

# Shichao Niu

## List of Publications by Year in descending order

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96  
papers

3,007  
citations

185998

28  
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189595

50  
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97  
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97  
docs citations

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times ranked

2926  
citing authors

#	ARTICLE	IF	CITATIONS
1	Synergistic Photodynamic and Photothermal Antibacterial Nanocomposite Membrane Triggered by Single NIR Light Source. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 26581-26589.	4.0	166
2	Flourishing Bioinspired Antifogging Materials with Superwettability: Progresses and Challenges. <i>Advanced Materials</i> , 2018, 30, e1704652.	11.1	161
3	Biomimetic multifunctional surfaces inspired from animals. <i>Advances in Colloid and Interface Science</i> , 2016, 234, 27-50.	7.0	130
4	High-performance flexible strain sensor with bio-inspired crack arrays. <i>Nanoscale</i> , 2018, 10, 15178-15186.	2.8	115
5	Excellent Structure-Based Multifunction of Morpho Butterfly Wings: A Review. <i>Journal of Bionic Engineering</i> , 2015, 12, 170-189.	2.7	113
6	Superfast and high-sensitivity printable strain sensors with bioinspired micron-scale cracks. <i>Nanoscale</i> , 2017, 9, 1166-1173.	2.8	101
7	Active Antifogging Property of Monolayer SiO <sub>2</sub> Film with Bioinspired Multiscale Hierarchical Pagoda Structures. <i>ACS Nano</i> , 2016, 10, 8591-8602.	7.3	92
8	Ascendant bioinspired antireflective materials: Opportunities and challenges coexist. <i>Progress in Materials Science</i> , 2019, 103, 1-68.	16.0	89
9	Bioinspired, Superhydrophobic, and Paper-Based Strain Sensors for Wearable and Underwater Applications. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 1967-1978.	4.0	85
10	Near-infrared light triggered photodynamic and nitric oxide synergistic antibacterial nanocomposite membrane. <i>Chemical Engineering Journal</i> , 2021, 417, 128049.	6.6	84
11	Antireflective surface inspired from biology: A review. <i>Biosurface and Biotribology</i> , 2016, 2, 137-150.	0.6	83
12	Bioinspired, Omnidirectional, and Hypersensitive Flexible Strain Sensors. <i>Advanced Materials</i> , 2022, 34, e2200823.	11.1	73
13	Bioinspired Soft Grippers Based on Impactive Gripping. <i>Advanced Science</i> , 2021, 8, 2002017.	5.6	68
14	Flexible Self-Cleaning Broadband Antireflective Film Inspired by the Transparent Cicada Wings. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 17019-17027.	4.0	67
15	Artificial Hair-Like Sensors Inspired from Nature: A Review. <i>Journal of Bionic Engineering</i> , 2018, 15, 409-434.	2.7	55
16	Fire-safe unsaturated polyester resin nanocomposites based on MAX and MXene: a comparative investigation of their properties and mechanism of fire retardancy. <i>Dalton Transactions</i> , 2020, 49, 5803-5814.	1.6	55
17	Light trapping structures in wing scales of butterfly <i>Trogonoptera brookiana</i> . <i>Nanoscale</i> , 2012, 4, 2879.	2.8	54
18	Bio-inspired micro-nano structured surface with structural color and anisotropic wettability on Cu substrate. <i>Applied Surface Science</i> , 2016, 379, 230-237.	3.1	54

