Anja Geitmann

List of Publications by Citations

119 papers	4,873 citations	44 h-index	67 g-index
133 ext. papers	5,645 ext. citations	6.6 avg, IF	6.2 L-index

#	Paper	IF	Citations
119	Mechanics and modeling of plant cell growth. *Trends in Plant Science*, **2009**, 14, 467-78	13.1	228
118	Pectin and the role of the physical properties of the cell wall in pollen tube growth of Solanum chacoense. *Planta*, **2005**, 220, 582-92	4.7	221
117	The cell wall of the Arabidopsis pollen tube--spatial distribution, recycling, and network formation of polysaccharides. *Plant Physiology*, **2012**, 160, 1940-55	6.6	175
116	The cytoskeleton in plant and fungal cell tip growth. *Journal of Microscopy*, **2000**, 198, 218-45	1.9	161
115	Finite element model of polar growth in pollen tubes. *Plant Cell*, **2010**, 22, 2579-93	11.6	151
114	Magnitude and direction of vesicle dynamics in growing pollen tubes using spatiotemporal image correlation spectroscopy and fluorescence recovery after photobleaching. *Plant Physiology*, **2008**, 147, 1646-58	6.6	146
113	Alterations in the actin cytoskeleton of pollen tubes are induced by the self-incompatibility reaction in Papaver rhoeas. *Plant Cell*, **2000**, 12, 1239-51	11.6	138
112	Polar growth in pollen tubes is associated with spatially confined dynamic changes in cell mechanical properties. *Developmental Biology*, **2009**, 334, 437-46	3.1	132
111	More than a leak sealant. The mechanical properties of callose in pollen tubes. *Plant Physiology*, **2005**, 137, 274-86	6.6	132
110	The role of pectin in plant morphogenesis. *BioSystems*, **2012**, 109, 397-402	1.9	130
109	Relating the mechanics of the primary plant cell wall to morphogenesis. *Journal of Experimental Botany*, **2016**, 67, 449-61	7	129
108	Live imaging of calcium spikes during double fertilization in Arabidopsis. *Nature Communications*, **2014**, 5, 4722	17.4	99
107	Regulator or driving force? The role of turgor pressure in oscillatory plant cell growth. *PLoS ONE*, **2011**, 6, e18549	3.7	99
106	Under pressure, cell walls set the pace. *Trends in Plant Science*, **2010**, 15, 363-9	13.1	92
105	Copper toxicity in expanding leaves of Phaseolus vulgaris L.: antioxidant enzyme response and nutrient element uptake. *Ecotoxicology and Environmental Safety*, **2010**, 73, 1304-8	7	87
104	Actin is involved in pollen tube tropism through redefining the spatial targeting of secretory vesicles. *Traffic*, **2011**, 12, 1537-51	5.7	79
103	Model for calcium dependent oscillatory growth in pollen tubes. *Journal of Theoretical Biology*, **2008**, 253, 363-74	2.3	76

102	Cellular growth in plants requires regulation of cell wall biochemistry. *Current Opinion in Cell Biology*, **2017**, 44, 28-35	9	75
101	Microfilament orientation constrains vesicle flow and spatial distribution in growing pollen tubes. *Biophysical Journal*, **2009**, 97, 1822-31	2.9	75
100	Immunogold localization of arabinogalactan proteins, unesterified and esterified pectins in pollen grains and pollen tubes ofNicotiana tabacum L.. *Protoplasma*, **1995**, 189, 26-36	3.4	74
99	The local cytomechanical properties of growing pollen tubes correspond to the axial distribution of structural cellular elements. *Sexual Plant Reproduction*, **2004**, 17, 9-16		73
98	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, 8093-8	11.5	69
97	Transport logistics in pollen tubes. *Molecular Plant*, **2013**, 6, 1037-52	14.4	69
96	Pollen tube growth: coping with mechanical obstacles involves the cytoskeleton. *Planta*, **2007**, 226, 405-16	4.7	68
95	Experimental approaches used to quantify physical parameters at cellular and subcellular levels. *American Journal of Botany*, **2006**, 93, 1380-90	2.7	68
94	TipChip: a modular, MEMS-based platform for experimentation and phenotyping of tip-growing cells. *Plant Journal*, **2013**, 73, 1057-68	6.9	62
93	Ca2+ channels control the rapid expansions in pulsating growth of Petunia hybrida pollen tubes. *Journal of Plant Physiology*, **1998**, 152, 439-447	3.6	59
92	A specific role for Arabidopsis TRAPPII in post-Golgi trafficking that is crucial for cytokinesis and cell polarity. *Plant Journal*, **2011**, 68, 234-48	6.9	58
91	Morphogenesis of complex plant cell shapes: the mechanical role of crystalline cellulose in growing pollen tubes. *Sexual Plant Reproduction*, **2010**, 23, 15-27		58
90	The Role of the Cytoskeleton and Dictyosome Activity in the Pulsatory Growth of Nicotiana tabacum and Petunia hybrida Pollen Tubes. *Botanica Acta*, **1996**, 109, 102-109		58
89	Pollen tubes and the physical world. *Trends in Plant Science*, **2011**, 16, 353-5	13.1	57
88	Reactive oxygen species are involved in pollen tube initiation in kiwifruit. *Plant Biology*, **2012**, 14, 64-76	3.7	57
87	Mechanical modeling and structural analysis of the primary plant cell wall. *Current Opinion in Plant Biology*, **2010**, 13, 693-9	9.9	57
86	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		54
85	Immunogold Localization of Pectin and Callose in Pollen Grains and Pollen Tubes of Brugmansia suaveolens Implications for the Self-Incompatibility Reaction. *Journal of Plant Physiology*, **1995**, 147, 225-235	3.6	54

