Xiang-Yang Liu

List of Publications by Year
in descending order

107 papers	5,876 citations	70961 41 h-index	76769 74 g-index
111 all docs	111 docs citations	111 times ranked	6830 citing authors

#	Article	IF	Citations
1	Memristor with Agâ€Clusterâ€Doped TiO₂ Films as Artificial Synapse for Neuroinspired Computing. Advanced Functional Materials, 2018, 28, 1705320.	7.8	318
2	Design of Superior Spider Silk: From Nanostructure to Mechanical Properties. Biophysical Journal, 2006, 91, 4528-4535.	0.2	305
3	Stretchable, Biocompatible, and Multifunctional Silk Fibroin-Based Hydrogels toward Wearable Strain/Pressure Sensors and Triboelectric Nanogenerators. ACS Applied Materials & Interfaces, 2020, 12, 6442-6450.	4.0	302
4	Structural Origin of the Strainâ€Hardening of Spider Silk. Advanced Functional Materials, 2011, 21, 772-778.	7.8	229
5	Control of ice nucleation: freezing and antifreeze strategies. Chemical Society Reviews, 2018, 47, 7116-7139.	18.7	215
6	Multiple Structural Coloring of Silkâ€Fibroin Photonic Crystals and Humidityâ€Responsive Color Sensing. Advanced Functional Materials, 2013, 23, 5373-5380.	7.8	196
7	Fullâ€Textile Wireless Flexible Humidity Sensor for Human Physiological Monitoring. Advanced Functional Materials, 2019, 29, 1904549.	7.8	193
8	Silk Composite Electronic Textile Sensor for High Space Precision 2D Combo Temperatureâ€“Pressure Sensing. Small, 2019, 15, e1901558.	5.2	184
9	How Does a Transient Amorphous Precursor Template Crystallization. Journal of the American Chemical Society, 2007, 129, 13520-13526.	6.6	171
10	A Biodegradable and Stretchable Proteinâ€Based Sensor as Artificial Electronic Skin for Human Motion Detection. Small, 2019, 15, e1805084.	5.2	143
11	Crystal Networks in Silk Fibrous Materials: From Hierarchical Structure to Ultra Performance. Small, 2015, 11, 1039-1054.	5.2	142
12	Recent advancements in perovskite solar cells: flexibility, stability and large scale. Journal of Materials Chemistry A, 2016, 4, 6755-6771.	5.2	137
13	Intrinsically Colored and Luminescent Silk. Advanced Materials, 2011, 23, 1463-1466.	11.1	133
14	In situ growth of CuS and Cu_{1.8}S nanosheet arrays as efficient counter electrodes for quantum dot-sensitized solar cells. Journal of Materials Chemistry A, 2015, 3, 9595-9600.	5.2	132
15	Nucleation: What Happens at the Initial Stage?. Angewandte Chemie - International Edition, 2009, 48, 1308-1312.	7.2	107
16	Stretchable and Heatâ€Resistant Proteinâ€Based Electronic Skin for Human Thermoregulation. Advanced Functional Materials, 2020, 30, 1910547.	7.8	104
17	Recent advances in quantum dot-sensitized solar cells: insights into photoanodes, sensitizers, electrolytes and counter electrodes. Sustainable Energy and Fuels, 2017, 1, 1217-1231.	2.5	103
18	Correlation between hierarchical structure of crystal networks and macroscopic performance of mesoscopic soft materials and engineering principles. Chemical Society Reviews, 2015, 44, 7881-7915.	18.7	83