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19	Advanced bio-inspired structural materials: Local properties determine overall performance. <i>Materials Today</i> , 2020, 41, 177-199.	8.3	52
20	Energy-efficient Oil-water Separation of Biomimetic Copper Membrane with Multiscale Hierarchical Dendritic Structures. <i>Small</i> , 2017, 13, 1701121.	5.2	49
21	Erosion-Resistant Surfaces Inspired by Tamarisk. <i>Journal of Bionic Engineering</i> , 2013, 10, 479-487.	2.7	46
22	A High-Transmission, Multiple Antireflective Surface Inspired from Bilayer 3D Ultrafine Hierarchical Structures in Butterfly Wing Scales. <i>Small</i> , 2016, 12, 713-720.	5.2	46
23	Aerodynamics-assisted, efficient and scalable kirigami fog collectors. <i>Nature Communications</i> , 2021, 12, 5484.	5.8	46
24	A facile antifogging/frost-resistant coating with self-healing ability. <i>Chemical Engineering Journal</i> , 2019, 378, 122173.	6.6	40
25	Study on impact resistance behaviors of a novel composite laminate with basalt fiber for helical-sinusoidal bionic structure of dactyl club of mantis shrimp. <i>Composites Part B: Engineering</i> , 2020, 191, 107976.	5.9	36
26	Long-term durability of superhydrophobic properties of butterfly wing scales after continuous contact with water. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 2017, 518, 139-144.	2.3	35
27	An ingenious replica templated from the light trapping structure in butterfly wing scales. <i>Nanoscale</i> , 2013, 5, 8500.	2.8	34
28	Fabrication of the replica templated from butterfly wing scales with complex light trapping structures. <i>Applied Surface Science</i> , 2015, 355, 290-297.	3.1	28
29	Water-trapping and drag-reduction effects of fish <i>Ctenopharyngodon idellus</i> scales and their simulations. <i>Science China Technological Sciences</i> , 2017, 60, 1111-1117.	2.0	28
30	Characterization of Multi-scale Morphology and Superhydrophobicity of Water Bamboo Leaves and Biomimetic Polydimethylsiloxane (PDMS) Replicas. <i>Journal of Bionic Engineering</i> , 2015, 12, 624-633.	2.7	27
31	Carbon fiber@ pore-ZnO composite as anode materials for structural lithium-ion batteries. <i>Journal of Electroanalytical Chemistry</i> , 2019, 833, 39-46.	1.9	27
32	Rapid Fabrication of Bio-inspired Antireflection Film Replicating From Cicada Wings. <i>Journal of Bionic Engineering</i> , 2020, 17, 34-44.	2.7	27
33	An Efficient Bionic Anti-Erosion Functional Surface Inspired by Desert Scorpion Carapace. <i>Tribology Transactions</i> , 2015, 58, 357-364.	1.1	26
34	Integrated super-hydrophobic and antireflective PDMS bio-templated from nano-conical structures of cicada wings. <i>RSC Advances</i> , 2016, 6, 108974-108980.	1.7	26
35	Bionic anti-adhesive electrode coupled with maize leaf microstructures and TiO <sub>2</sub> coating. <i>RSC Advances</i> , 2017, 7, 45287-45293.	1.7	25
36	Near-infrared triggered antibacterial nanocomposite membrane containing upconversion nanoparticles. <i>Materials Science and Engineering C</i> , 2019, 103, 109797.	3.8	25

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37	Preparation of bionic nanostructures from butterfly wings and their low reflectivity of ultraviolet. <i>Applied Physics Letters</i> , 2013, 102, .	1.5	24
38	Unparalleled sensitivity of photonic structures in butterfly wings. <i>RSC Advances</i> , 2014, 4, 45214-45219.	1.7	24
39	Underwater writable and heat-insulated paper with robust fluorine-free superhydrophobic coatings. <i>Nanoscale</i> , 2020, 12, 8536-8545.	2.8	24
40	Light Trapping Effect in Wing Scales of Butterfly <i>Papilio peranthus</i> and Its Simulations. <i>Journal of Bionic Engineering</i> , 2013, 10, 162-169.	2.7	23
41	Active Anti-erosion Protection Strategy in Tamarisk ( <i>Tamarix aphylla</i> ). <i>Scientific Reports</i> , 2013, 3, 3429.	1.6	23
42	Ultrasensitive, Highly Stable, and Flexible Strain Sensor Inspired by Nature. <i>ACS Applied Materials &amp; Interfaces</i> , 2022, 14, 16885-16893.	4.0	23
43	The effect of the micro-structures on the scorpion surface for improving the anti-erosion performance. <i>Surface and Coatings Technology</i> , 2017, 313, 143-150.	2.2	22
44	A Selective-Response Bioinspired Strain Sensor Using Viscoelastic Material as Middle Layer. <i>ACS Nano</i> , 2021, 15, 19629-19639.	7.3	22
45	Highly Efficient Mechanoelectrical Energy Conversion Based on the Near-Tip Stress Field of an Antifracture Slit Observed in Scorpions. <i>Advanced Functional Materials</i> , 2019, 29, 1807693.	7.8	21
46	Large-Scale Bio-Inspired Flexible Antireflective Film with Scale-Insensitivity Arrays. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 23103-23112.	4.0	21
47	Bio-inspired antifogging PDMS coupled micro-pillared superhydrophobic arrays and SiO <sub>2</sub> coatings. <i>RSC Advances</i> , 2018, 8, 26497-26505.	1.7	20
48	Crack-based and Hair-like Sensors Inspired from Arthropods: A Review. <i>Journal of Bionic Engineering</i> , 2020, 17, 867-898.	2.7	20
49	Study on mechanical properties of multi-structure dactyl-inspired sandwich honeycomb with basalt fiber. <i>Composite Structures</i> , 2020, 247, 112467.	3.1	20
50	A bioinspired triboelectric nanogenerator for all state energy harvester and self-powered rotating monitor. <i>Nano Energy</i> , 2022, 91, 106637.	8.2	20
51	An Ingenious Super Light Trapping Surface Templated from Butterfly Wing Scales. <i>Nanoscale Research Letters</i> , 2015, 10, 1052.	3.1	19
52	Preparation of PAN-based carbon fiber/Co <sub>3</sub> O <sub>4</sub> composite and potential application in structural lithium-ion battery anodes. <i>Ionics</i> , 2019, 25, 5333-5340.	1.2	18
53	Bioinspired Omnidirectional Self-Stable Reflectors with Multiscale Hierarchical Structures. <i>ACS Applied Materials &amp; Interfaces</i> , 2017, 9, 29285-29294.	4.0	16
54	Flexible and highly sensitive pressure sensors based on microcrack arrays inspired by scorpions. <i>RSC Advances</i> , 2019, 9, 22740-22748.	1.7	16

