Klaus Wittmaack

List of Publications by Citations

116 papers	3,416 citations	32 h-index	54 g-index
119 ext. papers	3,556 ext. citations	4.4 avg, IF	5.66 L-index

#	Paper	IF	Citations
116	In search of the most relevant parameter for quantifying lung inflammatory response to nanoparticle exposure: particle number, surface area, or what?. *Environmental Health Perspectives*, **2007**, 115, 187-94	8.4	213
115	Model calculation of ion collection in the presence of sputtering. *Radiation Effects*, **1976**, 29, 31-40		172
114	Beam-induced broadening effects in sputter depth profiling. *Vacuum*, **1984**, 34, 119-137	3.7	150
113	Oxygen-concentration dependence of secondary ion yield enhancement. *Surface Science*, **1981**, 112, 168-180	1.8	130
112	Elemental composition and sources of fine and ultrafine ambient particles in Erfurt, Germany. *Science of the Total Environment*, **2003**, 305, 143-56	10.2	115
111	Secondary ion mass spectrometry as a means of surface analysis. *Surface Science*, **1979**, 89, 668-700	1.8	104
110	An AES-SIMS study of silicon oxidation induced by ion or electron bombardment. *Applications of Surface Science*, **1980**, 5, 221-242		90
109	Secondary ion emission from silicon and silicon oxide. *Surface Science*, **1975**, 47, 358-369	1.8	85
108	Energy dependence of the secondary ion yield of metals and semiconductors. *Surface Science*, **1975** , 53, 626-635	1.8	84
107	Aspects of quantitative secondary ion mass spectrometry. *Nuclear Instruments & Methods*, **1980**, 168, 343-356		77
106	Design and performance of quadrupole-based SIMS instruments: a critical review. *Vacuum*, **1982**, 32, 65-89	3.7	77
105	On the mechanism of cluster emission in sputtering. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1979**, 69, 322-325	2.3	75
104	Raster scanning depth profiling of layer structures. *Applied Physics Berlin*, **1977**, 12, 149-156		74
103	An overview on bioaerosols viewed by scanning electron microscopy. *Science of the Total Environment*, **2005**, 346, 244-55	10.2	71
102	Characteristics of ion-excited silicon L-shell Auger spectra. *Surface Science*, **1979**, 85, 69-76	1.8	71
101	Dynamic range of 106 in depth profiling using secondary-ion mass spectrometry. *Applied Physics Letters*, **1980**, 37, 285-287	3.4	66
100	Analytical description of the sputtering yields of silicon bombarded with normally incident ions. *Physical Review B*, **2003**, 68,	3.3	59

