

# Alexander E Kovalev

## List of Publications by Year in descending order

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Version: 2024-02-01

94  
papers

2,465  
citations

201385

27  
h-index

233125

45  
g-index

96  
all docs

96  
docs citations

96  
times ranked

2934  
citing authors

#	ARTICLE	IF	CITATIONS
1	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
2	Effects of a FCBP gene polymorphism, location, and sex on Youngâ€™s modulus of the tenth primary feather in racing pigeons. <i>Scientific Reports</i> , 2022, 12, 1785.	1.6	1
3	Magnetically Switchable Adhesion and Friction of Soft Magnetoactive Elastomers. <i>Advanced Engineering Materials</i> , 2022, 24, .	1.6	8
4	Plant Seed Mucilage as a Glue: Adhesive Properties of Hydrated and Dried-in-Contact Seed Mucilage of Five Plant Species. <i>International Journal of Molecular Sciences</i> , 2021, 22, 1443.	1.8	19
5	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
6	Trophic specialisation reflected by radular tooth material properties in an "ancient" Lake Tanganyikan gastropod species flock. <i>Bmc Ecology and Evolution</i> , 2021, 21, 35.	0.7	15
7	Adhesive Behavior of Propolis on Different Substrates. <i>Frontiers in Mechanical Engineering</i> , 2021, 7, .	0.8	5
8	Radular force performance of stylommatophoran gastropods (Mollusca) with distinct body masses. <i>Scientific Reports</i> , 2021, 11, 10560.	1.6	6
9	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
10	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
11	Reduction in Insect Attachment Caused by Different Nanomaterials Used as Particle Films (Kaolin,) Tj ETQq1 1 0.784314 rgBT <sub>5</sub> /Overlook	1.6	5
12	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
13	Adhesive performance enhancement of the mushroom-shaped microstructured elastomer by atmospheric plasma treatment. <i>Biointerphases</i> , 2021, 16, 041004.	0.6	0
14	Collective effect of damage prevention in taenioglossan radular teeth is related to the ecological niche in Paludomidae (Gastropoda: Cerithioidea). <i>Acta Biomaterialia</i> , 2021, 135, 458-472.	4.1	17
15	Numerical model of the spatio-temporal dynamics in a water strider group. <i>Scientific Reports</i> , 2021, 11, 18047.	1.6	4
16	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
17	Kaolin nano-powder effect on insect attachment ability. <i>Journal of Pest Science</i> , 2020, 93, 315-327.	1.9	21
18	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

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19	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
20	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
21	Large River Effect or Frozen Kinetics: How Complex Nonlinear Living Systems Solve Optimization Problems. <i>Bulletin of Mathematical Biology</i> , 2020, 82, 93.	0.9	0
22	Biological adhesion in seagrasses: The role of substrate roughness in <i>Posidonia oceanica</i> (L.) Delile seedling anchorage via adhesive root hairs. <i>Marine Environmental Research</i> , 2020, 160, 105012.	1.1	19
23	Air-entrapping capacity in the hair coverage of <i>Malacosoma castrensis</i> (Lasiocampidae). <i>Tj ETQq1 1 0.784314 rgBT /Overlock 10</i>	0.8	3
24	Humidity-Modulated Core-Shell Nanopillars for Enhancement of Gecko-Inspired Adhesion. <i>ACS Applied Nano Materials</i> , 2020, 3, 3596-3603.	2.4	20
25	Structure and Frictional Properties of the Leg Joint of the Beetle <i>Pachnoda marginata</i> (Scarabaeidae). <i>Tj ETQq1 1 0.784314 rgBT /Overlock 10</i>	1.5	3
26	The glue produced by <i>Drosophila melanogaster</i> for pupa adhesion is universal. <i>Journal of Experimental Biology</i> , 2020, 223, .	0.8	14
27	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
28	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
29	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
30	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
31	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
32	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
33	Experimental testing of self-healing ability of soft polymer materials. <i>Meccanica</i> , 2019, 54, 1959-1970.	1.2	10
34	Biomechanical properties of fishing lines of the glowworm <i>Arachnocampa luminosa</i> (Diptera). <i>Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 142</i>	1.6	11
35	Estimating the maximum attachment performance of tree frogs on rough substrates. <i>Bioinspiration and Biomimetics</i> , 2019, 14, 025001.	1.5	17
36	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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37	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
38	Estimation of the elastic modulus and the work of adhesion of soft materials using the extended Borodich-Galanov (BG) method and depth sensing indentation. <i>Mechanics of Materials</i> , 2019, 129, 198-213.	1.7	11
39	Biomimetic structural coloration with tunable degree of angle-independence generated by two-photon polymerization. <i>Optical Materials Express</i> , 2019, 9, 2630.	1.6	20
40	Slow viscoelastic response of resilin. <i>Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology</i> , 2018, 204, 409-417.	0.7	19
41	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
42	Bio-inspired design and movement generation of dung beetle-like legs. <i>Artificial Life and Robotics</i> , 2018, 23, 555-563.	0.7	7
43	Critical roughness in animal hairy adhesive pads: a numerical modeling approach. <i>Bioinspiration and Biomimetics</i> , 2018, 13, 066004.	1.5	12
44	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
45	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
46	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
47	Numerical simulation of the pattern formation of the springtail cuticle nanostructures. <i>Journal of the Royal Society Interface</i> , 2018, 15, 20180217.	1.5	11
48	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
49	Printing structural colors via direct laser writing. , 2018, , .		1
50	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
51	Simple contact mechanics model of the vertebrate cartilage. <i>Soft Matter</i> , 2017, 13, 6349-6362.	1.2	5
52	Generation of bioinspired structural colors via two-photon polymerization. <i>Scientific Reports</i> , 2017, 7, 17622.	1.6	48
53	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
54	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

