Wilhelm Barthlott

List of Publications by Year
in descending order

110 papers	13,688 citations	44069 48 h-index	26613 107 g-index
113 all docs	113 docs citations	113 times ranked	13928 citing authors

#	Article	IF	Citations
1	Wetting and Self-Cleaning Properties of Artificial Superhydrophobic Surfaces. Langmuir, 2005, 21, 956-961.	3.5	1,311
2	A global assessment of endemism and species richness across island and mainland regions. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 9322-9327.	7.1	901
3	Multifunctional surface structures of plants: An inspiration for biomimetics. Progress in Materials Science, 2009, 54, 137-178.	32.8	756
4	Classification and terminology of plant epicuticular waxes. Botanical Journal of the Linnean Society, 1998, 126, 237-260.	1.6	682
5	Superhydrophobic and superhydrophilic plant surfaces: an inspiration for biomimetic materials. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2009, 367, 1487-1509.	3.4	621
6	Diversity of structure, morphology and wetting of plant surfaces. Soft Matter, 2008, 4, 1943.	2.7	613
7	Fabrication of artificial Lotus leaves and significance of hierarchical structure for superhydrophobicity and low adhesion. Soft Matter, 2009, 5, 1386.	2.7	605
8	Epidermal and seed surface characters of plants: systematic applicability and some evolutionary aspects. Nordic Journal of Botany, 1981, 1, 345-355.	0.5	555
9	Superhydrophobicity in perfection: the outstanding properties of the lotus leaf. Beilstein Journal of Nanotechnology, 2011, 2, 152-161.	2.8	542
10	Global patterns of plant diversity and floristic knowledge. Journal of Biogeography, 2005, 32, 1107-1116.	3.0	467
11	Wettability and Contaminability of Insect Wings as a Function of Their Surface Sculptures. Acta Zoologica, 1996, 77, 213-225.	0.8	441
12	The <i>Salvinia</i> Paradox: Superhydrophobic Surfaces with Hydrophilic Pins for Air Retention Under Water. Advanced Materials, 2010, 22, 2325-2328.	21.0	433
13	Plant Surfaces: Structures and Functions for Biomimetic Innovations. Nano-Micro Letters, 2017, 9, 23.	27.0	304
14	The dream of staying clean: Lotus and biomimetic surfaces. Bioinspiration and Biomimetics, 2007, 2, S126-S134.	2.9	290
15	Title is missing!. Plant Ecology, 2000, 151, 19-28.	1.6	262
16	Global diversity of island floras from a macroecological perspective. Ecology Letters, 2008, 11, 116-127.	6.4	256
17	How plants shape the ant community in the Amazonian rainforest canopy: the key role of extrafloral nectaries and homopteran honeydew. Oecologia, 2000, 125, 229-240.	2.0	234
18	Title is missing!. Plant Ecology, 2001, 152, 145-156.	1.6	182