99	Primary-ion charge compensation in SIMS analysis of insulators. *Journal of Applied Physics*, **1979**, 50, 493-497	2.5	59
98	Secondary-ion emission from silicon bombarded with atomic and molecular noble-gas ions. *Surface Science*, **1979**, 90, 557-563	1.8	56
97	Reliability of a popular simulation code for predicting sputtering yields of solids and ranges of low-energy ions. *Journal of Applied Physics*, **2004**, 96, 2632-2637	2.5	53
96	High-sensitivity depth profiling of arsenic and phosphorus in silicon by means of SIMS. *Applied Physics Letters*, **1976**, 29, 552-554	3.4	50
95	The use of secondary ion mass spectrometry for studies of oxygen adsorption and oxidation. *Surface Science*, **1977**, 68, 118-129	1.8	50
94	Ion-induced electron emission as a means of studying energy- and angle-dependent compositional changes of solids bombarded with reactive ions. *Surface Science*, **1999**, 419, 249-264	1.8	47
93	Excessive delivery of nanostructured matter to submersed cells caused by rapid gravitational settling. *ACS Nano*, **2011**, 5, 3766-78	16.7	46
92	Unravelling the secrets of Cs controlled secondary ion formation: Evidence of the dominance of site specific surface chemistry, alloying and ionic bonding. *Surface Science Reports*, **2013**, 68, 108-230	12.9	44
91	Time-of-flight secondary ion mass spectrometry of matrix-diluted oligo- and polypeptides bombarded with slow and fast projectiles: positive and negative matrix and analyte ion yields, background signals, and sample aging. *Journal of the American Society for Mass Spectrometry*, **2000**, 11, 553-63	3.5	43
90	Unexpectedly high energy photoluminescence of highly Si doped GaAs grown by MOVPE. *Journal of Crystal Growth*, **1982**, 57, 318-324	1.6	41
89	Secondary ion yield variations due to cesium implantation in silicon. *Surface Science*, **1983**, 126, 573-580	1.8	40
88	Comparison of ion-excited Auger electron emission and secondary ion emission from silicon bombarded with noble gas ions. *Nuclear Instruments & Methods*, **1980**, 170, 565-569		40
87	Implications in the use of reactive ion bombardment for secondary ion yield enhancement. *Applications of Surface Science*, **1981**, 9, 315-334		40
86	Effect of filter type and temperature on volatilisation losses from ammonium salts in aerosol matter. *Atmospheric Environment*, **2005**, 39, 4093-4100	5.3	38
85	Depth profiling by means of sims: Recent progress and current problems. *Radiation Effects*, **1982**, 63, 205-218		38
84	Pre-equilibrium variation of the secondary ion yield. *International Journal of Mass Spectrometry and Ion Physics*, **1975**, 17, 39-50		32
83	Successful operation of a scanning ion microscope with quadrupole mass filter. *Review of Scientific Instruments*, **1976**, 47, 157	1.7	32
82	Diatomic versus atomic secondary ion emission. *Applied Physics Letters*, **1975**, 27, 318-320	3.4	31

81	Mass resolved low-energy ion backscattering spectrometry at target-to-projectile mass ratios near unity. *Surface Science*, **1996**, 345, 110-124	1.8	30
80	Ionization Mechanism of H+ Sputtered from Hydrogenated Silicon. *Physical Review Letters*, **1979**, 43, 872-875	7.4	29
79	Novel dose metric for apparent cytotoxicity effects generated by in vitro cell exposure to silica nanoparticles. *Chemical Research in Toxicology*, **2011**, 24, 150-8	4	28
78	Comment on A unified explanation for secondary-ion yields and mechanism of the SIMS matrix effect *Journal of Applied Physics*, **1981**, 52, 527-529	2.5	28
77	Current density effects in secondary ion emission studies. *Nuclear Instruments & Methods*, **1976**, 132, 381-385		28
76	Brochosomes produced by leafhoppers-a widely unknown, yet highly abundant species of bioaerosols in ambient air. *Atmospheric Environment*, **2005**, 39, 1173-1180	5.3	25
75	Energy- and angle-resolved depth of origin of isotopes sputtered from an elemental target. *Physical Review B*, **1997**, 56, R5701-R5704	3.3	24
74	Advanced evaluation of size-differential distributions of aerosol particles. *Journal of Aerosol Science* , **2002**, 33, 1009-1025	4.3	24
73	System for combined SIMS-AES-XPS studies of solids. *Review of Scientific Instruments*, **1980**, 51, 695-704	1.7	24
72	The infinite velocity method a means of concentration calibration in secondary ion mass spectrometry?. *Surface Science*, **1999**, 429, 84-101	1.8	23
71	Exceptionally pronounced redistribution of silver in oxygen bombarded silicon. *Applied Physics Letters*, **1987**, 50, 815-817	3.4	23
70	Misconceptions impairing the validity of the stopping power tables in the SRIM library and suggestions for doing better in the future. *Nuclear Instruments & Methods in Physics Research B*, **2016**, 380, 57-70	1.2	22
69	Mechanism of MCs+ formation in Cs based secondary ion mass spectrometry. *Surface Science*, **2012**, 606, L18-L21	1.8	22
68	TOF-SIMS characterisation of spark-generated nanoparticles made from pairs of Ir and Ir electrodes. *International Journal of Mass Spectrometry*, **2006**, 254, 70-84	1.9	22
67	Surface and depth analysis based on sputtering. *Topics in Applied Physics*, **1991**, 161-256	0.5	22
66	Improved secondary-ion extraction in a quadrupole-based ion microprobe. *International Journal of Mass Spectrometry and Ion Physics*, **1982**, 43, 31-39		22
65	Depth resolution in sputter profiling: Evidence against the sequential layer sputtering model. *Thin Solid Films*, **1978**, 52, 259-270	2.2	22
64	Determination of implantation profiles in solids by secondary ion mass spectrometry. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1972**, 41, 177-178	2.3	22