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19	Recent Development of Transparent Conducting Oxideâ€Free Flexible Thinâ€Film Solar Cells. Advanced Functional Materials, 2016, 26, 8855-8884.	7.8	82
20	Hierarchical Structure of Silk Materials Versus Mechanical Performance and Mesoscopic Engineering Principles. Small, 2019, 15, e1903948.	5.2	82
21	All-Textile Electronic Skin Enabled by Highly Elastic Spacer Fabric and Conductive Fibers. ACS Applied Materials & Interfaces, 2019, 11, 33336-33346.	4.0	81
22	Mesoscopicâ€Functionalization of Silk Fibroin with Gold Nanoclusters Mediated by Keratin and Bioinspired Silk Synapse. Small, 2017, 13, 1702390.	5.2	76
23	Programing Performance of Wool Keratin and Silk Fibroin Composite Materials by Mesoscopic Molecular Network Reconstruction. Advanced Functional Materials, 2016, 26, 9032-9043.	7.8	75
24	â€œNanoâ€Fishnetâ€•Structure Making Silk Fibers Tougher. Advanced Functional Materials, 2016, 26, 5534-5541.	7.8	74
25	Silk Flexible Electronics: From <i>Bombyx mori</i> Silk Ag Nanoclusters Hybrid Materials to Mesoscopic Memristors and Synaptic Emulators. Advanced Functional Materials, 2019, 29, 1904777.	7.8	71
26	Functionalization of Silk Fibroin Materials at Mesoscale. Advanced Functional Materials, 2016, 26, 8885-8902.	7.8	70
27	Graphene decorated carbonized cellulose fabric for physiological signal monitoring and energy harvesting. Journal of Materials Chemistry A, 2020, 8, 12665-12673.	5.2	68
28	Programing Performance of Silk Fibroin Materials by Controlled Nucleation. Advanced Functional Materials, 2016, 26, 8978-8990.	7.8	64
29	Total morphosynthesis of biomimetic prismatic-type CaCO3 thin films. Nature Communications, 2017, 8, 1398.	5.8	61
30	Construction of Whiteâ€Lightâ€Emitting Silk Protein Hybrid Films by Molecular Recognized Assembly among Hierarchical Structures. Advanced Functional Materials, 2014, 24, 5284-5290.	7.8	58
31	Transparent, stretchable and degradable protein electronic skin for biomechanical energy scavenging and wireless sensing. Biosensors and Bioelectronics, 2020, 169, 112567.	5.3	57
32	Using Wool Keratin as a Basic Resist Material to Fabricate Precise Protein Patterns. Advanced Materials, 2019, 31, e1900870.	11.1	54
33	Molecular Hybrid Optical Limiting Materials from Polyhedral Oligomer Silsequioxane: Preparation and Relationship between Molecular Structure and Properties. Macromolecules, 2010, 43, 2840-2845.	2.2	49
34	Unraveled mechanism in silk engineering: Fast reeling induced silk toughening. Applied Physics Letters, 2009, 95, .	1.5	48
35	Experimental modelling of single-particle dynamic processes in crystallization by controlled colloidal assembly. Chemical Society Reviews, 2014, 43, 2324-2347.	18.7	48
36	Mesoâ€Functionalization of Silk Fibroin by Upconversion Fluorescence and Near Infrared In Vivo Biosensing. Advanced Functional Materials, 2017, 27, 1700628.	7.8	48

