

Alexander E Kovalev

List of Publications by Year in descending order

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94
papers

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citations

201385

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233125

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docs citations

96
times ranked

2934
citing authors

#	ARTICLE	IF	CITATIONS
1	Fabrication of Macroscopically Flexible and Highly Porous 3D Semiconductor Networks from Interpenetrating Nanostructures by a Simple Flame Transport Approach. <i>Particle and Particle Systems Characterization</i> , 2013, 30, 775-783.	1.2	278
2	Emerging Roots Alter Epidermal Cell Fate through Mechanical and Reactive Oxygen Species Signaling. <i>Plant Cell</i> , 2012, 24, 3296-3306.	3.1	145
3	Visualization of Wave Propagation and Fine Structure in Frictional Motion of Unconstrained Soft Microstructured Tapes. <i>Tribology Letters</i> , 2017, 65, 1.	1.2	95
4	Anisotropic Friction of the Ventral Scales in the Snake <i>Lampropeltis getula californiae</i> . <i>Tribology Letters</i> , 2014, 54, 139-150.	1.2	89
5	Joining the Unjoinable: Adhesion Between Low Surface Energy Polymers Using Tetrapodal ZnO Linkers. <i>Advanced Materials</i> , 2012, 24, 5676-5680.	11.1	88
6	Humidity-enhanced wet adhesion on insect-inspired fibrillar adhesive pads. <i>Nature Communications</i> , 2015, 6, 6621.	5.8	80
7	Mapping the Surface Microbiome and Metabolome of Brown Seaweed <i>Fucus vesiculosus</i> by Amplicon Sequencing, Integrated Metabolomics and Imaging Techniques. <i>Scientific Reports</i> , 2019, 9, 1061.	1.6	76
8	Adhesion Failure at 180,000 Frames per Second: Direct Observation of the Detachment Process of a Mushroom-Shaped Adhesive. <i>Physical Review Letters</i> , 2013, 111, 104301.	2.9	75
9	Reversible Adhesion Switching of Porous Fibrillar Adhesive Pads by Humidity. <i>Nano Letters</i> , 2013, 13, 5541-5548.	4.5	67
10	Wet versus dry adhesion of biomimetic mushroom-shaped microstructures. <i>Soft Matter</i> , 2012, 8, 7560.	1.2	59
11	Contact Mechanics and Friction on Dry and Wet Human Skin. <i>Tribology Letters</i> , 2013, 50, 17-30.	1.2	56
12	Male clasping ability, female polymorphism and sexual conflict: fine-scale elytral morphology as a sexually antagonistic adaptation in female diving beetles. <i>Journal of the Royal Society Interface</i> , 2013, 10, 20130409.	1.5	56
13	Generation of bioinspired structural colors via two-photon polymerization. <i>Scientific Reports</i> , 2017, 7, 17622.	1.6	48
14	Calcite Reinforced Silica-Silica Joints in the Biocomposite Skeleton of Deep-Sea Glass Sponges. <i>Advanced Functional Materials</i> , 2011, 21, 3473-3481.	7.8	43
15	Tailoring Normal Adhesion of Arrays of Thermoplastic, Spring-like Polymer Nanorods by Shaping Nanorod Tips. <i>Langmuir</i> , 2012, 28, 10781-10788.	1.6	42
16	Adhesion tilt-tolerance in bio-inspired mushroom-shaped adhesive microstructure. <i>Applied Physics Letters</i> , 2014, 104, 011906.	1.5	41
17	Mechanism of the wing colouration in the dragonfly <i>Zenithoptera lanei</i> (Odonata: Libellulidae) and its role in intraspecific communication. <i>Journal of Insect Physiology</i> , 2015, 81, 129-136.	0.9	38
18	Direct observation of microcavitation in underwater adhesion of mushroom-shaped adhesive microstructure. <i>Beilstein Journal of Nanotechnology</i> , 2014, 5, 903-909.	1.5	37

