

Wilhelm Barthlott

List of Publications by Year in descending order

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110
papers

13,688
citations

44042

48
h-index

26591

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.	1.6	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.	3.3	901
3	Multifunctional surface structures of plants: An inspiration for biomimetics. Progress in Materials Science, 2009, 54, 137-178.	16.0	756
4	Classification and terminology of plant epicuticular waxes. Botanical Journal of the Linnean Society, 1998, 126, 237-260.	0.8	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.	1.6	621
6	Diversity of structure, morphology and wetting of plant surfaces. Soft Matter, 2008, 4, 1943.	1.2	613
7	Fabrication of artificial Lotus leaves and significance of hierarchical structure for superhydrophobicity and low adhesion. Soft Matter, 2009, 5, 1386.	1.2	605
8	Epidermal and seed surface characters of plants: systematic applicability and some evolutionary aspects. Nordic Journal of Botany, 1981, 1, 345-355.	0.2	555
9	Superhydrophobicity in perfection: the outstanding properties of the lotus leaf. Beilstein Journal of Nanotechnology, 2011, 2, 152-161.	1.5	542
10	Global patterns of plant diversity and floristic knowledge. Journal of Biogeography, 2005, 32, 1107-1116.	1.4	467
11	Wettability and Contaminability of Insect Wings as a Function of Their Surface Sculptures. Acta Zoologica, 1996, 77, 213-225.	0.6	441
12	The <i>Salvinia</i> Paradox: Superhydrophobic Surfaces with Hydrophilic Pins for Air Retention Under Water. Advanced Materials, 2010, 22, 2325-2328.	11.1	433
13	Plant Surfaces: Structures and Functions for Biomimetic Innovations. Nano-Micro Letters, 2017, 9, 23.	14.4	304
14	The dream of staying clean: Lotus and biomimetic surfaces. Bioinspiration and Biomimetics, 2007, 2, S126-S134.	1.5	290
15	Title is missing!. Plant Ecology, 2000, 151, 19-28.	0.7	262
16	Global diversity of island floras from a macroecological perspective. Ecology Letters, 2008, 11, 116-127.	3.0	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.	0.9	234
18	Title is missing!. Plant Ecology, 2001, 152, 145-156.	0.7	182

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19	Hierarchically Sculptured Plant Surfaces and Superhydrophobicity. <i>Langmuir</i> , 2009, 25, 14116-14120.	1.6	165
20	Diversity and ecology of saxicolous vegetation mats on inselbergs in the Brazilian Atlantic rainforest. <i>Diversity and Distributions</i> , 1998, 4, 107-119.	1.9	138
21	Diversity and biogeography of vascular epiphytes in Western Amazonia, YasunÃ; Ecuador. <i>Journal of Biogeography</i> , 2004, 31, 1463-1476.	1.4	137
22	Superhydrophobic hierarchically structured surfaces in biology: evolution, structural principles and biomimetic applications. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2016, 374, 20160191.	1.6	135
23	Contrasting environmental and regional effects on global pteridophyte and seed plant diversity. <i>Ecography</i> , 2010, 33, 408-419.	2.1	134
24	Self assembly of epicuticular waxes on living plant surfaces imaged by atomic force microscopy (AFM). <i>Journal of Experimental Botany</i> , 2004, 55, 711-718.	2.4	133
25	Influences of air humidity during the cultivation of plants on wax chemical composition, morphology and leaf surface wettability. <i>Environmental and Experimental Botany</i> , 2006, 56, 1-9.	2.0	131
26	Chemistry and Crystal Growth of Plant Wax Tubules of Lotus (<i>Nelumbo nucifera</i>) and Nasturtium (<i>Tropaeolum majus</i>) Leaves on Technical Substrates. <i>Crystal Growth and Design</i> , 2006, 6, 2571-2578.	1.4	130
27	Dry under water: Comparative morphology and functional aspects of air-retaining insect surfaces. <i>Journal of Morphology</i> , 2011, 272, 442-451.	0.6	110
28	Projected impacts of climate change on regional capacities for global plant species richness. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2010, 277, 2271-2280.	1.2	100
29	Conservation of Epiphyte Diversity in an Andean Landscape Transformed by Human Land Use. <i>Conservation Biology</i> , 2009, 23, 911-919.	2.4	97
30	The significance of geographic range size for spatial diversity patterns in Neotropical palms. <i>Ecography</i> , 2006, 29, 21-30.	2.1	95
31	Velamen radicum micromorphology and classification of Orchidaceae. <i>Nordic Journal of Botany</i> , 1988, 8, 117-137.	0.2	91
32	A fast, precise and low-cost replication technique for nano- and high-aspect-ratio structures of biological and artificial surfaces. <i>Bioinspiration and Biomimetics</i> , 2008, 3, 046002.	1.5	91
33	Phylogeny of Nymphaea (Nymphaeaceae): Evidence from Substitutions and Microstructural Changes in the Chloroplast trnT-trnF Region. <i>International Journal of Plant Sciences</i> , 2007, 168, 639-671.	0.6	90
34	Superhydrophobicity of Biological and Technical Surfaces under Moisture Condensation: Stability in Relation to Surface Structure. <i>Langmuir</i> , 2008, 24, 13591-13597.	1.6	87
35	Biomimetic replicas: Transfer of complex architectures with different optical properties from plant surfaces onto technical materials. <i>Acta Biomaterialia</i> , 2009, 5, 1848-1854.	4.1	87
36	The site of β -chitin fibril formation in centric diatoms. I. Pores and fibril formation. <i>Journal of Ultrastructure Research</i> , 1979, 68, 6-15.	1.4	74