63	secondary ion production due to ion-surface bombardment **1977**, 153-199		20
62	Thermodesorption of aerosol matter on multiple filters of different materials for a more detailed evaluation of sampling artifacts. *Atmospheric Environment*, **2004**, 38, 5205-5215	5.3	19
61	Angular dependence of silicon oxide formation and gold segregation due to low-energy O2+ implantation. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **1992**, 12, 91-95	3.1	18
60	Projectile-energy dependence and line shape of Ar?L Auger spectra from argon bombarded silicon. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1979**, 74, 197-200	2.3	18
59	Production of molecular noble gas ions in a hot cathode ion source. *Journal of Vacuum Science and Technology*, **1979**, 16, 1027-1032		18
58	Abrupt reduction of the partial sputtering yield of copper in silicon due to beam induced oxidation and segregation. *Applied Physics Letters*, **1986**, 48, 1400-1402	3.4	17
57	Effect of water treatment on analyte and matrix ion yields in matrix-assisted time-of-flight secondary ion mass spectrometry: the case of insulin in and on hydroxycinnamic acid. *Rapid Communications in Mass Spectrometry*, **2002**, 16, 2025-33	2.2	14
56	Laboratory studies on the retention of nitric acid, hydrochloric acid and ammonia on aerosol filters. *Atmospheric Environment*, **2005**, 39, 2157-2162	5.3	14
55	Quantitative analysis of nitrogen in oxynitrides on silicon by MCs+ secondary ion mass spectrometry?. *Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena*, **2002**, 20, 441		14
54	Ion-induced electron emission as a means of studying energy- and angle-dependent compositional changes of solids bombarded with reactive ions. *Surface Science*, **1999**, 424, 299-310	1.8	14
53	Correlation between the O+2 induced electron emission coefficient and the removal rate of Cu impurities segregated at the SiO2/Si interface. *Applied Physics Letters*, **1991**, 58, 2138-2140	3.4	13
52	Quantitative characterization of xenon bubbles in silicon: Correlation of bubble size with the damage generated during implantation. *Nuclear Instruments & Methods in Physics Research B*, **2011**, 269, 380-385	1.2	12
51	Effect of matrix composition and impact angle on the fractional ion yield of Be+ sputtered from oxygen-bombarded silicon and compound semiconductors. *Journal of Applied Physics*, **1989**, 65, 5061-5067	2.5	12
50	Significantly extended analytical potential of Rutherford backscattering spectrometry by in situ combination with low-energy sputtering. *Applied Physics Letters*, **1988**, 53, 1708-1710	3.4	12
49	Beam formation in a triode ion gun. *Nuclear Instruments & Methods*, **1974**, 118, 99-113		12
48	Analysis of Defect Annealing in Monocrystalline Gold Foils after Gold Ion Irradiation. *Physica Status Solidi (B): Basic Research*, **1970**, 37, 633-645	1.3	12
47	Depth of origin of sputtered atoms: Exploring the dependence on relevant target properties to identify the correlation with low-energy ranges. *Nuclear Instruments & Methods in Physics Research B*, **2012**, 281, 37-44	1.2	11
46	The big ban on bituminous coal sales revisited: serious epidemics and pronounced trends feign excess mortality previously attributed to heavy black-smoke exposure. *Inhalation Toxicology*, **2007**, 19, 343-50	2.7	11