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19	Surface topography and contact mechanics of dry and wet human skin. <i>Beilstein Journal of Nanotechnology</i> , 2014, 5, 1341-1348.	1.5	36
20	Enhanced Locomotion Efficiency of a Bio-inspired Walking Robot using Contact Surfaces with Frictional Anisotropy. <i>Scientific Reports</i> , 2016, 6, 39455.	1.6	36
21	Slipping vs sticking: Water-dependent adhesive and frictional properties of <i>Linum usitatissimum</i> L. seed mucilaginous envelope and its biological significance. <i>Acta Biomaterialia</i> , 2015, 17, 152-159.	4.1	33
22	Hyaluronic Acid-Based Hydrogels Crosslinked by Copper-Catalyzed Azide-Alkyne Cycloaddition with Tailorable Mechanical Properties. <i>International Journal of Artificial Organs</i> , 2011, 34, 192-197.	0.7	32
23	Unzipping bird feathers. <i>Journal of the Royal Society Interface</i> , 2014, 11, 20130988.	1.5	32
24	Comparative study of the fluid viscosity in tarsal hairy attachment systems of flies and beetles. <i>Journal of the Royal Society Interface</i> , 2014, 11, 20140752.	1.5	32
25	Attachment ability of the southern green stink bug <i>Nezara viridula</i> (Heteroptera: Pentatomidae). <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 2017, 203, 601-611.	0.7	32
26	In vitro Induction of Residual Caries Lesions in Dentin: Comparative Mineral Loss and Nano-Hardness Analysis. <i>Caries Research</i> , 2015, 49, 259-265.	0.9	31
27	Differences in the Young modulus and hardness reflect different functions of teeth within the taenioglossan radula of gastropods. <i>Zoology</i> , 2019, 137, 125713.	0.6	30
28	Penetration mechanics of a beetle intromittent organ with bending stiffness gradient and a soft tip. <i>Science Advances</i> , 2017, 3, eaao5469.	4.7	26
29	Surface roughness of peeled adhesive tape: A mystery?. <i>Europhysics Letters</i> , 2010, 92, 46001.	0.7	25
30	More than just slippery: the impact of biofilm on the attachment of non-sessile freshwater mayfly larvae. <i>Journal of the Royal Society Interface</i> , 2014, 11, 20130989.	1.5	25
31	Contribution of different tarsal attachment devices to the overall attachment ability of the stink bug <i>Nezara viridula</i> . <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 2018, 204, 627-638.	0.7	25
32	In slow motion: radula motion pattern and forces exerted to the substrate in the land snail <i>Cornu aspersum</i> (Mollusca, Gastropoda) during feeding. <i>Royal Society Open Science</i> , 2019, 6, 190222.	1.1	24
33	Influence of water content on mechanical behaviour of gastropod taenioglossan radulae. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2021, 288, 20203173.	1.2	23
34	Variable assessment of wing colouration in aerial contests of the red-winged damselfly <i>Mnesarete pudica</i> (Zygoptera, Calopterygidae). <i>Die Naturwissenschaften</i> , 2015, 102, 13.	0.6	21
35	Kaolin nano-powder effect on insect attachment ability. <i>Journal of Pest Science</i> , 2020, 93, 315-327.	1.9	21
36	Influence of the PDMS substrate stiffness on the adhesion of <i>Acanthamoeba castellanii</i> . <i>Beilstein Journal of Nanotechnology</i> , 2014, 5, 1393-1398.	1.5	20

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37	Humidity-Modulated Core-Shell Nanopillars for Enhancement of Gecko-Inspired Adhesion. ACS Applied Nano Materials, 2020, 3, 3596-3603.	2.4	20
38	Biomimetic structural coloration with tunable degree of angle-independence generated by two-photon polymerization. Optical Materials Express, 2019, 9, 2630.	1.6	20
39	Insect wet steps: loss of fluid from insect feet adhering to a substrate. Journal of the Royal Society Interface, 2013, 10, 20120639.	1.5	19
40	Slow viscoelastic response of resilin. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2018, 204, 409-417.	0.7	19
41	Biological adhesion in seagrasses: The role of substrate roughness in <i>Posidonia oceanica</i> (L.) Delile seedling anchorage via adhesive root hairs. Marine Environmental Research, 2020, 160, 105012.	1.1	19
42	Plant Seed Mucilage as a Glue: Adhesive Properties of Hydrated and Dried-in-Contact Seed Mucilage of Five Plant Species. International Journal of Molecular Sciences, 2021, 22, 1443.	1.8	19
43	“Sticky invasion” the physical properties of <i>Plantago lanceolata</i> L. seed mucilage. Beilstein Journal of Nanotechnology, 2016, 7, 1918-1927.	1.5	18
44	A robot leg with compliant tarsus and its neural control for efficient and adaptive locomotion on complex terrains. Artificial Life and Robotics, 2016, 21, 274-281.	0.7	18
45	Estimating the maximum attachment performance of tree frogs on rough substrates. Bioinspiration and Biomimetics, 2019, 14, 025001.	1.5	17
46	Collective effect of damage prevention in taenioglossan radular teeth is related to the ecological niche in Paludomidae (Gastropoda: Cerithioidea). Acta Biomaterialia, 2021, 135, 458-472.	4.1	17
47	Male penile propulsion into spiraled spermathecal ducts of female chrysomelid beetles: A numerical simulation approach. Journal of Theoretical Biology, 2015, 384, 140-146.	0.8	16
48	Trophic specialisation reflected by radular tooth material properties in an “ancient” Lake Tanganyikan gastropod species flock. BMC Ecology and Evolution, 2021, 21, 35.	0.7	15
49	Mechanical properties of the cement of the stalked barnacle <i>Dosima fascicularis</i> (Cirripedia). Tj ETQq1 1 0.784314 rgBT /Overlo 1.5 14	1.5	14
50	Stiffness gradient of the beetle penis facilitates propulsion in the spiraled female spermathecal duct. Scientific Reports, 2016, 6, 27608.	1.6	14
51	The glue produced by <i>Drosophila melanogaster</i> for pupa adhesion is universal. Journal of Experimental Biology, 2020, 223, .	0.8	14
52	Critical roughness in animal hairy adhesive pads: a numerical modeling approach. Bioinspiration and Biomimetics, 2018, 13, 066004.	1.5	12
53	Charge Contribution to the Adhesion Performance of Polymeric Microstructures. Tribology Letters, 2012, 48, 103-109.	1.2	11
54	Numerical simulation of the pattern formation of the springtail cuticle nanostructures. Journal of the Royal Society Interface, 2018, 15, 20180217.	1.5	11