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55	“Sticky invasion” the physical properties of <i>Plantago lanceolata</i> L. seed mucilage. Beilstein Journal of Nanotechnology, 2016, 7, 1918-1927.	1.5	18
56	Nanoporous Monolithic Microsphere Arrays Have Anti-Adhesive Properties Independent of Humidity. Materials, 2016, 9, 373.	1.3	2
57	Enhanced Locomotion Efficiency of a Bio-inspired Walking Robot using Contact Surfaces with Frictional Anisotropy. Scientific Reports, 2016, 6, 39455.	1.6	36
58	Bioinspired monolithic polymer microsphere arrays as generically anti-adhesive surfaces. Bioinspiration and Biomimetics, 2016, 11, 025002.	1.5	8
59	Correlation analysis of symmetry breaking in the surface nanostructure ordering: case study of the ventral scale of the snake <i>Morelia viridis</i> . Applied Physics A: Materials Science and Processing, 2016, 122, 1.	1.1	8
60	The Influence of Surface Topography and Surface Chemistry on the Anti-Adhesive Performance of Nanoporous Monoliths. ACS Applied Materials & Interfaces, 2016, 8, 22593-22604.	4.0	9
61	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
62	Stiffness gradient of the beetle penis facilitates propulsion in the spiraled female spermathecal duct. Scientific Reports, 2016, 6, 27608.	1.6	14
63	In vitro Induction of Residual Caries Lesions in Dentin: Comparative Mineral Loss and Nano-Hardness Analysis. Caries Research, 2015, 49, 259-265.	0.9	31
64	Slipping vs sticking: Water-dependent adhesive and frictional properties of <i>Linum usitatissimum</i> L. seed mucilaginous envelope and its biological significance. Acta Biomaterialia, 2015, 17, 152-159.	4.1	33
65	Mechanism of the wing colouration in the dragonfly <i>Zenithoptera lanei</i> (Odonata: Libellulidae) and its role in intraspecific communication. Journal of Insect Physiology, 2015, 81, 129-136.	0.9	38
66	Variable assessment of wing colouration in aerial contests of the red-winged damselfly <i>Mnesarete pudica</i> (Zygoptera, Calopterygidae). Die Naturwissenschaften, 2015, 102, 13.	0.6	21
67	Humidity-enhanced wet adhesion on insect-inspired fibrillar adhesive pads. Nature Communications, 2015, 6, 6621.	5.8	80
68	Mechanical properties of the cement of the stalked barnacle <i>Dosima fascicularis</i> (Cirripedia). Tj ETQq0 0 0 rgBT/Overlock 10 Tf 50	1.5	14
69	Characterization of cement float buoyancy in the stalked barnacle <i>Dosima fascicularis</i> (Crustacea, Cirripedia). Interface Focus, 2015, 5, 20140060.	1.5	7
70	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
71	Influence of the PDMS substrate stiffness on the adhesion of <i>Acanthamoeba castellanii</i> . Beilstein Journal of Nanotechnology, 2014, 5, 1393-1398.	1.5	20
72	Direct observation of microcavitation in underwater adhesion of mushroom-shaped adhesive microstructure. Beilstein Journal of Nanotechnology, 2014, 5, 903-909.	1.5	37

