Anja Geitmann

List of Publications by Year
in descending order

128 papers	6,222 citations	50276 46 h-index	76900 74 g-index
133 all docs	133 docs citations	133 times ranked	4510 citing authors

#	Article	IF	Citations
1	Mechanics and modeling of plant cell growth. Trends in Plant Science, 2009, 14, 467-478.	8.8	264
2	Pectin and the role of the physical properties of the cell wall in pollen tube growth of Solanum chacoense. Planta, 2005, 220, 582-592.	3.2	252
3	The Cell Wall of the Arabidopsis Pollen Tubeâ€"Spatial Distribution, Recycling, and Network Formation of Polysaccharides Â Â Â. Plant Physiology, 2012, 160, 1940-1955.	4.8	227
4	Relating the mechanics of the primary plant cell wall to morphogenesis. Journal of Experimental Botany, 2016, 67, 449-461.	4.8	204
5	Finite Element Model of Polar Growth in Pollen Tubes Â. Plant Cell, 2010, 22, 2579-2593.	6.6	184
6	The cytoskeleton in plant and fungal cell tip growth. Journal of Microscopy, 2000, 198, 218-245.	1.8	175
7	The role of pectin in plant morphogenesis. BioSystems, 2012, 109, 397-402.	2.0	171
8	Magnitude and Direction of Vesicle Dynamics in Growing Pollen Tubes Using Spatiotemporal Image Correlation Spectroscopy and Fluorescence Recovery after Photobleaching Â Â. Plant Physiology, 2008, 147, 1646-1658.	4.8	167
9	More Than a Leak Sealant. The Mechanical Properties of Callose in Pollen Tubes. Plant Physiology, 2005, 137, 274-286.	4.8	165
10	Polar growth in pollen tubes is associated with spatially confined dynamic changes in cell mechanical properties. Developmental Biology, 2009, 334, 437-446.	2.0	148
11	Alterations in the Actin Cytoskeleton of Pollen Tubes Are Induced by the Self-Incompatibility Reaction in Papaver rhoeas. Plant Cell, 2000, 12, 1239-1251.	6.6	146
12	Regulator or Driving Force? The Role of Turgor Pressure in Oscillatory Plant Cell Growth. PLoS ONE, 2011, 6, e18549.	2.5	127
13	Live imaging of calcium spikes during double fertilization in Arabidopsis. Nature Communications, 2014, 5, 4722.	12.8	125
14	Cellular growth in plants requires regulation of cell wall biochemistry. Current Opinion in Cell Biology, 2017, 44, 28-35.	5.4	121
15	Copper toxicity in expanding leaves of Phaseolus vulgaris L.: antioxidant enzyme response and nutrient element uptake. Ecotoxicology and Environmental Safety, 2010, 73, 1304-1308.	6.0	119
16	Under pressure, cell walls set the pace. Trends in Plant Science, 2010, 15, 363-369.	8.8	106
17	Immunogold localization of arabinogalactan proteins, unesterified and esterified pectins in pollen grains and pollen tubes ofNicotiana tabacum L.. Protoplasma, 1995, 189, 26-36.	2.1	103
18	Mechanical Stress Initiates and Sustains the Morphogenesis of Wavy Leaf Epidermal Cells. Cell Reports, 2019, 28, 1237-1250.e6.	6.4	93

