold Proteins for Native Mass Spectrometry. Analytical Chemistry, 2017, 89, 11189-11192.	3.2	43

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55	Symmetry of Charge Partitioning in Collisional and UV Photon-Induced Dissociation of Protein Assemblies. Journal of the American Chemical Society, 2016, 138, 10860-10868.	6.6	42
56	Ion traps in modern mass spectrometry. Mass Spectrometry Reviews, 2019, 38, 150-168.	2.8	41
57	Phase-Constrained Spectrum Deconvolution for Fourier Transform Mass Spectrometry. Analytical Chemistry, 2017, 89, 1202-1211.	3.2	38
58	An Orbitrapâ€based laser desorption/ablation mass spectrometer designed for spaceflight. Rapid Communications in Mass Spectrometry, 2018, 32, 1875-1886.	0.7	36
59	Colors for Molecular Masses: Fusion of Spectroscopy and Mass Spectrometry for Identification of Biomolecules. Analytical Chemistry, 2015, 87, 4607-4611.	3.2	34
60	Tandem time-of-flight mass spectrometer (TOF-TOF) with a quadratic-field ion mirror. Review of Scientific Instruments, 2002, 73, 2115-2123.	0.6	30
61	Determination of Collision Cross-Sections of Protein Ions in an Orbitrap Mass Analyzer. Analytical Chemistry, 2018, 90, 5896-5902.	3.2	30
62	Limits for Resolving Isobaric Tandem Mass Tag Reporter Ions Using Phase-Constrained Spectrum Deconvolution. Journal of Proteome Research, 2018, 17, 4008-4016.	1.8	29
63	Using Orbitrap mass spectrometry to assess the isotopic compositions of individual compounds in mixtures. International Journal of Mass Spectrometry, 2020, 457, 116410.	0.7	29
64	Exploring frontiers of orbitrap performance for long transients. International Journal of Mass Spectrometry, 2021, 466, 116607.	0.7	29
65	Ultrafast gas chromatography using time-of-flight mass spectrometry. Rapid Communications in Mass Spectrometry, 1999, 13, 237-241.	0.7	26
66	In-series combination of a magnetic-sector mass spectrometer with a time-of-flight quadratic-field ion mirror. Review of Scientific Instruments, 1998, 69, 1650-1660.	0.6	25
67	Resonant ac Dipolar Excitation for Ion Motion Control in the Orbitrap Mass Analyzer. Journal of Physical Chemistry A, 2006, 110, 2682-2689.	1.1	25
68	Design Study of an Atmospheric Pressure Photoionization Interface for GC-MS. Journal of the American Society for Mass Spectrometry, 2016, 27, 607-614.	1.2	25
69	Fragmentation of Positively-Charged Biological Ions Activated with a Beam of High-Energy Cations. Analytical Chemistry, 2014, 86, 372-379.	3.2	24
70	Frequency chasing of individual megadalton ions in an Orbitrap analyser improves precision of analysis in single-molecule mass spectrometry. Nature Chemistry, 2022, 14, 515-522.	6.6	24
71	Pitfalls on the road to the ideal time-of-flight mirror: ideal time-focusing in the second stage of tandem mass spectrometers. International Journal of Mass Spectrometry and Ion Processes, 1995, 146-147, 165-182.	1.9	22
72	Orbitrap journey: taming the ion rings. Nature Communications, 2019, 10, 3743.	5.8	19

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73	Spontaneous decay in a system of two spatially separated atoms (One-dimensional case). Journal of Experimental and Theoretical Physics, 2003, 97, 688-701.	0.2	18
74	Identification of organic molecules with a laboratory prototype based on the Laser Ablation-CosmOrbitrap. Planetary and Space Science, 2019, 170, 42-51.	0.9	18
75	Nonstatistical UV Fragmentation of Gas-Phase Peptides Reveals Conformers and Their Structural Features. Journal of Physical Chemistry Letters, 2016, 7, 1067-1071.	2.1	17
76	High-Resolution Differential Ion Mobility Separations/Orbitrap Mass Spectrometry without Buffer Gas Limitations. Analytical Chemistry, 2019, 91, 6918-6925.	3.2	17
77	LASER IONIZATION MASS SPECTROMETRY AT 55: QUO VADIS?. Mass Spectrometry Reviews, 2022, 41, 100-151.	2.8	16
78	Identification of Isomeric Ephedrines by Cold Ion UV Spectroscopy: Toward Practical Implementation. Analytical Chemistry, 2017, 89, 544-547.	3.2	15
79	Equilibrium ion distribution modeling in RF ion traps and guides with regard to Coulomb effects. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 645, 141-145.	0.7	14
80	Coulomb dynamics of ion bunches in multi-reflection electrostatic traps. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 645, 146-152.	0.7	14
81	Supersonic molecular beam-hyperthermal surface ionisation coupled with time-of-flight mass spectrometry applied to trace level detection of polynuclear aromatic hydrocarbons in drinking water for reduced sample preparation and analysis time. , 1999, 13, 247-250.		13
82	Space-Charge Effects in An Electrostatic Multireflection Ion Trap. European Journal of Mass Spectrometry, 2014, 20, 131-142.	0.5	13
83	Space-charge dynamics in Orbitrap mass spectrometers. International Journal of Modern Physics A, 2019, 34, 1942007.	0.5	12
84	Methods and limitations of stable isotope measurements via direct elution of chromatographic peaks using gas chromotography-Orbitrap mass spectrometry. International Journal of Mass Spectrometry, 2022, 477, 116848.	0.7	12
85	Real-time observation of the dynamics of vibrational-energy redistribution within an isolated polyatomic molecule by spontaneous raman spectroscopy. JETP Letters, 2004, 80, 532-534.	0.4	11
86	Determination of rhenium and osmium complexes by surface-assisted laser desorption/ionization coupled to Orbitrap mass analyzer. Analytical and Bioanalytical Chemistry, 2014, 406, 3019-3023.	1.9	11
87	Ideal and quasi-ideal time focusing of charged particles. Journal Physics D: Applied Physics, 1991, 24, 533-540.	1.3	10
88	Orbitrap Mass Spectrometry. Comprehensive Analytical Chemistry, 2016, , 3-18.	0.7	10
89	CORALS: A Laser Desorption/Ablation Orbitrap Mass Spectrometer for In Situ Exploration of Europa. , 2021, , .		10
90	Vacuum Laser Photoionization inside the C-trap of an Orbitrap Mass Spectrometer: Resonance-Enhanced Multiphoton Ionization High-Resolution Mass Spectrometry. Analytical Chemistry, 2021, 93, 9418-9427.	3.2	10

