Friedrich G Barth

List of Publications by Year
in descending order

86 papers	4,362 citations	101543 36 h-index	118850 62 g-index
92 all docs	92 docs citations	92 times ranked	2897 citing authors

#	Article	IF	Citations
1	Biomaterial systems for mechanosensing and actuation. Nature, 2009, 462, 442-448.	27.8	591
2	A Spiderâ€™s World. , 2002, , .		226
3	A Spider's Fang: How to Design an Injection Needle Using Chitinâ€Based Composite Material. Advanced Functional Materials, 2012, 22, 2519-2528.	14.9	153
4	Spider mechanoreceptors. Current Opinion in Neurobiology, 2004, 14, 415-422.	4.2	139
5	Idiothetic orientation of a wandering spider: Compensation of detours and estimates of goal distance. Behavioral Ecology and Sociobiology, 1982, 11, 139-148.	1.4	115
6	Two visual systems in one brain: Neuropils serving the principal eyes of the spiderCupiennius salei. Journal of Comparative Neurology, 1993, 328, 63-75.	1.6	113
7	Two visual systems in one brain: Neuropils serving the secondary eyes of the spiderCupiennius salei. Journal of Comparative Neurology, 1993, 328, 43-62.	1.6	107
8	Ein atlas der spaltsinnesorgane von Cupiennius salei keys. Chelicerata (Araneae). Zoomorphology, 1970, 68, 343-369.	0.8	105
9	Strains in the exoskeleton of spiders. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1985, 157, 115-147.	1.6	104
10	Compound slit sense organs on the spider leg: Mechanoreceptors involved in kinesthetic orientation. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1972, 78, 176-191.	1.6	101
11	Spider senses â€“ technical perfection and biology. Zoology, 2002, 105, 271-285.	1.2	99
12	Neuroanatomy of the central nervous system of the wandering spider, Cupiennius salei (Arachnida,) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	0.8	96
13	Spider vibration receptors: Threshold curves of individual slits in the metatarsal lyriform organ. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1982, 148, 175-185.	1.6	86
14	Vibratory signals and spider behavior: How do the sensory inputs from the eight legs interact in orientation?. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1983, 152, 361-371.	1.6	76
15	Multiscale structural gradients enhance the biomechanical functionality of the spider fang. Nature Communications, 2014, 5, 3894.	12.8	76
16	Dynamics of arthropod filiform hairs. V. The response of spider trichobothria to natural stimuli. Philosophical Transactions of the Royal Society B: Biological Sciences, 1999, 354, 183-192.	4.0	74
17	Signals and cues in the recruitment behavior of stingless bees (Meliponini). Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2008, 194, 313-327.	1.6	68
18	The Vibrational Sense of Spiders. Springer Handbook of Auditory Research, 1998, , 228-278.	0.7	68

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19	Microfiber reinforcement of an arthropod cuticle. Cell and Tissue Research, 1973, 144, 409-433.	2.9	61
20	Medium Flow-Sensing Hairs: Biomechanics and Models. Advances in Insect Physiology, 2007, 34, 1-80.	2.7	55
21	The slit sense organs of arachnids. Zoomorphologie, 1976, 86, 1-23.	0.8	54
22	The release of attack and escape behavior by vibratory stimuli in a wandering spider (Cupiennim salei) Tj ETQq0 0 0 rgBT /Overlock 10 Tf Physiology, 1983, 152, 347-359.	1.6	54
23	A stingless bee marks the feeding site in addition to the scent path (Scaptotrigona aff. depilis). Apidologie, 2003, 34, 237-248.	2.0	54
24	Viscoelastic nanoscale properties of cuticle contribute to the high-pass properties of spider vibration receptor (Cupiennius salei Keys). Journal of the Royal Society Interface, 2007, 4, 1135-1143.	3.4	53
25	Die Physiologie der Spaltsinnesorgane. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1972, 81, 159-186.	1.6	52
26	Stingless bees (Meliponini): senses and behavior. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2016, 202, 597-601.	1.6	52
27	Recruitment behavior in stingless bees, Melipona scutellaris and M. quadrifasciata. II. Possible mechanisms of communication. Apidologie, 2000, 31, 93-113.	2.0	51
28	Viscosity-mediated motion coupling between pairs of trichobothria on the leg of the spider Cupiennius salei. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2005, 191, 733-746.	1.6	51
29	Spitting out information: Trigona bees deposit saliva to signal resource locations. Proceedings of the Royal Society B: Biological Sciences, 2007, 274, 895-899.	2.6	47
30	Force transformation in spider strain sensors: white light interferometry. Journal of the Royal Society Interface, 2012, 9, 1254-1264.	3.4	46
31	Lyriform slit sense organ: Thresholds and stimulus amplitude ranges in a multi-unit mechanoreceptor. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1978, 125, 37-43.	1.6	44
32	On the origin and properties of scent marks deposited at the food source by a stingless bee, Melipona seminigra. Apidologie, 2004, 35, 3-13.	2.0	44
33	Surface force spectroscopic point load measurements and viscoelastic modelling of the micromechanical properties of air flow sensitive hairs of a spider (<i>Cupiennius salei</i>). Journal of the Royal Society Interface, 2009, 6, 681-694.	3.4	44
34	A spiderâ€™s biological vibration filter: Micromechanical characteristics of a biomaterial surface. Acta Biomaterialia, 2014, 10, 4832-4842.	8.3	44
35	Die Feinstruktur des Spinneninteguments. Cell and Tissue Research, 1969, 97, 137-159.	2.9	41
36	A Stingless Bee (Melipona seminigra) Marks Food Sources with a Pheromone from Its Claw Retractor Tendons. Journal of Chemical Ecology, 2004, 30, 793-804.	1.8	41