84	Pectin Chemistry and Cellulose Crystallinity Govern Pavement Cell Morphogenesis in a Multi-Step Mechanism. *Plant Physiology*, **2019**, 181, 127-141	6.6	53
83	Quantification of the Young's modulus of the primary plant cell wall using Bending-Lab-On-Chip (BLOC). *Lab on A Chip*, **2013**, 13, 2599-608	7.2	51
82	Finite Element Modeling of Shape Changes in Plant Cells. *Plant Physiology*, **2018**, 176, 41-56	6.6	50
81	The cellular mechanics of an invasive lifestyle. *Journal of Experimental Botany*, **2013**, 64, 4709-28	7	49
80	The Architecture and Properties of the Pollen Tube Cell Wall177-200		49
79	A mechanosensitive Ca channel activity is dependent on the developmental regulator DEK1. *Nature Communications*, **2017**, 8, 1009	17.4	47
78	Finite-element analysis of geometrical factors in micro-indentation of pollen tubes. *Biomechanics and Modeling in Mechanobiology*, **2006**, 5, 227-36	3.8	47
77	The self-incompatibility response in Papaver rhoeas pollen causes early and striking alterations to organelles. *Cell Death and Differentiation*, **2004**, 11, 812-22	12.7	47
76	PDMS Microcantilever-Based Flow Sensor Integration for Lab-on-a-Chip. *IEEE Sensors Journal*, **2013**, 13, 601-609	4	46
75	Mechanical Stress Initiates and Sustains the Morphogenesis of Wavy Leaf Epidermal Cells. *Cell Reports*, **2019**, 28, 1237-1250.e6	10.6	44
74	The middle lamella-more than a glue. *Physical Biology*, **2017**, 14, 015004	3	43
73	Optimization of conditions for germination of cold-stored Arabidopsis thaliana pollen. *Plant Cell Reports*, **2009**, 28, 347-57	5.1	43
72	The pollen tube paradigm revisited. *Current Opinion in Plant Biology*, **2012**, 15, 618-24	9.9	40
71	Pollen tube growth: Getting a grip on cell biology through modeling. *Mechanics Research Communications*, **2012**, 42, 32-39	2.2	33
70	Dynamic, high precision targeting of growth modulating agents is able to trigger pollen tube growth reorientation. *Plant Journal*, **2014**, 80, 185-95	6.9	32
69	Spatial and temporal expression of actin depolymerizing factors ADF7 and ADF10 during male gametophyte development in Arabidopsis thaliana. *Plant and Cell Physiology*, **2011**, 52, 1177-92	4.9	32
68	Not-so-tip-growth. *Plant Signaling and Behavior*, **2009**, 4, 136-8	2.5	30
67	Inhibition of Intracellular Pectin Transport in Pollen Tubes by Monensin, Brefeldin A and Cytochalasin D*. *Botanica Acta*, **1996**, 109, 373-381		30