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19	Actin is Involved in Pollen Tube Tropism Through Redefining the Spatial Targeting of Secretory Vesicles. Traffic, 2011, 12, 1537-1551.	2.7	92
20	Pectin Chemistry and Cellulose Crystallinity Govern Pavement Cell Morphogenesis in a Multi-Step Mechanism. Plant Physiology, 2019, 181, 127-141.	4.8	90
21	Model for calcium dependent oscillatory growth in pollen tubes. Journal of Theoretical Biology, 2008, 253, 363-374.	1.7	86
22	The middle lamellaâ€"more than a glue. Physical Biology, 2017, 14, 015004.	1.8	85
23	Quantification of cellular penetrative forces using lab-on-a-chip technology and finite element modeling. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 8093-8098.	7.1	84
24	Microfilament Orientation Constrains Vesicle Flow and Spatial Distribution in Growing Pollen Tubes. Biophysical Journal, 2009, 97, 1822-1831.	0.5	82
25	The local cytomechanical properties of growing pollen tubes correspond to the axial distribution of structural cellular elements. Sexual Plant Reproduction, 2004, 17, 9-16.	2.2	80
26	Experimental approaches used to quantify physical parameters at cellular and subcellular levels. American Journal of Botany, 2006, 93, 1380-1390.	1.7	80
27	<scp>T</scp>ip<scp>C</scp>hip: a modular, <scp>MEMS</scp>â€based platform for experimentation and phenotyping of tipâ€growing cells. Plant Journal, 2013, 73, 1057-1068.	5.7	80
28	Transport Logistics in Pollen Tubes. Molecular Plant, 2013, 6, 1037-1052.	8.3	80
29	Reactive oxygen species are involved in pollen tube initiation in kiwifruit. Plant Biology, 2012, 14, 64-76.	3.8	79
30	Pollen tube growth: coping with mechanical obstacles involves the cytoskeleton. Planta, 2007, 226, 405-416.	3.2	73
31	A mechanosensitive Ca2+ channel activity is dependent on the developmental regulator DEK1. Nature Communications, 2017, 8, 1009.	12.8	70
32	Quantification of the Young's modulus of the primary plant cell wall using Bending-Lab-On-Chip (BLOC). Lab on A Chip, 2013, 13, 2599.	6.0	69
33	A specific role for Arabidopsis TRAPPII in postâ€Golgi trafficking that is crucial for cytokinesis and cell polarity. Plant Journal, 2011, 68, 234-248.	5.7	68
34	Morphogenesis of complex plant cell shapes: the mechanical role of crystalline cellulose in growing pollen tubes. Sexual Plant Reproduction, 2010, 23, 15-27.	2.2	66
35	Ca2+ channels control the rapid expansions in pulsating growth of Petunia hybrida pollen tubes. Journal of Plant Physiology, 1998, 152, 439-447.	3.5	65
36	Pollen tubes and the physical world. Trends in Plant Science, 2011, 16, 353-355.	8.8	65

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37	The cellular mechanics of an invasive lifestyle. Journal of Experimental Botany, 2013, 64, 4709-4728.	4.8	65
38	Finite Element Modeling of Shape Changes in Plant Cells. Plant Physiology, 2018, 176, 41-56.	4.8	65
39	How to shape a cylinder: pollen tube as a model system for the generation of complex cellular geometry. Sexual Plant Reproduction, 2010, 23, 63-71.	2.2	64
40	Mechanical modeling and structural analysis of the primary plant cell wall. Current Opinion in Plant Biology, 2010, 13, 693-699.	7.1	63
41	PDMS Microcantilever-Based Flow Sensor Integration for Lab-on-a-Chip. IEEE Sensors Journal, 2013, 13, 601-609.	4.7	62
42	The Role of the Cytoskeleton and Dictyosome Activity in the Pulsatory Growth of <i>Nicotiana tabacum</i> and <i>Petunia hybrida</i> Pollen Tubes. Botanica Acta, 1996, 109, 102-109.	1.6	61
43	Immunogold Localization of Pectin and Callose in Pollen Grains and Pollen Tubes of Brugmansia suaveolens â€" Implications for the Self-Incompatibility Reaction. Journal of Plant Physiology, 1995, 147, 225-235.	3.5	57
44	The Architecture and Properties of the Pollen Tube Cell Wall. , 0, , 177-200.		57
45	Optimization of conditions for germination of cold-stored Arabidopsis thaliana pollen. Plant Cell Reports, 2009, 28, 347-357.	5.6	56
46	The self-incompatibility response in Papaver rhoeas pollen causes early and striking alterations to organelles. Cell Death and Differentiation, 2004, 11, 812-822.	11.2	54
47	Finite-Element Analysis of Geometrical Factors in Micro-Indentation of Pollen Tubes. Biomechanics and Modeling in Mechanobiology, 2006, 5, 227-236.	2.8	53
48	Methods to quantify primary plant cell wall mechanics. Journal of Experimental Botany, 2019, 70, 3615-3648.	4.8	51
49	The pollen tube paradigm revisited. Current Opinion in Plant Biology, 2012, 15, 618-624.	7.1	46
50	Navigating the plant cell: intracellular transport logistics in the green kingdom. Molecular Biology of the Cell, 2015, 26, 3373-3378.	2.1	44
51	Fluorescence visualization of cellulose and pectin in the primary plant cell wall. Journal of Microscopy, 2020, 278, 164-181.	1.8	44
52	Vesicle Dynamics during Plant Cell Cytokinesis Reveals Distinct Developmental Phases. Plant Physiology, 2017, 174, 1544-1558.	4.8	40
53	Spatial and Temporal Expression of Actin Depolymerizing Factors ADF7 and ADF10 during Male Gametophyte Development in Arabidopsis thaliana. Plant and Cell Physiology, 2011, 52, 1177-1192.	3.1	39
54	Cell mechanics of pollen tube growth. Current Opinion in Genetics and Development, 2018, 51, 11-17.	3.3	36