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19	Hierarchically Sculptured Plant Surfaces and Superhydrophobicity. Langmuir, 2009, 25, 14116-14120.	3.5	165
20	Diversity and ecology of saxicolous vegetation mats on inselbergs in the Brazilian Atlantic rainforest. Diversity and Distributions, 1998, 4, 107-119.	4.1	138
21	Diversity and biogeography of vascular epiphytes in Western Amazonia, YasunÃ; Ecuador. Journal of Biogeography, 2004, 31, 1463-1476.	3.0	137
22	Superhydrophobic hierarchically structured surfaces in biology: evolution, structural principles and biomimetic applications. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20160191.	3.4	135
23	Contrasting environmental and regional effects on global pteridophyte and seed plant diversity. Ecography, 2010, 33, 408-419.	4.5	134
24	Self assembly of epicuticular waxes on living plant surfaces imaged by atomic force microscopy (AFM). Journal of Experimental Botany, 2004, 55, 711-718.	4.8	133
25	Influences of air humidity during the cultivation of plants on wax chemical composition, morphology and leaf surface wettability. Environmental and Experimental Botany, 2006, 56, 1-9.	4.2	131
26	Chemistry and Crystal Growth of Plant Wax Tubules of Lotus (Nelumbo nucifera) and Nasturtium (Tropaeolum majus) Leaves on Technical Substrates. Crystal Growth and Design, 2006, 6, 2571-2578.	3.0	130
27	Dry under water: Comparative morphology and functional aspects of airâ€retaining insect surfaces. Journal of Morphology, 2011, 272, 442-451.	1.2	110
28	Projected impacts of climate change on regional capacities for global plant species richness. Proceedings of the Royal Society B: Biological Sciences, 2010, 277, 2271-2280.	2.6	100
29	Conservation of Epiphyte Diversity in an Andean Landscape Transformed by Human Land Use. Conservation Biology, 2009, 23, 911-919.	4.7	97
30	The significance of geographic range size for spatial diversity patterns in Neotropical palms. Ecography, 2006, 29, 21-30.	4.5	95
31	Velamen radicum micromorphology and classification of Orchidaceae. Nordic Journal of Botany, 1988, 8, 117-137.	0.5	91
32	A fast, precise and low-cost replication technique for nano- and high-aspect-ratio structures of biological and artificial surfaces. Bioinspiration and Biomimetics, 2008, 3, 046002.	2.9	91
33	Phylogeny ofNymphaea(Nymphaeaceae): Evidence from Substitutions and Microstructural Changes in the ChloroplasttrnTâ€trnFRegion. International Journal of Plant Sciences, 2007, 168, 639-671.	1.3	90
34	Superhydrophobicity of Biological and Technical Surfaces under Moisture Condensation: Stability in Relation to Surface Structure. Langmuir, 2008, 24, 13591-13597.	3.5	87
35	Biomimetic replicas: Transfer of complex architectures with different optical properties from plant surfaces onto technical materials. Acta Biomaterialia, 2009, 5, 1848-1854.	8.3	87
36	The site of Î²-chitin fibril formation in centric diatoms. I. Pores and fibril formation. Journal of Ultrastructure Research, 1979, 68, 6-15.	1.1	74

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37	Spatial Distribution of Vascular Epiphytes (including Hemiepiphytes) in a Lowland Amazonian Rain Forest (Surumoni Crane Plot) of Southern Venezuela1. Biotropica, 2000, 32, 385.	1.6	74
38	Global moss diversity: spatial and taxonomic patterns of species richness. Journal of Bryology, 2013, 35, 1-11.	1.2	68
39	First protozoa-trapping plant found. Nature, 1998, 392, 447-447.	27.8	65
40	Superhydrophobic surfaces of the water bug<i>Notonecta glauca</i>: a model for friction reduction and air retention. Beilstein Journal of Nanotechnology, 2011, 2, 137-144.	2.8	65
41	The superhydrophilic and superoleophilic leaf surface of Ruellia devosiana (Acanthaceae): a biological model for spreading of water and oil on surfaces. Functional Plant Biology, 2009, 36, 339.	2.1	61
42	Biodiversity and vegetation of smallâ€sized inselbergs in a West African rain forest (TaÃ±, Ivory Coast). Journal of Biogeography, 1996, 23, 47-55.	3.0	59
43	Mikromorphologie und Orientierungsmuster epicuticularer Wachs-Kristalloide: Ein neues systematisches Merkmal bei Monokotylen. Plant Systematics and Evolution, 1983, 142, 171-185.	0.9	54
44	Classification of trichome types within species of the water fern Salvinia, and ontogeny of the egg-beater trichomes. Botany, 2009, 87, 830-836.	1.0	54
45	Hierarchically structured superhydrophobic flowers with low hysteresis of the wild pansy (<i>Viola) Tj ETQq1 1 0.784314 rgBT /Overlo 2011, 2, 228-236.	2.8	52
46	Phylogenetic analysis of <i>Pinguicula</i> (Lentibulariaceae): chloroplast DNA sequences and morphology support several geographically distinct radiations. American Journal of Botany, 2005, 92, 1723-1736.	1.7	51
47	Thermal evaporation of multi-component waxes and thermally activated formation of nanotubules for superhydrophobic surfaces. Progress in Organic Coatings, 2009, 66, 221-227.	3.9	51
48	Droplets on Superhydrophobic Surfaces: Visualization of the Contact Area by Cryo-Scanning Electron Microscopy. Langmuir, 2009, 25, 13077-13083.	3.5	51
49	What does it take to resolve relationships and to identify species with molecular markers? An example from the epiphytic Rhipsalideae (Cactaceae). American Journal of Botany, 2011, 98, 1549-1572.	1.7	51
50	Ultrastructure, chemical composition, and recrystallization of epicuticular waxes: transversely ridged rodlets. Canadian Journal of Botany, 1999, 77, 706-720.	1.1	50
51	Mikromorphologie der Samenschalen und Taxonomie derCactaceae: Ein raster-elektronenmikroskopischer ï¿½berblick. Plant Systematics and Evolution, 1979, 132, 205-229.	0.9	47
52	Chemical Composition and Recrystallization of Epicuticular Waxes: Coiled Rodlets and Tubules. Plant Biology, 2000, 2, 462-470.	3.8	45
53	Microstructures of superhydrophobic plant leaves - inspiration for efficient oil spill cleanup materials. Bioinspiration and Biomimetics, 2016, 11, 056003.	2.9	45
54	Biogeography of Nymphaeales: extant patterns and historical events. Taxon, 2008, 57, 1123.	0.7	44