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55	Progress in Bio-inspired Anti-solid Particle Erosion Materials: Learning from Nature but Going beyond Nature. Chinese Journal of Mechanical Engineering (English Edition), 2020, 33, .	1.9	16
56	Experimental investigation on impact and bending properties of a novel dactyl-inspired sandwich honeycomb with carbon fiber. Construction and Building Materials, 2020, 253, 119161.	3.2	16
57	A feather-inspired interleaf for enhanced interlaminar fracture toughness of carbon fiber reinforced polymer composites. Composites Part B: Engineering, 2022, 236, 109827.	5.9	16
58	Bioinspired Strategies for Excellent Mechanical Properties of Composites. Journal of Bionic Engineering, 2022, 19, 1203-1228.	2.7	16
59	Numerical Analysis of Erosion Caused by Biomimetic Axial Fan Blade. Advances in Materials Science and Engineering, 2013, 2013, 1-9.	1.0	15
60	Reconfigurable Fiber Triboelectric Nanogenerator for Self-Powered Defect Detection. ACS Nano, 2022, 16, 7721-7731.	7.3	15
61	Anti-adhesive property of maize leaf surface related with temperature and humidity. Journal of Bionic Engineering, 2017, 14, 540-548.	2.7	14
62	The Ingenious Structure of Scorpion Armor Inspires Sand-Resistant Surfaces. Tribology Letters, 2017, 65, 1.	1.2	14
63	Smart Bionic Surfaces with Switchable Wettability and Applications. Journal of Bionic Engineering, 2021, 18, 473-500.	2.7	14
64	Synchronous oil/water separation and wastewater treatment on a copper-oxide-coated mesh. RSC Advances, 2021, 11, 17740-17745.	1.7	13
65	Vibrational Receptor of Scorpion ( <i>Heterometrus petersii</i> ): The Basitarsal Compound Slit Sensilla. Journal of Bionic Engineering, 2019, 16, 76-87.	2.7	12
66	Broader-Band and Flexible Antireflective Films with the Window-like Structures Inspired by the Backside of Butterfly Wing Scales. ACS Applied Materials & Interfaces, 2021, 13, 19450-19459.	4.0	12
67	Angle-dependent discoloration structures in wing scales of <i>Morpho menelaus</i> butterfly. Science China Technological Sciences, 2016, 59, 749-755.	2.0	11
68	Preparation of carbon cloth supported Sn thin film for structural lithium-ion battery anodes. Journal of Electroanalytical Chemistry, 2018, 822, 17-22.	1.9	11
69	Superfast Liquid Transfer Strategy Through Sliding on a Liquid Membrane Inspired from Scorpion Setae. Advanced Materials Interfaces, 2018, 5, 1800802.	1.9	11
70	High light absorption properties and optical structures in butterfly <i>Heliophorus ila</i> Lycaenidae wing scales. RSC Advances, 2015, 5, 46011-46016.	1.7	10
71	High-aspect-ratio deflection transducers inspired by the ultra-sensitive cantilever configuration of scorpion trichobothria. Journal of Materials Chemistry C, 2020, 8, 6093-6101.	2.7	10
72	Bending Resistance and Anisotropy of Basalt Fibers Laminate Composite with Bionic Helical Structure. Journal of Bionic Engineering, 2022, 19, 799-815.	2.7	10