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55	Geometrical Details Matter for Mechanical Modeling of Cell Morphogenesis. Developmental Cell, 2019, 50, 117-125.e2.	7.0	36
56	Cytoskeletal regulation of primary plant cell wall assembly. Current Biology, 2021, 31, R681-R695.	3.9	36
57	Pollen tube growth: Getting a grip on cell biology through modeling. Mechanics Research Communications, 2012, 42, 32-39.	1.8	35
58	Dynamic, high precision targeting of growth modulating agents is able to trigger pollen tube growth reorientation. Plant Journal, 2014, 80, 185-195.	5.7	35
59	Inhibition of Intracellular Pectin Transport in Pollen Tubes by Monensin, Brefeldin A and Cytochalasin D*. Botanica Acta, 1996, 109, 373-381.	1.6	33
60	Signalling and the Cytoskeleton of Pollen Tubes of Papaver rhoeas. Annals of Botany, 2000, 85, 49-57.	2.9	33
61	Not-so-tip-growth. Plant Signaling and Behavior, 2009, 4, 136-138.	2.4	33
62	Plant AP180 N-Terminal Homolog Proteins Are Involved in Clathrin-Dependent Endocytosis during Pollen Tube Growth in Arabidopsis thaliana. Plant and Cell Physiology, 2019, 60, 1316-1330.	3.1	33
63	Understanding plant cell morphogenesis requires real-time monitoring of cell wall polymers. Current Opinion in Plant Biology, 2015, 23, 76-82.	7.1	32
64	Actuators Acting without Actin. Cell, 2016, 166, 15-17.	28.9	32
65	Cell Wall Accumulation of Cu Ions and Modulation of Lignifying Enzymes in Primary Leaves of Bean Seedlings Exposed to Excess Copper. Biological Trace Element Research, 2011, 139, 97-107.	3.5	31
66	Arabidopsis ASL11/LBD15 is involved in shoot apical meristem development and regulates WUS expression. Planta, 2013, 237, 1367-1378.	3.2	31
67	Ultrastructural immunolocalization of periodic pectin depositions in the cell wall ofNicotiana tabacum pollen tubes. Protoplasma, 1995, 187, 168-171.	2.1	29
68	A microfluidic platform for the investigation of elongation growth in pollen tubes. Journal of Micromechanics and Microengineering, 2012, 22, 115009.	2.6	26
69	Influence of Electric Fields and Conductivity on Pollen Tube Growth assessed via Electrical Lab-on-Chip. Scientific Reports, 2016, 6, 19812.	3.3	25
70	Durotropic Growth of Pollen Tubes. Plant Physiology, 2020, 183, 558-569.	4.8	25
71	Actin depolymerizing factors ADF7 and ADF10 play distinct roles during pollen development and pollen tube growth. Plant Signaling and Behavior, 2012, 7, 879-881.	2.4	22
72	Structural Changes of Cell Wall and Lignifying Enzymes Modulations in Bean Roots in Response to Copper Stress. Biological Trace Element Research, 2010, 136, 232-240.	3.5	21