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37	Hexyl Decanoate, the First Trail Pheromone Compound Identified in a Stingless Bee, Trigona recursa. Journal of Chemical Ecology, 2006, 32, 1555-1564.	1.8	40
38	Thoracic vibrations in stingless bees (<i>Melipona seminigra</i>):resonances of the thorax influence vibrations associated with flight but not those associated with sound production. Journal of Experimental Biology, 2008, 211, 678-685.	1.7	38
39	Die Physiologie der Spaltsinnesorgane. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1972, 78, 315-336.	1.6	36
40	Air motion sensing hairs of arthropods detect high frequencies at near-maximal mechanical efficiency. Journal of the Royal Society Interface, 2012, 9, 1131-1143.	3.4	36
41	Lyriform slit sense organs. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1975, 103, 39-54.	1.6	35
42	Vibrating the food receivers: a direct way of signal transmission in stingless bees (Melipona) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 547 T Physiology, 2006, 192, 879-887.	1.6	35
43	Mechanics to pre-process information for the fine tuning of mechanoreceptors. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2019, 205, 661-686.	1.6	35
44	Vibrationssinn und vibratorische Umwelt von Spinnen. Die Naturwissenschaften, 1986, 73, 519-530.	1.6	33
45	Collective foraging in a stingless bee: dependence on food profitability and sequence of discovery. Animal Behaviour, 2006, 72, 1309-1317.	1.9	33
46	Finite element modeling of arachnid slit sensillaâ€"I. The mechanical significance of different slit arrays. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2007, 193, 445-459.	1.6	32
47	Model studies on the mechanical significance of grouping in compound spider slit sensilla (Chelicerata, Araneida). Zoomorphology, 1984, 104, 204-215.	0.8	31
48	Micro- and nano-structural details of a spider's filter for substrate vibrations: relevance for low-frequency signal transmission. Journal of the Royal Society Interface, 2015, 12, 20141111.	3.4	31
49	Central nervous projection patterns of trichobothria and other cuticular sensilla in the wandering spider Cupiennius salei (Arachnida, Araneae). Zoomorphology, 1993, 113, 21-32.	0.8	30
50	Slit sense organs on the scorpion leg (Androctonus australis L.,Buthidae). Journal of Morphology, 1975, 145, 209-227.	1.2	29
51	Finite element modeling of arachnid slit sensilla: II. Actual lyriform organs and the face deformations of the individual slits. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2009, 195, 881-894.	1.6	29
52	Tuning of vibration sensitive neurons in the central nervous system of a wandering spider,Cupiennius salei Keys. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 1987, 160, 467-475.	1.6	28
53	Scent marks left by Nannotrigona testaceicornis at the feeding site: cues rather than signals. Apidologie, 2005, 36, 285-291.	2.0	28
54	Adaptations for Wear Resistance and Damage Resilience: Micromechanics of Spider Cuticular â€œToolsâ€• Advanced Functional Materials, 2020, 30, 2000400.	14.9	26