45	Combustion characteristics of water-insoluble elemental and organic carbon in size selected ambient aerosol particles. *Atmospheric Chemistry and Physics*, **2005**, 5, 1905-1913	6.8	11
44	Rapid-relocation model for describing high-fluence retention of rare gases implanted in solids. *Nuclear Instruments & Methods in Physics Research B*, **2009**, 267, 2846-2857	1.2	10
43	Novel approach to identifying supersaturated metastable ambient aerosol particles. *Environmental Science & Technology*, **2005**, 39, 8177-84	10.3	10
42	Small-area depth profiling in a quadrupole based SIMS instrument. *International Journal of Mass Spectrometry and Ion Processes*, **1995**, 143, 19-27		10
41	Stable isotopes for determining biokinetic parameters of tellurium in rabbits. *Analytical Chemistry*, **1991**, 63, 2603-7	7.8	10
40	Mechanisms responsible for inducing and balancing the presence of Cs adatoms in dynamic Cs based SIMS. *International Journal of Mass Spectrometry*, **2012**, 313, 68-72	1.9	9
39	Dose and Response Metrics in Nanotoxicology: Wittmaack Responds to Oberdoerster et al. and Stoeger et al.. *Environmental Health Perspectives*, **2007**, 115,	8.4	9
38	Influence of Source Parameters on the Properties of an Ion Beam. *Journal of Vacuum Science and Technology*, **1973**, 10, 918-921		9
37	Novel model of negative secondary ion formation and its use to refine the electronegativity of almost fifty elements. *Analytical Chemistry*, **2014**, 86, 5962-8	7.8	8
36	In situ observation of gas reemission and blister rupture during helium implantation in silicon. *Applied Physics Letters*, **2008**, 92, 051907	3.4	7
35	SIMS analysis of xenon and krypton in uranium dioxide: A comparison of two models of gas-phase ionisation. *Nuclear Instruments & Methods in Physics Research B*, **2008**, 266, 5151-5158	1.2	7
34	Gas-phase ionisation of sputtered rare gas atoms. *International Journal of Mass Spectrometry*, **2008**, 269, 24-33	1.9	7
33	Characterization of carbon nanoparticles in ambient aerosols by scanning electron microscopy and model calculations. *Journal of the Air and Waste Management Association*, **2004**, 54, 1091-8	2.4	7
32	Dose calibration for through-oxide doping distributions from time-dependent secondary-ion-mass-spectrometry depth profiles with only one sensitivity factor. *Applied Physics Letters*, **1999**, 74, 3969-3971	3.4	6
31	Ion-and electron-excited residual-gas analysis using a SIMS instrument. *International Journal of Mass Spectrometry and Ion Physics*, **1982**, 42, 43-50		6
30	Profiles of the optical absorption constant and interface composition in epitaxial silicon films. *Thin Solid Films*, **1976**, 37, 317-321	2.2	6
29	Accurate in situ calibration of the energy bandwidth and the zero-energy offset in SIMS analysis using magnetic sector field instruments. *International Journal of Mass Spectrometry*, **2011**, 300, 65-69	1.9	5
28	Deriving the mean primary-particle diameter and related quantities from the size distribution and the gravimetric mass of spark generated nanoparticles. *Journal of Nanoparticle Research*, **2007**, 9, 191-200	2.3	5