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55	Structural coloration predicts the outcome of male contests in the Amazonian damselfly <i>Chalcopteryx scintillans</i> (Odonata: Polythoridae). <i>Arthropod Structure and Development</i> , 2019, 53, 100884.	0.8	11
56	Biomechanical properties of fishing lines of the glowworm <i>Arachnocampa luminosa</i> (Diptera); Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 702	1.6	11
57	Estimation of the elastic modulus and the work of adhesion of soft materials using the extended Borodichâ€“Galanov (BG) method and depth sensing indentation. <i>Mechanics of Materials</i> , 2019, 129, 198-213.	1.7	11
58	Depth-Sensing Indentation as a Micro- and Nanomechanical Approach to Characterisation of Mechanical Properties of Soft, Biological, and Biomimetic Materials. <i>Nanomaterials</i> , 2020, 10, 15.	1.9	11
59	Structural colors with angle-insensitive optical properties generated by Morpho-inspired 2PP structures. <i>Applied Physics A: Materials Science and Processing</i> , 2020, 126, 1.	1.1	11
60	Sex-Related Effects in the Superhydrophobic Properties of Damselfly Wings in Young and Old <i>Calopteryx splendens</i> . <i>PLoS ONE</i> , 2014, 9, e88627.	1.1	11
61	Numerical Model of the Slithering Snake Locomotion Based on the Friction Anisotropy of the Ventral Skin. <i>Tribology Letters</i> , 2018, 66, 1.	1.2	10
62	Experimental testing of self-healing ability of soft polymer materials. <i>Meccanica</i> , 2019, 54, 1959-1970.	1.2	10
63	Insects use lubricants to minimize friction and wear in leg joints. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2021, 288, 20211065.	1.2	10
64	The Influence of Surface Topography and Surface Chemistry on the Anti-Adhesive Performance of Nanoporous Monoliths. <i>ACS Applied Materials & Interfaces</i> , 2016, 8, 22593-22604.	4.0	9
65	Bioinspired monolithic polymer microsphere arrays as generically anti-adhesive surfaces. <i>Bioinspiration and Biomimetics</i> , 2016, 11, 025002.	1.5	8
66	Correlation analysis of symmetry breaking in the surface nanostructure ordering: case study of the ventral scale of the snake <i>Morelia viridis</i> . <i>Applied Physics A: Materials Science and Processing</i> , 2016, 122, 1.	1.1	8
67	Inter- and intraspecific differences in leaf beetle attachment on rigid and compliant substrates. <i>Journal of Zoology</i> , 2019, 307, 1-8.	0.8	8
68	Flexibility of intraoral food processing in the salamandrid newt <i>Triturus carnifex</i> : effects of environment and prey type. <i>Journal of Experimental Biology</i> , 2020, 223, .	0.8	8
69	Magnetically Switchable Adhesion and Friction of Soft Magnetoactive Elastomers. <i>Advanced Engineering Materials</i> , 2022, 24, .	1.6	8
70	Characterization of cement float buoyancy in the stalked barnacle <i>Dosima fascicularis</i> (Crustacea, Cirripedia). <i>Interface Focus</i> , 2015, 5, 20140060.	1.5	7
71	Bio-inspired design and movement generation of dung beetle-like legs. <i>Artificial Life and Robotics</i> , 2018, 23, 555-563.	0.7	7
72	Stiffness gradients facilitate ovipositor bending and spatial probing control in a parasitic wasp. <i>Journal of Experimental Biology</i> , 2019, 222, .	0.8	7