#	ARTICLE	IF	CITATIONS
55	Adaptations for vision in dim light: impulse responses and bumps in nocturnal spider photoreceptor cells (Cupiennius salei Keys). Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2007, 193, 1081-1087.	1.6	24
56	Morphology and structure of the tarsal glands of the stingless bee Melipona seminigra. Die Naturwissenschaften, 2005, 92, 147-150.	1.6	23
57	The sound field generated by tethered stingless bees (Melipona scutellaris): inferences on its potential as a recruitment mechanism inside the hive. Journal of Experimental Biology, 2008, 211, 686-698.	1.7	23
58	Ordering of protein and water molecules at their interfaces with chitin nano-crystals. Journal of Structural Biology, 2016, 193, 124-131.	2.8	22
59	Recruitment in a scent trail laying stingless bee (Scaptotrigonaaff.depilis): Changes with reduction but not with increase of the energy gain. Apidologie, 2006, 37, 487-500.	2.0	22
60	Intracellular recording from a spider vibration receptor. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2006, 192, 551-558.	1.6	20
61	In search of differences between the two types of sensory cells innervating spider slit sensilla (Cupiennius salei Keys.). Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2009, 195, 1031-1041.	1.6	20
62	The Physics of Arthropod Medium-Flow Sensitive Hairs: Biological Models for Artificial Sensors. , 2003, , 129-144.		20
63	Vibratory Communication in Stingless Bees (Meliponini): The Challenge of Interpreting the Signals. Animal Signals and Communication, 2014, , 349-374.	0.8	18
64	Spider joint hair sensilla: adaptation to proprioreceptive stimulation. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2015, 201, 235-248.	1.6	18
65	Micromechanical properties of strain-sensitive lyriform organs of a wandering spider (Cupiennius) Tj ETQq1 1 0.784314 rgBT /Overloc	8.3	18
66	Airflow elicits a spider's jump towards airborne prey. I. Airflow around a flying blowfly. Journal of the Royal Society Interface, 2012, 9, 2591-2602.	3.4	17
67	Spider strain detection. , 2012, , 251-273.		17
68	Airflow elicits a spider's jump towards airborne prey. II. Flow characteristics guiding behaviour. Journal of the Royal Society Interface, 2013, 10, 20120820.	3.4	15
69	The spider cuticle: a remarkable material toolbox for functional diversity. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2021, 379, 20200332.	3.4	14
70	Food profitability affects intranidal recruitment behaviour in the stingless beeNannotrigonatestaceicornis. Apidologie, 2008, 39, 260-272.	2.0	13
71	The Slightest Whiff of Air: Airflow Sensing in Arthropods. , 2014, , 169-196.		13
72	A spider in motion: facets of sensory guidance. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2021, 207, 239-255.	1.6	10

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73	Measuring strain in the exoskeleton of spidersâ€"virtues and caveats. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2021, 207, 191-204.	1.6	10
74	Arthropod Cuticular Hairs: Tactile Sensors and the Refinement of Stimulus Transformation. , 2003, , 159-171.		10
75	Pheromone paths attached to the substrate in meliponine bees: helpful but not obligatory for recruitment success. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2011, 197, 755-764.	1.6	9
76	Nectar profitability, not empty honey stores, stimulate recruitment and foraging in Melipona scutellaris (Apidae, Meliponini). Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2016, 202, 709-722.	1.6	9
77	Arthropod mechanoreceptive hairs: modeling the directionality of the joint. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2006, 192, 1271-1278.	1.6	8
78	Einstein, von Frisch and the honeybee: a historical letter comes to light. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2021, 207, 449-456.	1.6	8
79	A Spiderâ€™s Sense of Touch: What to Do with Myriads of Tactile Hairs?. , 2016, , 27-57.		6
80	Learning from animal sensors: the clever "design" of spider mechanoreceptors. Proceedings of SPIE, 2012, , .	0.8	5
81	200 volumes in 90Âyears. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2014, 200, 1-4.	1.6	4
82	Remembering Franz Huber (November 20, 1925â€"April 27, 2017), a pioneer of insect neuroethology. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2017, 203, 953-957.	1.6	1
83	Karl von Frisch lectures: the biology of sensesâ€"a contribution to integrative biology. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2003, 189, 163-163.	1.6	0
84	Hansjochem Autrum. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2004, 190, 85-89.	1.6	0
85	One of the most fascinating stories in biology. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2019, 205, 281-284.	1.6	0
86	As time passes byâ€"an editorâ€™s farewell. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2021, 207, 681-683.	1.6	0