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91	Fundamentals of Orbitrap analyzer. , 2019, , 37-61.		9
92	Abnormal (Hydroxy)proline Deuterium Content Redefines Hydrogen Chemical Mass. Journal of the American Chemical Society, 2022, 144, 2484-2487.	6.6	9
93	Theory and Practice of the Orbitrap Mass Analyzer. , 2010, , 251-272.		8
94	Ultraviolet Photodissociation Induced by Lightâ€Emitting Diodes in a Planar Ion Trap. Angewandte Chemie - International Edition, 2016, 55, 12417-12421.	7.2	7
95	Time-of-flight mass reflection with a large area of ion collection. International Journal of Mass Spectrometry and Ion Processes, 1993, 127, 45-55.	1.9	5
96	Reprint of â€œEnhanced Fourier transform for Orbitrap mass spectrometryâ€• International Journal of Mass Spectrometry, 2015, 377, 338-344.	0.7	5
97	Numerical simulation of ion transport in an atmosphere-to-vacuum interface taking into account gas dynamics and space charge. European Journal of Mass Spectrometry, 2017, 23, 187-191.	0.5	5
98	Control of Aberration and Space-Charge Effects in the Orbitrap Mass Analyzer. Microscopy and Microanalysis, 2015, 21, 176-181.	0.2	4
99	Ultraviolet Photodissociation Induced by Lightâ€Emitting Diodes in a Planar Ion Trap. Angewandte Chemie, 2016, 128, 12605-12609.	1.6	4
100	Orbitrap mass analyzer. , 2006, , .		3
101	The Orbitrap mass analyzer with direct ion injection interfaced to a laser desorption/ionization ion source. Journal of Analytical Chemistry, 2013, 68, 1165-1169.	0.4	3
102	<title>Metastable entangled states of atomic systems in macroscale: radiation dynamics and spectrum</title>. , 2004, , .		2
103	Intact Antibody Characterization Using Orbitrap Mass Spectrometry. ACS Symposium Series, 2015, , 289-315.	0.5	2
104	Overtone spectroscopy of ν(C=O) stretching vibration of hexafluoroacetone: Experimental and ab initio determination of peak positions, absolute intensities, and band shapes. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 2020, 238, 118396.	2.0	2
105	Integrable Models of Quantum Optics. Bulletin of the Russian Academy of Sciences: Physics, 2018, 82, 1556-1559.	0.1	1
106	New Feedthrough Insulator of the Compact Tandem-Accelerator with Vacuum Insulation. , 2018, , .		1
107	Application of secondary structures prepared on the base of track membrane technique for scanning tunneling microscopy. Radiation Measurements, 1995, 25, 699-702.	0.7	0
108	The application of nuclear track membranes for ion sampling to mass-spectrometer. Radiation Measurements, 1995, 25, 741-742.	0.7	0

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109	Alexander A. Makarov. , 2015, , 138.		0
110	2016 ASMS Workshop Review: Next Generation LC/MS: Critical Insights and Future Perspectives. Journal of the American Society for Mass Spectrometry, 2017, 28, 1248-1249.	1.2	0
111	Effects of quantum interference in spectra of cascade spontaneous emission from multilevel systems. EPJ Web of Conferences, 2017, 132, 02014.	0.1	0
112	Spectroscopy of systems of two identical atoms: effects of quantum interference. EPJ Web of Conferences, 2017, 132, 02023.	0.1	0
113	Integrable models of quantum optics. EPJ Web of Conferences, 2017, 161, 01013.	0.1	0