66	Understanding plant cell morphogenesis requires real-time monitoring of cell wall polymers. *Current Opinion in Plant Biology*, **2015**, 23, 76-82	9.9	28
65	Methods to quantify primary plant cell wall mechanics. *Journal of Experimental Botany*, **2019**, 70, 3615-3648	7	25
64	Arabidopsis ASL11/LBD15 is involved in shoot apical meristem development and regulates WUS expression. *Planta*, **2013**, 237, 1367-78	4.7	24
63	Geometrical Details Matter for Mechanical Modeling of Cell Morphogenesis. *Developmental Cell*, **2019**, 50, 117-125.e2	10.2	23
62	Vesicle Dynamics during Plant Cell Cytokinesis Reveals Distinct Developmental Phases. *Plant Physiology*, **2017**, 174, 1544-1558	6.6	22
61	Ultrastructural immunolocalization of periodic pectin depositions in the cell wall ofNicotiana tabacum pollen tubes. *Protoplasma*, **1995**, 187, 168-171	3.4	22
60	A microfluidic platform for the investigation of elongation growth in pollen tubes. *Journal of Micromechanics and Microengineering*, **2012**, 22, 115009	2	21
59	Signalling and the Cytoskeleton of Pollen Tubes of Papaver rhoeas. *Annals of Botany*, **2000**, 85, 49-57	4.1	21
58	Microfluidic positioning of pollen grains in lab-on-a-chip for single cell analysis. *Journal of Bioscience and Bioengineering*, **2014**, 117, 504-11	3.3	20
57	Cytomechanical properties of papaver pollen tubes are altered after self-incompatibility challenge. *Biophysical Journal*, **2004**, 86, 3314-23	2.9	20
56	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	4.9	19
55	Cell mechanics of pollen tube growth. *Current Opinion in Genetics and Development*, **2018**, 51, 11-17	4.9	19
54	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		19
53	Influence of Electric Fields and Conductivity on Pollen Tube Growth assessed via Electrical Lab-on-Chip. *Scientific Reports*, **2016**, 6, 19812	4.9	19
52	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	3.7	17
51	The Rheological Properties of the Pollen Tube Cell Wall **1999**, 283-302		17
50	Fluorescence visualization of cellulose and pectin in the primary plant cell wall. *Journal of Microscopy*, **2020**, 278, 164-181	1.9	16
49	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	4.5	16

48	Structural changes of cell wall and lignifying enzymes modulations in bean roots in response to copper stress. *Biological Trace Element Research*, **2010**, 136, 232-40	4.5	16
47	Actuators Acting without Actin. *Cell*, **2016**, 166, 15-7	56.2	14
46	Gravity research on plants: use of single-cell experimental models. *Frontiers in Plant Science*, **2011**, 2, 56	6.2	14
45	Modeling pollen tube growth: feeling the pressure to deliver testifiable predictions. *Plant Signaling and Behavior*, **2011**, 6, 1828-30	2.5	14
44	Optimization of flow assisted entrapment of pollen grains in a microfluidic platform for tip growth analysis. *Biomedical Microdevices*, **2014**, 16, 23-33	3.7	13
43	Actin depolymerizing factors ADF7 and ADF10 play distinct roles during pollen development and pollen tube growth. *Plant Signaling and Behavior*, **2012**, 7, 879-81	2.5	13
42	Durotropic Growth of Pollen Tubes. *Plant Physiology*, **2020**, 183, 558-569	6.6	12
41	Inhibition of ethylene biosynthesis does not block microtubule re-orientation in wounded pea roots. *Protoplasma*, **1997**, 198, 135-142	3.4	12
40	Effect of copper excess on H2O2 accumulation and peroxidase activities in bean roots. *Acta Biologica Hungarica*, **2008**, 59, 233-45		12
39	Plant biomechanics in the 21st century. *Journal of Experimental Botany*, **2019**, 70, 3435-3438	7	11
38	In vitro study of oscillatory growth dynamics of Camellia pollen tubes in microfluidic environment. *IEEE Transactions on Biomedical Engineering*, **2013**, 60, 3185-93	5	11
37	Pollen Tubes With More Viscous Cell Walls Oscillate at Lower Frequencies. *Mathematical Modelling of Natural Phenomena*, **2013**, 8, 25-34	3	11
36	Measuring the growth force of invasive plant cells using Flexure integrated Lab-on-a-Chip (FiLoC) **2018**, 06, 101-109		11
35	Nucleoside intermediates in blasticidin S biosynthesis identified by the in vivo use of enzyme inhibitors. *Canadian Journal of Chemistry*, **1994**, 72, 6-11	0.9	9
34	Cytoskeletal regulation of primary plant cell wall assembly. *Current Biology*, **2021**, 31, R681-R695	6.3	8
33	Modeling the nonlinear elastic behavior of plant epidermis. *Botany*, **2020**, 98, 49-64	1.3	8
32	Cell Biology of Plant and Fungal Tip Growth -- Getting to the Point. *Plant Cell*, **2000**, 12, 1513	11.6	6
31	Cell Death of Self-Incompatible Pollen Tubes: Necrosis or Apoptosis? **1999**, 113-137		6