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55	Measuring air layer volumes retained by submerged floating-ferns <i>Salvinia</i> and biomimetic superhydrophobic surfaces. Beilstein Journal of Nanotechnology, 2014, 5, 812-821.	2.8	44
56	A torch in the rain forest: thermogenesis of the Titan arum (<i>Amorphophallus titanum</i>). Plant Biology, 2009, 11, 499-505.	3.8	41
57	Superhydrophobic Vertically Aligned Carbon Nanotubes for Biomimetic Air Retention under Water (<i>Salvinia</i> Effect). Advanced Materials Interfaces, 2017, 4, 1700273.	3.7	41
58	Trap architecture in carnivorous Utricularia (Lentibulariaceae). Flora: Morphology, Distribution, Functional Ecology of Plants, 2006, 201, 597-605.	1.2	40
59	Lotus-Effect^{Â®};: Biomimetic Super-Hydrophobic Surfaces and their Application. Advances in Science and Technology, 0, , .	0.2	38
60	Fog Collection on Polyethylene Terephthalate (PET) Fibers: Influence of Cross Section and Surface Structure. Langmuir, 2017, 33, 5555-5564.	3.5	38
61	On the occurrence of a velamen radicum in Cyperaceae and Velloziaceae. Nordic Journal of Botany, 1995, 15, 625-629.	0.5	36
62	Effect of Host Tree Traits on Epiphyte Diversity in Natural and Anthropogenic Habitats in Ecuador. Biotropica, 2011, 43, 685-694.	1.6	36
63	Nature conservation: priority-setting needs a global change. Biodiversity and Conservation, 2013, 22, 1255-1281.	2.6	34
64	Micromorphology of epicuticular waxes in Centrosperms. Plant Systematics and Evolution, 1988, 161, 71-85.	0.9	33
65	A phylogenetic analysis of<i>Pfeiffera</i>and the reinstatement of<i>Lymanbensonia</i>as an independently evolved lineage of epiphytic<i>Cactaceae</i>within a new tribe<i>Lymanbensonieae</i>. Willdenowia, 2010, 40, 151-172.	0.8	32
66	At which surface roughness do claws cling? Investigations with larvae of the running water mayfly Epeorus assimilis (Heptageniidae, Ephemeroptera). Zoology, 2012, 115, 379-388.	1.2	32
67	Surface microstructures of daisy florets (Asteraceae) and characterization of their anisotropic wetting. Bioinspiration and Biomimetics, 2013, 8, 036005.	2.9	31
68	Nanostructure of epicuticular plant waxes: Self-assembly of wax tubules. Surface Science, 2009, 603, 1961-1968.	1.9	30
69	Elasticity of the hair cover in air-retaining Salvinia surfaces. Applied Physics A: Materials Science and Processing, 2015, 121, 505-511.	2.3	30
70	Chemistry and micromorphology of compound epicuticular wax crystalloids (Strelitzia type). Plant Systematics and Evolution, 1994, 193, 115-123.	0.9	29
71	Ants as epiphyte gardeners: comparing the nutrient quality of ant and termite canopy substrates in a Venezuelan lowland rain forest. Journal of Tropical Ecology, 2001, 17, 887-894.	1.1	29
72	Air Retention under Water by the Floating Fern <i>Salvinia</i>: The Crucial Role of a Trapped Air Layer as a Pneumatic Spring. Small, 2020, 16, e2003425.	10.0	29