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73	Surface topography and contact mechanics of dry and wet human skin. Beilstein Journal of Nanotechnology, 2014, 5, 1341-1348.	1.5	36
74	Adhesion tilt-tolerance in bio-inspired mushroom-shaped adhesive microstructure. Applied Physics Letters, 2014, 104, 011906.	1.5	41
75	Unzipping bird feathers. Journal of the Royal Society Interface, 2014, 11, 20130988.	1.5	32
76	More than just slippery: the impact of biofilm on the attachment of non-sessile freshwater mayfly larvae. Journal of the Royal Society Interface, 2014, 11, 20130989.	1.5	25
77	Comparative study of the fluid viscosity in tarsal hairy attachment systems of flies and beetles. Journal of the Royal Society Interface, 2014, 11, 20140752.	1.5	32
78	Anisotropic Friction of the Ventral Scales in the Snake Lampropeltis getula californiae. Tribology Letters, 2014, 54, 139-150.	1.2	89
79	Sex-Related Effects in the Superhydrophobic Properties of Damselfly Wings in Young and Old Calopteryx splendens. PLoS ONE, 2014, 9, e88627.	1.1	11
80	Contact Mechanics and Friction on Dry and Wet Human Skin. Tribology Letters, 2013, 50, 17-30.	1.2	56
81	Adhesion Failure at 180,000 Frames per Second: Direct Observation of the Detachment Process of a Mushroom-Shaped Adhesive. Physical Review Letters, 2013, 111, 104301.	2.9	75
82	Reversible Adhesion Switching of Porous Fibrillar Adhesive Pads by Humidity. Nano Letters, 2013, 13, 5541-5548.	4.5	67
83	Fabrication of Macroscopically Flexible and Highly Porous 3D Semiconductor Networks from Interpenetrating Nanostructures by a Simple Flame Transport Approach. Particle and Particle Systems Characterization, 2013, 30, 775-783.	1.2	278
84	Male clasping ability, female polymorphism and sexual conflict: fine-scale elytral morphology as a sexually antagonistic adaptation in female diving beetles. Journal of the Royal Society Interface, 2013, 10, 20130409.	1.5	56
85	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
86	Emerging Roots Alter Epidermal Cell Fate through Mechanical and Reactive Oxygen Species Signaling. Plant Cell, 2012, 24, 3296-3306.	3.1	145
87	Charge Contribution to the Adhesion Performance of Polymeric Microstructures. Tribology Letters, 2012, 48, 103-109.	1.2	11
88	Joining the Unjoinable: Adhesion Between Low Surface Energy Polymers Using Tetrapodal ZnO Linkers. Advanced Materials, 2012, 24, 5676-5680.	11.1	88
89	Tailoring Normal Adhesion of Arrays of Thermoplastic, Spring-like Polymer Nanorods by Shaping Nanorod Tips. Langmuir, 2012, 28, 10781-10788.	1.6	42
90	Wet versus dry adhesion of biomimetic mushroom-shaped microstructures. Soft Matter, 2012, 8, 7560.	1.2	59

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91	Calcite Reinforced Silicaâ€“Silica Joints in the Biocomposite Skeleton of Deepâ€“Sea Glass Sponges. <i>Advanced Functional Materials</i> , 2011, 21, 3473-3481.	7.8	43
92	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
93	Surface roughness of peeled adhesive tape: A mystery?. <i>Europhysics Letters</i> , 2010, 92, 46001.	0.7	25
94	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