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37	Spatial Distribution of Vascular Epiphytes (including Hemiepiphytes) in a Lowland Amazonian Rain Forest (Surumoni Crane Plot) of Southern Venezuela. <i>Biotropica</i> , 2000, 32, 385.	0.8	74
38	Global moss diversity: spatial and taxonomic patterns of species richness. <i>Journal of Bryology</i> , 2013, 35, 1-11.	0.4	68
39	First protozoa-trapping plant found. <i>Nature</i> , 1998, 392, 447-447.	13.7	65
40	Superhydrophobic surfaces of the water bug <i>Notonecta glauca</i> : a model for friction reduction and air retention. <i>Beilstein Journal of Nanotechnology</i> , 2011, 2, 137-144.	1.5	65
41	The superhydrophilic and superoleophilic leaf surface of <i>Ruellia devosiana</i> (Acanthaceae): a biological model for spreading of water and oil on surfaces. <i>Functional Plant Biology</i> , 2009, 36, 339.	1.1	61
42	Biodiversity and vegetation of small-sized inselbergs in a West African rain forest (Taï, Ivory Coast). <i>Journal of Biogeography</i> , 1996, 23, 47-55.	1.4	59
43	Mikromorphologie und Orientierungsmuster epicuticularer Wachs-Kristalloide: Ein neues systematisches Merkmal bei Monokotylen. <i>Plant Systematics and Evolution</i> , 1983, 142, 171-185.	0.3	54
44	Classification of trichome types within species of the water fern <i>Salvinia</i> , and ontogeny of the egg-beater trichomes. <i>Botany</i> , 2009, 87, 830-836.	0.5	54
45	Hierarchically structured superhydrophobic flowers with low hysteresis of the wild pansy (<i>Viola</i>). <i>Journal of Nanotechnology</i> , 2011, 2, 228-236.	1.5	52
46	Phylogenetic analysis of <i>Pinguicula</i> (Lentibulariaceae): chloroplast DNA sequences and morphology support several geographically distinct radiations. <i>American Journal of Botany</i> , 2005, 92, 1723-1736.	0.8	51
47	Thermal evaporation of multi-component waxes and thermally activated formation of nanotubules for superhydrophobic surfaces. <i>Progress in Organic Coatings</i> , 2009, 66, 221-227.	1.9	51
48	Droplets on Superhydrophobic Surfaces: Visualization of the Contact Area by Cryo-Scanning Electron Microscopy. <i>Langmuir</i> , 2009, 25, 13077-13083.	1.6	51
49	What does it take to resolve relationships and to identify species with molecular markers? An example from the epiphytic Rhipsalideae (Cactaceae). <i>American Journal of Botany</i> , 2011, 98, 1549-1572.	0.8	51
50	Ultrastructure, chemical composition, and recrystallization of epicuticular waxes: transversely ridged rodlets. <i>Canadian Journal of Botany</i> , 1999, 77, 706-720.	1.2	50
51	Mikromorphologie der Samenschalen und Taxonomie der Cactaceae: Ein raster-elektronenmikroskopischer Überblick. <i>Plant Systematics and Evolution</i> , 1979, 132, 205-229.	0.3	47
52	Chemical Composition and Recrystallization of Epicuticular Waxes: Coiled Rodlets and Tubules. <i>Plant Biology</i> , 2000, 2, 462-470.	1.8	45
53	Microstructures of superhydrophobic plant leaves - inspiration for efficient oil spill cleanup materials. <i>Bioinspiration and Biomimetics</i> , 2016, 11, 056003.	1.5	45
54	Biogeography of Nymphaeales: extant patterns and historical events. <i>Taxon</i> , 2008, 57, 1123.	0.4	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.	1.5	44
56	A torch in the rain forest: thermogenesis of the Titan arum (<i>Amorphophallus titanum</i>). Plant Biology, 2009, 11, 499-505.	1.8	41
57	Superhydrophobic Vertically Aligned Carbon Nanotubes for Biomimetic Air Retention under Water (<i>Salvinia</i> Effect). Advanced Materials Interfaces, 2017, 4, 1700273.	1.9	41
58	Trap architecture in carnivorous Utricularia (Lentibulariaceae). Flora: Morphology, Distribution, Functional Ecology of Plants, 2006, 201, 597-605.	0.6	40
59	Lotus-Effect&sup>Â&sup>;: 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.	1.6	38
61	On the occurrence of a velamen radicum in Cyperaceae and Velloziaceae. Nordic Journal of Botany, 1995, 15, 625-629.	0.2	36
62	Effect of Host Tree Traits on Epiphyte Diversity in Natural and Anthropogenic Habitats in Ecuador. Biotropica, 2011, 43, 685-694.	0.8	36
63	Nature conservation: priority-setting needs a global change. Biodiversity and Conservation, 2013, 22, 1255-1281.	1.2	34
64	Micromorphology of epicuticular waxes in Centrosperms. Plant Systematics and Evolution, 1988, 161, 71-85.	0.3	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>Lymanbensoniaceae</i>. Willdenowia, 2010, 40, 151-172.	0.5	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.	0.6	32
67	Surface microstructures of daisy florets (Asteraceae) and characterization of their anisotropic wetting. Bioinspiration and Biomimetics, 2013, 8, 036005.	1.5	31
68	Nanostructure of epicuticular plant waxes: Self-assembly of wax tubules. Surface Science, 2009, 603, 1961-1968.	0.8	30
69	Elasticity of the hair cover in air-retaining Salvinia surfaces. Applied Physics A: Materials Science and Processing, 2015, 121, 505-511.	1.1	30
70	Chemistry and micromorphology of compound epicuticular wax crystalloids (Strelitzia type). Plant Systematics and Evolution, 1994, 193, 115-123.	0.3	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.	0.5	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.	5.2	29