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73	Classification and terminology of plant epicuticular waxes. Botanical Journal of the Linnean Society, 1998, 126, 237-260.	1.6	29
74	Dry in the Water: The Superhydrophobic Water Fern Salvinia â€“ a Model for Biomimetic Surfaces. , 2009, , 97-111.		26
75	A speciesâ€poor tropical sedge community: Afrotrilepis pilosa mats on inselbergs in West Africa. Nordic Journal of Botany, 1996, 16, 239-245.	0.5	24
76	Revision of the genus Genlisea (Lentibulariaceae) in Africa and Madagascar with notes on ecology and phytogeography. Nordic Journal of Botany, 2000, 20, 291-318.	0.5	24
77	Structural and mechanical peculiarities of the petioles of giant leaves of <i>Amorphophallus</i> (Araceae). American Journal of Botany, 2005, 92, 391-403.	1.7	24
78	Multifunctional Plant Surfaces and Smart Materials. , 2010, , 1399-1436.		23
79	Structure and evolution of metareticulate pollen. Grana, 1998, 37, 68-78.	0.8	22
80	Layers of Air in the Water beneath the Floating Fern Salvinia are Exposed to Fluctuations in Pressure. Integrative and Comparative Biology, 2014, 54, 1001-1007.	2.0	22
81	Wasserabsorption durch blatt- und sproÃŸorgane einiger Xerophyten. Zeitschrift FÃ¼r Pflanzenphysiologie, 1974, 72, 443-455.	1.4	21
82	Synthesis of (S)-Nonacosan-10-ol, the Major Component of Tubular Plant Wax Crystals. European Journal of Organic Chemistry, 2007, 2007, 3508-3511.	2.4	21
83	Range size and climatic niche correlate with the vulnerability of epiphytes to human land use in the tropics. Journal of Biogeography, 2013, 40, 963-976.	3.0	21
84	Isotopen-Markierungen and Raster-elektronenmikroskopische Untersuchungen des Velameya radicum der Orchideen. Zeitschrift FÃ¼r Pflanzenphysiologie, 1975, 75, 436-448.	1.4	20
85	Selenicereus wittii (Cactaceae): An epiphyte adapted to Amazonian Igapï¿½ inundation forests. Plant Systematics and Evolution, 1997, 206, 175-185.	0.9	20
86	Crystallographic studies of plant waxes. Powder Diffraction, 2000, 15, 123-129.	0.2	20
87	A new bioinspired method for pressure and flow sensing based on the underwater air-retaining surface of the backswimmer <i>Notonecta</i>. Beilstein Journal of Nanotechnology, 2018, 9, 3039-3047.	2.8	19
88	Applying Methods from Differential Geometry to Devise Stable and Persistent Air Layers Attached to Objects Immersed in Water. Journal of Bionic Engineering, 2009, 6, 350-356.	5.0	18
89	The capillary adhesion technique: a versatile method for determining the liquid adhesion force and sample stiffness. Beilstein Journal of Nanotechnology, 2015, 6, 11-18.	2.8	18
90	First Experimental Evidence for Zoophagy in the Hepatic Colura. Plant Biology, 2000, 2, 93-97.	3.8	17