27	Concept and validation of a novel approach for producing large batches of reference material of ambient aerosols on filters. *Analytical and Bioanalytical Chemistry*, **2005**, 381, 702-12	4.4	5
26	Time-of-Flight Effects in Quadrupole-Based Scanning Ion Microprobes. *Scanning*, **1980**, 3, 133-138	1.6	5
25	Annealing of boron-implanted silicon using a CW CO2 Laser. *Physica Status Solidi A*, **1981**, 63, 547-555		5
24	On the origin of apparent Z1-oscillations in low-energy heavy-ion ranges. *Nuclear Instruments & Methods in Physics Research B*, **2016**, 388, 15-22	1.2	4
23	Simplified approach to measuring semivolatile inorganic particulate matter using a denuded cellulose filter without backup filters. *Atmospheric Environment*, **2006**, 40, 7106-7114	5.3	4
22	Penalties plus high-quality review to fight plagiarism. *Nature*, **2005**, 436, 24	50.4	4
21	Non-Gaussian range profiles in amorphous solids. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1973**, 43, 477-478	2.3	4
20	Highly accurate nuclear and electronic stopping cross sections derived using Monte Carlo simulations to reproduce measured range data. *Journal of Applied Physics*, **2017**, 121, 105104	2.5	3
19	Attenuation length in ion-induced kinetic electron emission: A key to an understanding of angular-dependent yields. *Physical Review B*, **2015**, 91,	3.3	3
18	Comprehensive modelling of secondary-ion energy spectra measured with a magnetic sector field instrument: I. Concept and basic features. *International Journal of Mass Spectrometry*, **2014**, 359, 55-63	1.9	3
17	Secondary ion emission from polymer layers by atomic and molecular ion bombardment: Data evaluation based on linear-cascade sputtering theory. *Applied Surface Science*, **2006**, 252, 6413-6418	6.7	3
16	Charge compensation in SIMS analysis of polymer foils using negative secondary ions. *Surface and Interface Analysis*, **1987**, 10, 311-315	1.5	3
15	Towards a realistic description of the contribution of primary and secondary aerosols to ambient particle number and mass distributions. *Journal of Aerosol Science*, **2004**, 35, 611-620	4.3	2
14	Reply to the Comment on The Infinite velocity methoda means of concentration calibration in secondary ion mass spectrometry?[Surf. Sci. 429 (1999) 84]. *Surface Science*, **2000**, 453, L332-L335	1.8	2
13	Influence of alloying on the electron momentum density in the Cu-Ni system. *Physical Review B*, **1999**, 60, 14049-14056	3.3	2
12	Peak position and width of the energy distribution of ion beams extracted from a plasma source. *Review of Scientific Instruments*, **1992**, 63, 2765-2767	1.7	2
11	Order-of-magnitude differences in retention of low-energy Ar implanted in Si and SiO2. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2016**, 34, 051404	2.9	2
10	Characterisation of Fulvic Acids and Glycyrrhizic Acid by Time-of-Flight Secondary Ion Mass Spectrometry. *Clean - Soil, Air, Water*, **2001**, 28, 350-358		2

9	Comprehensive modelling of secondary-ion energy spectra measured with a magnetic sector field instrument: II. Evaluation of experimental data. *International Journal of Mass Spectrometry*, **2014**, 358, 49-58	1.9	1
8	Neutralization phenomena observed with secondary ions originating from inner-shell excitation. *Surface and Interface Analysis*, **2011**, 43, 141-145	1.5	1
7	Miniature parallel-plate denuder for the collection of inorganic trace gases and their removal from aerosol-laden air. *Journal of Aerosol Science*, **2006**, 37, 1165-1173	4.3	1
6	Characterisation of Fulvic Acids and Glycyrrhizic Acid by Time-of-Flight Secondary Ion Mass Spectrometry. *Clean - Soil, Air, Water*, **2001**, 28, 350-358		1
5	Production of ions of the opposite charge in mass analysis using a quadrupole filter. *International Journal of Mass Spectrometry and Ion Processes*, **1986**, 69, 197-209		1
4	ASPECTS OF QUANTITATIVE SECONDARY ION MASS SPECTROMETRY **1980**, 343-356		1
3	Workforce: the joys of research in retirement. *Nature*, **2015**, 522, 156	50.4	
2	Reply to the Letter to the Editor Regarding My Article on Dose Metrics in Nanotoxicity Studies (Wittmaack, 2011). *Chemical Research in Toxicology*, **2012**, 25, 7-10	4	
1	Stage III annealing in monocrystalline gold films after 30 keV-gold ion irradiation. *Physics Letters, Section A: General, Atomic and Solid State Physics*, **1969**, 29, 436-437	2.3	