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73	Classification and terminology of plant epicuticular waxes. <i>Botanical Journal of the Linnean Society</i> , 1998, 126, 237-260.	0.8	29
74	Dry in the Water: The Superhydrophobic Water Fern <i>Salvinia</i> – a Model for Biomimetic Surfaces. , 2009, , 97-111.		26
75	A species-poor tropical sedge community: <i>Afrotrilepis pilosa</i> mats on inselbergs in West Africa. <i>Nordic Journal of Botany</i> , 1996, 16, 239-245.	0.2	24
76	Revision of the genus <i>Genlisea</i> (Lentibulariaceae) in Africa and Madagascar with notes on ecology and phytogeography. <i>Nordic Journal of Botany</i> , 2000, 20, 291-318.	0.2	24
77	Structural and mechanical peculiarities of the petioles of giant leaves of <i>Amorphophallus</i> (Araceae). <i>American Journal of Botany</i> , 2005, 92, 391-403.	0.8	24
78	Multifunctional Plant Surfaces and Smart Materials. , 2010, , 1399-1436.		23
79	Structure and evolution of metareticulate pollen. <i>Grana</i> , 1998, 37, 68-78.	0.4	22
80	Layers of Air in the Water beneath the Floating Fern <i>Salvinia</i> are Exposed to Fluctuations in Pressure. <i>Integrative and Comparative Biology</i> , 2014, 54, 1001-1007.	0.9	22
81	Wasserabsorption durch blatt- und sprossorgane einiger Xerophyten. <i>Zeitschrift für Pflanzenphysiologie</i> , 1974, 72, 443-455.	1.4	21
82	Synthesis of (S)-Nonacosan-10-ol, the Major Component of Tubular Plant Wax Crystals. <i>European Journal of Organic Chemistry</i> , 2007, 2007, 3508-3511.	1.2	21
83	Range size and climatic niche correlate with the vulnerability of epiphytes to human land use in the tropics. <i>Journal of Biogeography</i> , 2013, 40, 963-976.	1.4	21
84	Isotopen-Markierungen und Raster-elektronenmikroskopische Untersuchungen des <i>Velameya radicum</i> der Orchideen. <i>Zeitschrift für Pflanzenphysiologie</i> , 1975, 75, 436-448.	1.4	20
85	<i>Selenicereus wittii</i> (Cactaceae): An epiphyte adapted to Amazonian <i>igapó</i> inundation forests. <i>Plant Systematics and Evolution</i> , 1997, 206, 175-185.	0.3	20
86	Crystallographic studies of plant waxes. <i>Powder Diffraction</i> , 2000, 15, 123-129.	0.4	20
87	A new bioinspired method for pressure and flow sensing based on the underwater air-retaining surface of the backswimmer <i>Notonecta</i> . <i>Beilstein Journal of Nanotechnology</i> , 2018, 9, 3039-3047.	1.5	19
88	Applying Methods from Differential Geometry to Devise Stable and Persistent Air Layers Attached to Objects Immersed in Water. <i>Journal of Bionic Engineering</i> , 2009, 6, 350-356.	2.7	18
89	The capillary adhesion technique: a versatile method for determining the liquid adhesion force and sample stiffness. <i>Beilstein Journal of Nanotechnology</i> , 2015, 6, 11-18.	1.5	18
90	First Experimental Evidence for Zoophagy in the Hepatic Colura. <i>Plant Biology</i> , 2000, 2, 93-97.	1.8	17