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91	Cyanobacteria of inselbergs in the Atlantic rainforest zone of eastern Brazil. Phycologia, 2002, 41, 498-506.	1.4	17
92	Bionics and Biodiversity â€“ Bio-inspired Technical Innovation for a Sustainable Future. Biologically-inspired Systems, 2016, , 11-55.	0.2	17
93	<i>Staheliomyces</i> (Phallales) visited by <i>Trigona</i> (Apidae): melittophily in spore dispersal of an Amazonian stinkhorn?. Journal of Tropical Ecology, 1996, 12, 441-445.	1.1	16
94	Pollen-connecting threads inHeliconia (Heliconiaceae). Plant Systematics and Evolution, 1995, 195, 61-65.	0.9	15
95	Airâ€“water interface of submerged superhydrophobic surfaces imaged by atomic force microscopy. Beilstein Journal of Nanotechnology, 2017, 8, 1671-1679.	2.8	15
96	On the thermogenesis of the Titan arum (<i>Amorphophallus titanum</i>). Plant Signaling and Behavior, 2009, 4, 1096-1098.	2.4	14
97	Superhydrophobic and Adhesive Properties of Surfaces: Testing the Quality by an Elaborated Scanning Electron Microscopy Method. Langmuir, 2012, 28, 14338-14346.	3.5	14
98	Prey composition of the pitcher plant <i>Nepenthes madagascariensis</i>. Journal of Tropical Ecology, 2010, 26, 365-372.	1.1	13
99	Plant Cuticular Waxes: Composition, Function, and Interactions with Microorganisms. , 2018, , 1-16.		13
100	Der Lotus-Effekt: Selbstreinigende OberflÃchen und ihreÃœbertragung in die Technik. Biologie in Unserer Zeit, 2004, 34, 290-296.	0.2	10
101	Plant Surfaces: Structures and Functions for Biomimetic Applications. Springer Handbooks, 2017, , 1265-1305.	0.6	10
102	Ultraviolet patterns of flowers revealed in polymer replica â€“ caused by surface architecture. Beilstein Journal of Nanotechnology, 2019, 10, 459-466.	2.8	10
103	On the fine structure of the liquid producing floral gland of the orchid, Coryanthes speciosa. Nordic Journal of Botany, 1983, 3, 479-491.	0.5	8
104	Plant biodiversity patterns along a climatic gradient and across protected areas in West Africa. African Journal of Ecology, 2018, 56, 641-652.	0.9	7
105	Biomimetic materials. Beilstein Journal of Nanotechnology, 2011, 2, 135-136.	2.8	5
106	Plant Cuticular Waxes: Composition, Function, and Interactions with Microorganisms. , 2020, , 123-138.		5
107	The Cultivation of Titan Arum (Amorphophallus titanum) :. Sibbaldia the International Journal of Botanic Garden Horticulture, 2007, , 69-86.	0.1	4
108	Superhydrophobic Terrestrial Cyanobacteria and Land Plant Transition. Frontiers in Plant Science, 2022, 13, .	3.6	4

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109	Kinetics of solvent supported tubule formation of Lotus (Nelumbo nucifera) wax on highly oriented pyrolytic graphite (HOPG) investigated by atomic force microscopy. Beilstein Journal of Nanotechnology, 2018, 9, 468-481.	2.8	3
110	Der Lotus-Effekt: KÃ¼nstliche selbstreinigende OberflÃchen nach biologischen Vorbild. Chemie-Ingenieur-Technik, 2000, 72, 972-973.	0.8	1