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73	Cell Wall Assembly and Intracellular Trafficking in Plant Cells Are Directly Affected by Changes in the Magnitude of Gravitational Acceleration. PLoS ONE, 2013, 8, e58246.	2.5	21
74	Microfluidic positioning of pollen grains in lab-on-a-chip for single cell analysis. Journal of Bioscience and Bioengineering, 2014, 117, 504-511.	2.2	21
75	The Rheological Properties of the Pollen Tube Cell Wall. , 1999, , 283-302.		21
76	Cytomechanical Properties of Papaver Pollen Tubes Are Altered after Self-Incompatibility Challenge. Biophysical Journal, 2004, 86, 3314-3323.	0.5	20
77	Plant and fungal cytomechanics: quantifying and modeling cellular architectureThis review is one of a selection of papers published in the Special Issue on Plant Cell Biology.. Canadian Journal of Botany, 2006, 84, 581-593.	1.1	20
78	Modeling the nonlinear elastic behavior of plant epidermis. Botany, 2020, 98, 49-64.	1.0	19
79	Plant biomechanics in the 21st century. Journal of Experimental Botany, 2019, 70, 3435-3438.	4.8	18
80	Optimization of flow assisted entrapment of pollen grains in a microfluidic platform for tip growth analysis. Biomedical Microdevices, 2014, 16, 23-33.	2.8	17
81	Measuring the growth force of invasive plant cells using Flexure integrated Lab-on-a-Chip (FiLoC). Technology, 2018, 06, 101-109.	1.4	17
82	Effect of copper excess on H₂O₂accumulation and peroxidase activities in bean roots. Acta Biologica Hungarica, 2008, 59, 233-245.	0.7	16
83	Gravity Research on Plants: Use of Single-Cell Experimental Models. Frontiers in Plant Science, 2011, 2, 56.	3.6	16
84	Modeling pollen tube growth: Feeling the pressure to deliver testifiable predictions. Plant Signaling and Behavior, 2011, 6, 1828-1830.	2.4	16
85	Microfluidics-Based Bioassays and Imaging of Plant Cells. Plant and Cell Physiology, 2021, 62, 1239-1250.	3.1	16
86	Inhibition of ethylene biosynthesis does not block microtubule re-orientation in wounded pea roots. Protoplasma, 1997, 198, 135-142.	2.1	13
87	Pollen Tubes With More Viscous Cell Walls Oscillate at Lower Frequencies. Mathematical Modelling of Natural Phenomena, 2013, 8, 25-34.	2.4	13
88	Mechanosensitive ion channels contribute to mechanically evoked rapid leaflet movement in <i>Mimosa pudica</i>. Plant Physiology, 2021, 187, 1704-1712.	4.8	13
89	Nucleoside intermediates in blasticidin S biosynthesis identified by the in vivo use of enzyme inhibitors. Canadian Journal of Chemistry, 1994, 72, 6-11.	1.1	12
90	In Vitro Study of Oscillatory Growth Dynamics of Camellia Pollen Tubes in Microfluidic Environment. IEEE Transactions on Biomedical Engineering, 2013, 60, 3185-3193.	4.2	11

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91	Bracing for Abscission. Cell, 2018, 173, 1320-1322.	28.9	9
92	Travel Less. Make It Worthwhile.. Cell, 2020, 182, 790-793.	28.9	8
93	Cell Biology of Plant and Fungal Tip Growth -- Getting to the Point. Plant Cell, 2000, 12, 1513.	6.6	7
94	FRAP Experiments Show Pectate Lyases Promote Pollen Germination and Lubricate the Path of the Pollen Tube in Arabidopsis thaliana.. Microscopy and Microanalysis, 2018, 24, 1376-1377.	0.4	7
95	Tensile Testing of Primary Plant Cells and Tissues. , 2018, , 321-347.		7
96	Cell Death of Self-Incompatible Pollen Tubes: Necrosis or Apoptosis?. , 1999, , 113-137.		7
97	Persistent Symmetry Frustration in Pollen Tubes. PLoS ONE, 2012, 7, e48087.	2.5	7
98	Biomechanics of hair fibre growth: A multi-scale modeling approach. Journal of the Mechanics and Physics of Solids, 2021, 148, 104290.	4.8	6
99	Cupric stress induces oxidative damage marked by accumulation of H2O2and changes to chloroplast ultrastructure in primary leaves of beans (Phaseolus vulgarisL.). Acta Biologica Hungarica, 2010, 61, 191-203.	0.7	5
100	Depletion of the mitotic kinase Cdc5p in Candida albicans results in the formation of elongated buds that switch to the hyphal fate over time in a Ume6p and Hgc1p-dependent manner. Fungal Genetics and Biology, 2017, 107, 51-66.	2.1	5
101	Generating a Cellular Protuberance: Mechanics of Tip Growth. Signaling and Communication in Plants, 2011, , 117-132.	0.7	5
102	Alterations in the Actin Cytoskeleton of Pollen Tubes Are Induced by the Self-Incompatibility Reaction in Papaver rhoeas. Plant Cell, 2000, 12, 1239.	6.6	4
103	Immunocytochemical localization of pectin in stylar tissues. Micron and Microscopica Acta, 1992, 23, 125-126.	0.2	3
104	Live Cell and Immuno-Labeling Techniques to Study Gravitational Effects on Single Plant Cells. Methods in Molecular Biology, 2015, 1309, 209-226.	0.9	3
105	Modeling of the Primary Plant Cell Wall in the Context of Plant Development. , 2014, , 1-17.		3
106	Actin Rearrangements in Pollen Tubes are Stimulated by the Self-Incompatibility (SI) Response in Papaver Rhoeas L.. , 2000, , 347-360.		3
107	Pollen Tip Growth: Control of Cellular Morphogenesis Through Intracellular Trafficking. , 2017, , 129-148.		2
108	Silicone Chambers for Pollen Tube Imaging in Microstructured In Vitro Environments. Methods in Molecular Biology, 2020, 2160, 211-221.	0.9	2