30	Cupric stress induces oxidative damage marked by accumulation of H2O2 and changes to chloroplast ultrastructure in primary leaves of beans (Phaseolus vulgaris L.). *Acta Biologica Hungarica*, **2010**, 61, 191-203		5
29	Persistent symmetry frustration in pollen tubes. *PLoS ONE*, **2012**, 7, e48087	3.7	5
28	Travel Less. Make It Worthwhile. *Cell*, **2020**, 182, 790-793	56.2	5
27	Microfluidics-Based Bioassays and Imaging of Plant Cells. *Plant and Cell Physiology*, **2021**, 62, 1239-1250	4.9	5
26	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	0.5	4
25	Tensile Testing of Primary Plant Cells and Tissues **2018**, 321-347		4
24	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	3.9	4
23	Alterations in the Actin Cytoskeleton of Pollen Tubes Are Induced by the Self-Incompatibility Reaction in Papaver rhoeas. *Plant Cell*, **2000**, 12, 1239	11.6	4
22	Generating a Cellular Protuberance: Mechanics of Tip Growth. *Signaling and Communication in Plants*, **2011**, 117-132	1	4
21	Live cell and immuno-labeling techniques to study gravitational effects on single plant cells. *Methods in Molecular Biology*, **2015**, 1309, 209-26	1.4	3
20	Immunocytochemical localization of pectin in stylar tissues. *Micron and Microscopica Acta*, **1992**, 23, 125-126		3
19	Mechanical stress initiates and sustains the morphogenesis of wavy leaf epidermal cells		3
18	Bracing for Abscission. *Cell*, **2018**, 173, 1320-1322	56.2	3
17	Actin Rearrangements in Pollen Tubes are Stimulated by the Self-Incompatibility (SI) Response in Papaver Rhoeas L. **2000**, 347-360		2
16	Biomechanics of hair fibre growth: A multi-scale modeling approach. *Journal of the Mechanics and Physics of Solids*, **2021**, 148, 104290	5	2
15	Plant biomechanics □an interdisciplinary lens on plant biology. *Botany*, **2020**, 98, vii-viii	1.3	1
14	Applications of microfluidics for studying growth mechanisms of tip growing pollen tubes. *Annual International Conference of the IEEE Engineering in Medicine and Biology Society IEEE Engineering in Medicine and Biology Society Annual International Conference*, **2014**, 2014, 6175-8	0.9	1
13	Mechanics of Interdigitating Morphogenesis in Pavement Cells. *Microscopy and Microanalysis*, **2015**, 21, 201-202	0.5	1

12	Pollen Tip Growth: Control of Cellular Morphogenesis Through Intracellular Trafficking **2017**, 129-148		1
11	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
10	Lab-on-a-chip for studying growing pollen tubes. *Methods in Molecular Biology*, **2014**, 1080, 237-48	1.4	1
9	Mechanosensitive ion channels contribute to mechanically evoked rapid leaflet movement in Mimosa pudica. *Plant Physiology*, **2021**, 187, 1704-1712	6.6	1
8	Modeling of the Primary Plant Cell Wall in the Context of Plant Development **2014**, 1-17		1
7	Silicone Chambers for Pollen Tube Imaging in Microstructured In Vitro Environments. *Methods in Molecular Biology*, **2020**, 2160, 211-221	1.4	0
6	Probing cell behavior: Combining MEMS (microelectromechanical systems) technology with high resolution live cell imaging **2016**, 67-68		
5	Form Follows Function: How to Build a Deadly Trap. *Cell*, **2020**, 180, 826-828	56.2	
4	Matching Anatomies - Correlating Pollen Tube Anatomy With Pistillar Geometry. *Microscopy and Microanalysis*, **2014**, 20, 1278-1279	0.5	
3	Visualization of the Pollen Tube Cytoskeleton using Structured Illumination Fluorescence Microscopy. *Microscopy and Microanalysis*, **2006**, 12, 438-439	0.5	
2	Assembly of a simple scalable device for micromechanical testing of plant tissues. *Methods in Cell Biology*, **2020**, 160, 327-348	1.8	
1	Galvanotropic Chamber for Controlled Reorientation of Pollen Tube Growth and Simultaneous Confocal Imaging of Intracellular Dynamics. *Methods in Molecular Biology*, **2020**, 2160, 191-200	1.4	