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73	Mechanical properties of a female reproductive tract of a beetle and implications for penile penetration. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2021, 288, 20211125.	1.2	7
74	Cell wall composition determines handedness reversal in helicoidal cellulose architectures of <i>Pollia condensata</i> fruits. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	7
75	The influence of the topography and physico-chemical properties of the cuticle surface on the wettability and adhesive properties of the elytra of the dung beetle <i>Geotrupes stercorarius</i> (Coleoptera, Scarabaeidae). <i>Bioinspiration and Biomimetics</i> , 2018, 13, 016008.	1.5	6
76	The Topology of the Leg Joints of the Beetle <i>Pachnoda marginata</i> (Scarabaeidae, Cetoniinae) and Its Implication for the Tribological Properties. <i>Biomimetics</i> , 2018, 3, 12.	1.5	6
77	A dung beetle-inspired robotic model and its distributed sensor-driven control for walking and ball rolling. <i>Artificial Life and Robotics</i> , 2018, 23, 435-443.	0.7	6
78	Radular force performance of stylommatophoran gastropods (Mollusca) with distinct body masses. <i>Scientific Reports</i> , 2021, 11, 10560.	1.6	6
79	The damping properties of the foam-filled shaft of primary feathers of the pigeon <i>Columba livia</i> . <i>Die Naturwissenschaften</i> , 2022, 109, 1.	0.6	6
80	Simple contact mechanics model of the vertebrate cartilage. <i>Soft Matter</i> , 2017, 13, 6349-6362.	1.2	5
81	Adhesive Behavior of Propolis on Different Substrates. <i>Frontiers in Mechanical Engineering</i> , 2021, 7, .	0.8	5
82	Reduction in Insect Attachment Caused by Different Nanomaterials Used as Particle Films (Kaolin, Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 22	1.6	5
83	Dandelion diaspore dispersal: frictional anisotropy of cypselae of <i>Taraxacum officinale</i> enhances their interlocking with the soil. <i>Plant and Soil</i> , 2019, 440, 399-408.	1.8	4
84	Cuticular modified air sacs underlie white coloration in the olive fruit fly, <i>Bactrocera oleae</i> . <i>Communications Biology</i> , 2021, 4, 881.	2.0	4
85	Numerical model of the spatio-temporal dynamics in a water strider group. <i>Scientific Reports</i> , 2021, 11, 18047.	1.6	4
86	Air-entrapping capacity in the hair coverage of <i>Malacosoma castrensis</i> (Lasiocampidae: Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 22	0.8	3
87	Structure and Frictional Properties of the Leg Joint of the Beetle <i>Pachnoda marginata</i> (Scarabaeidae, Tj ETQq1 1 0.784314 rgBT /Overlo	1.5	3
88	Nanoporous Monolithic Microsphere Arrays Have Anti-Adhesive Properties Independent of Humidity. <i>Materials</i> , 2016, 9, 373.	1.3	2
89	Wing wettability gradient in a damselfly <i>Lestes sponsa</i> (Odonata: Lestidae) reflects the submergence behaviour during underwater oviposition. <i>Royal Society Open Science</i> , 2020, 7, 201258.	1.1	2
90	Holding on or falling off: the attachment mechanism of epiphytic <i>Anthurium obtusum</i> (Engl.) Grayum changes with substrate roughness. <i>American Journal of Botany</i> , 0, , .	0.8	2

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91	Printing structural colors via direct laser writing. , 2018, , .		1
92	Effects of a FCBP gene polymorphism, location, and sex on Young's modulus of the tenth primary feather in racing pigeons. Scientific Reports, 2022, 12, 1785.	1.6	1
93	Large River Effect or Frozen Kinetics: How Complex Nonlinear Living Systems Solve Optimization Problems. Bulletin of Mathematical Biology, 2020, 82, 93.	0.9	0
94	Adhesive performance enhancement of the mushroom-shaped microstructured elastomer by atmospheric plasma treatment. Biointerphases, 2021, 16, 041004.	0.6	0