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109	Applications of microfluidics for studying growth mechanisms of tip growing pollen tubes. , 2014, 2014, 6175-8.		1
110	Assessing the Influence of Electric Cues and Conductivity on Pollen Tube Growth via Lab-On-A-Chip Technology. Biophysical Journal, 2014, 106, 574a.	0.5	1
111	Mechanics of Interdigitating Morphogenesis in Pavement Cells. Microscopy and Microanalysis, 2015, 21, 201-202.	0.4	1
112	Plant biomechanics â€" an interdisciplinary lens on plant biology. Botany, 2020, 98, vii-viii.	1.0	1
113	Lab-on-a-Chip for Studying Growing Pollen Tubes. Methods in Molecular Biology, 2014, 1080, 237-248.	0.9	1
114	Microfluidic- and Microelectromechanical System (MEMS)-Based Platforms for Experimental Analysis of Pollen Tube Growth Behavior and Quantification of Cell Mechanical Properties. , 2017, , 87-103.		1
115	Assembly of a simple scalable device for micromechanical testing of plant tissues. Methods in Cell Biology, 2020, 160, 327-348.	1.1	1
116	Calendar of Meetings and Courses. Microscopy and Microanalysis, 2006, 12, 438-440.	0.4	0
117	Visualization of the Pollen Tube Cytoskeleton using Structured Illumination Fluorescence Microscopy. Microscopy and Microanalysis, 2006, 12, 438-439.	0.4	0
118	Modeling Cytoskeletal Dynamics and Vesicle Movements in Growing Pollen Tubes. Biophysical Journal, 2010, 98, 721a.	0.5	0
119	Finite Element Modeling of Polar Growth in Walled Cells. Biophysical Journal, 2011, 100, 190a.	0.5	0
120	Logistics of Intracellular Transport Required for Cell Wall Assembly. Biophysical Journal, 2012, 102, 378a.	0.5	0
121	Mapping Vesicle Trafficking during Plant Cell Cytokinesis using Spatio-Temporal Image Correlation Spectroscopy. Biophysical Journal, 2012, 102, 378a.	0.5	0
122	Matching Anatomies - Correlating Pollen Tube Anatomy With Pistillar Geometry. Microscopy and Microanalysis, 2014, 20, 1278-1279.	0.4	0
123	Quantitative Determination of Cell Wall Mechanical Properties using Microfluidics. Biophysical Journal, 2014, 106, 574a.	0.5	0
124	Welcome from the Society Presidents. Microscopy and Microanalysis, 2014, 20, xciii-xciii.	0.4	0
125	Welcome to this Microscopy and Microanalysis meeting, M & M 2014 in Hartford, Connecticut!. Microscopy and Microanalysis, 2014, 20, xciv-xcvi.	0.4	0
126	Navigating a Maze - Sensing and Responding to Mechanical Obstacles during Cellular Invasive Growth. Biophysical Journal, 2015, 108, 12a.	0.5	0

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127	Form Follows Function: How to Build a Deadly Trap. Cell, 2020, 180, 826-828.	28.9	0
128	Galvanotropic Chamber for Controlled Reorientation of Pollen Tube Growth and Simultaneous Confocal Imaging of Intracellular Dynamics. Methods in Molecular Biology, 2020, 2160, 191-200.	0.9	0