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73	Antifogging properties and mechanism of micron structure in Ephemera pictiventris McLachlan compound eyes. <i>Science Bulletin</i> , 2014, 59, 2039-2044.	1.7	9
74	Excellent Color Sensitivity of Butterfly Wing Scales to Liquid Mediums. <i>Journal of Bionic Engineering</i> , 2016, 13, 355-363.	2.7	9
75	Dynamically oleophobic epoxy coating with surface enriched in silicone. <i>Progress in Organic Coatings</i> , 2021, 154, 106170.	1.9	9
76	Towards high thermal stability of optical sensing materials with bio-inspired nanostructure. <i>Materials Letters</i> , 2018, 221, 26-30.	1.3	8
77	Toward the Burgeoning Optical Sensors with Ultra-Precision Hierarchical Structures Inspired by Butterflies. <i>Advanced Materials Interfaces</i> , 2021, 8, 2100142.	1.9	8
78	Biomimetic Slippery PDMS Film with Papillae-Like Microstructures for Antifogging and Self-Cleaning. <i>Coatings</i> , 2021, 11, 238.	1.2	7
79	Porous morphology and graded materials endow hedgehog spines with impact resistance and structural stability. <i>Acta Biomaterialia</i> , 2022, 147, 91-101.	4.1	7
80	Phragmites Communis Leaves with Anisotropy, Superhydrophobicity and Self-Cleaning Effect and Biomimetic Polydimethylsiloxane (PDMS) Replicas. <i>Coatings</i> , 2019, 9, 541.	1.2	6
81	An effective model for mechanical properties of nacre-inspired continuous fiber-reinforced laminated composites. <i>Mechanics of Advanced Materials and Structures</i> , 2021, 28, 1849-1857.	1.5	6
82	Cross-Scale Biological Models of Species for Future Biomimetic Composite Design: A Review. <i>Coatings</i> , 2021, 11, 1297.	1.2	6
83	Interfacial reinforced carbon fiber composites inspired by biological interlocking structure. <i>IScience</i> , 2022, 25, 104066.	1.9	6
84	Nanowires in Flexible Sensors: Structure is Becoming a Key in Controlling the Sensing Performance. <i>Advanced Materials Technologies</i> , 2022, 7, .	3.0	6
85	Replication of Papilio maackii's butterfly scale structural color using a magnetron sputtering method. <i>Science Bulletin</i> , 2012, 57, 4525-4528.	1.7	5
86	Optimum Anti-erosion Structures and Anti-erosion Mechanism for Rotatory Samples Inspired by Scorpion Armor of Parabuthus transvaalicus. <i>Journal of Bionic Engineering</i> , 2021, 18, 92-102.	2.7	5
87	Comparative Investigation on Improved Aerodynamic and Acoustic Performance of Abnormal Rotors by Bionic Edge Design and Rational Material Selection. <i>Polymers</i> , 2022, 14, 2552.	2.0	5
88	Flexible Equivalent Strain Sensor with Ordered Concentric Circular Curved Cracks Inspired by Scorpion. <i>ACS Applied Materials &amp; Interfaces</i> , 2022, 14, 29441-29450.	4.0	4
89	Bioinspired omnidirectional antireflective film with mechanical durability for efficient solar energy collection. <i>Matter</i> , 2022, 5, 2990-3008.	5.0	4
90	Fine Structure of Scorpion Pectines for Odor Capture. <i>Journal of Bionic Engineering</i> , 2017, 14, 589-599.	2.7	3

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91	A bio-inspired concept to improve crack resistance of gray cast iron. <i>Materials Letters</i> , 2018, 216, 203-206.	1.3	3
92	Mechanoelectrical Energy Conversion: Highly Efficient Mechanoelectrical Energy Conversion Based on the Near-Tip Stress Field of an Antifracture Slit Observed in Scorpions ( <i>Adv. Funct. Mater.</i> 22/2019). <i>Advanced Functional Materials</i> , 2019, 29, 1970147.	7.8	3
93	Durable and Superhydrophobic Aluminium Alloy with Microscale Hierarchical Structures and Anti-Drag Function Inspired by Diving Bell Spider. <i>Coatings</i> , 2021, 11, 1146.	1.2	3
94	A multifunctional flexible sensor with coupling bionic microstructures inspired by nature. <i>Journal of Materials Chemistry C</i> , 2022, 10, 11296-11306.	2.7	3
95	Design of a flexible bio-inspired stretch-forming machine for the fabrication of large radius bends parts. <i>International Journal of Advanced Manufacturing Technology</i> , 2020, 108, 3571-3578.	1.5	1
96	Coupled Superhydrophilic PMMA Film with Inverted Pyramid Microstructures for Antireflection and Antifogging Properties. <i>Coatings</i> , 2021, 11, 1107.	1.2	1