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91	Cyanobacteria of inselbergs in the Atlantic rainforest zone of eastern Brazil. <i>Phycologia</i> , 2002, 41, 498-506.	0.6	17
92	Bionics and Biodiversity – Bio-inspired Technical Innovation for a Sustainable Future. <i>Biologically-inspired Systems</i> , 2016, , 11-55.	0.4	17
93	<i>Staheliomyces</i> (Phallales) visited by <i>Trigona</i> (Apidae): melittophily in spore dispersal of an Amazonian stinkhorn?. <i>Journal of Tropical Ecology</i> , 1996, 12, 441-445.	0.5	16
94	Pollen-connecting threads in <i>Heliconia</i> (Heliconiaceae). <i>Plant Systematics and Evolution</i> , 1995, 195, 61-65.	0.3	15
95	Air-water interface of submerged superhydrophobic surfaces imaged by atomic force microscopy. <i>Beilstein Journal of Nanotechnology</i> , 2017, 8, 1671-1679.	1.5	15
96	On the thermogenesis of the Titan arum (<i>Amorphophallus titanum</i>). <i>Plant Signaling and Behavior</i> , 2009, 4, 1096-1098.	1.2	14
97	Superhydrophobic and Adhesive Properties of Surfaces: Testing the Quality by an Elaborated Scanning Electron Microscopy Method. <i>Langmuir</i> , 2012, 28, 14338-14346.	1.6	14
98	Prey composition of the pitcher plant <i>Nepenthes madagascariensis</i> . <i>Journal of Tropical Ecology</i> , 2010, 26, 365-372.	0.5	13
99	Plant Cuticular Waxes: Composition, Function, and Interactions with Microorganisms. , 2018, , 1-16.		13
100	Der Lotus-Effekt: Selbstreinigende Oberflächen und ihre Übertragung in die Technik. <i>Biologie in Unserer Zeit</i> , 2004, 34, 290-296.	0.3	10
101	Plant Surfaces: Structures and Functions for Biomimetic Applications. <i>Springer Handbooks</i> , 2017, , 1265-1305.	0.3	10
102	Ultraviolet patterns of flowers revealed in polymer replica – caused by surface architecture. <i>Beilstein Journal of Nanotechnology</i> , 2019, 10, 459-466.	1.5	10
103	On the fine structure of the liquid producing floral gland of the orchid, <i>Coryanthes speciosa</i> . <i>Nordic Journal of Botany</i> , 1983, 3, 479-491.	0.2	8
104	Plant biodiversity patterns along a climatic gradient and across protected areas in West Africa. <i>African Journal of Ecology</i> , 2018, 56, 641-652.	0.4	7
105	Biomimetic materials. <i>Beilstein Journal of Nanotechnology</i> , 2011, 2, 135-136.	1.5	5
106	Plant Cuticular Waxes: Composition, Function, and Interactions with Microorganisms. , 2020, , 123-138.		5
107	The Cultivation of Titan Arum (<i>Amorphophallus titanum</i>) .: <i>Sibbaldia the International Journal of Botanic Garden Horticulture</i> , 2007, , 69-86.	0.1	4
108	Superhydrophobic Terrestrial Cyanobacteria and Land Plant Transition. <i>Frontiers in Plant Science</i> , 2022, 13, .	1.7	4

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109	Kinetics of solvent supported tubule formation of Lotus (<i>Nelumbo nucifera</i>) wax on highly oriented pyrolytic graphite (HOPG) investigated by atomic force microscopy. <i>Beilstein Journal of Nanotechnology</i> , 2018, 9, 468-481.	1.5	3
110	Der Lotus-Effekt: Künstliche selbstreinigende Oberflächen nach biologischen Vorbild. <i>Chemie-Ingenieur-Technik</i> , 2000, 72, 972-973.	0.4	1