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37	From Molecular Reconstruction of Mesoscopic Functional Conductive Silk Fibrous Materials to Remote Respiration Monitoring. Small, 2020, 16, e2000203.	5.2	48
38	Engineering of Fluorescent Emission of Silk Fibroin Composite Materials by Material Assembly. Small, 2015, 11, 1205-1214.	5.2	47
39	Zero-sized Effect of Nano-particles and Inverse Homogeneous Nucleation. Journal of Biological Chemistry, 2004, 279, 6124-6131.	1.6	45
40	New Silk Road: From Mesoscopic Reconstruction/Functionalization to Flexible Mesoâ€Electronics/Photonics Based on Cocoon Silk Materials. Advanced Materials, 2021, 33, e2005910.	11.1	45
41	Controllable Preparation and Optical Limiting Properties of POSS-Based Functional Hybrid Nanocomposites with Different Molecular Architectures. Macromolecules, 2009, 42, 8969-8976.	2.2	42
42	Switching on Fluorescent Emission by Molecular Recognition and Aggregation Dissociation. Advanced Functional Materials, 2012, 22, 361-368.	7.8	42
43	Flexible and Insoluble Artificial Synapses Based on Chemical Crossâ€Linked Wool Keratin. Advanced Functional Materials, 2020, 30, 2002882.	7.8	42
44	Mesoâ€Reconstruction of Silk Fibroin based on Molecular and Nanoâ€Templates for Electronic Skin in Medical Applications. Advanced Functional Materials, 2021, 31, 2100150.	7.8	42
45	Stretchable, Stable, and Degradable Silk Fibroin Enabled by Mesoscopic Doping for Finger Motion Triggered Color/Transmittance Adjustment. ACS Nano, 2021, 15, 12429-12437.	7.3	42
46	Controlled Colloidal Assembly: Experimental Modeling of General Crystallization and Biomimicking of Structural Color. Advanced Functional Materials, 2012, 22, 1354-1375.	7.8	41
47	Pulsed electrochemical deposition of porous WO₃ on silver networks for highly flexible electrochromic devices. Journal of Materials Chemistry C, 2019, 7, 1966-1973.	2.7	40
48	From Mesoscopic Functionalization of Silk Fibroin to Smart Fiber Devices for Textile Electronics and Photonics. Advanced Science, 2022, 9, e2103981.	5.6	40
49	Effect of size and crystalline phase of TiO2 nanotubes on cell behaviors: A high throughput study using gradient TiO2 nanotubes. Bioactive Materials, 2020, 5, 1062-1070.	8.6	36
50	Biomimetic Salinity Power Generation Based on Silk Fibroin Ion-Exchange Membranes. ACS Nano, 2021, 15, 5649-5660.	7.3	36
51	Smart electrochromic supercapacitors based on highly stable transparent conductive graphene/CuS network electrodes. RSC Advances, 2017, 7, 29088-29095.	1.7	35
52	Design and engineering of silk fibroin scaffolds with biomimetic hierarchical structures. Chemical Communications, 2013, 49, 1431.	2.2	33
53	Highly flexible, transparent and conducting CuS-nanosheet networks for flexible quantum-dot solar cells. Nanoscale, 2017, 9, 3826-3833.	2.8	33
54	Seeded Mineralization Leads to Hierarchical CaCO₃ Thin Coatings on Fibers for Oil/Water Separation Applications. Langmuir, 2018, 34, 2942-2951.	1.6	33

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55	Controllable and large-scale fabrication of rectangular CuS network films for indium tin oxide-and Pt-free flexible dye-sensitized solar cells. Solar Energy Materials and Solar Cells, 2018, 179, 297-304.	3.0	32
56	Synthesis of hierarchical lamellar Co₃O₄â€"CoMoO₄ heterostructures for lithium-ion batteries. Journal of Materials Chemistry A, 2019, 7, 26884-26892.	5.2	31
57	Stilbeneâ€containing polyactylenes: Molecular design, synthesis, and relationship between molecular structure and NLO properties. Journal of Polymer Science Part A, 2008, 46, 4529-4541.	2.5	30
58	Ultraflexible, stretchable and fast-switching electrochromic devices with enhanced cycling stability. RSC Advances, 2018, 8, 18690-18697.	1.7	30
59	High-Throughput Screening of Rat Mesenchymal Stem Cell Behavior on Gradient TiO₂ Nanotubes. ACS Biomaterials Science and Engineering, 2018, 4, 2804-2814.	2.6	30
60	Interplay between Light and Functionalized Silk Fibroin and Applications. IScience, 2020, 23, 101035.	1.9	29
61	Thermally stable oxadiazole-containing polyacetylenes: Relationship between molecular structure and nonlinear optical properties. Journal of Materials Chemistry, 2008, 18, 4204.	6.7	28
62	A facile method to prepare a wearable pressure sensor based on fabric electrodes for human motion monitoring. Textile Reseach Journal, 2019, 89, 5144-5152.	1.1	26
63	Rational Design of Silver Gradient for Studying Size Effect of Silver Nanoparticles on Contact Killing. ACS Biomaterials Science and Engineering, 2019, 5, 425-431.	2.6	26
64	The textural properties and microstructure of konjac glucomannan â€" tungsten gels induced by DC electric fields. Food Chemistry, 2016, 212, 256-263.	4.2	24
65	Transparent conducting oxide- and Pt-free flexible photo-rechargeable electric energy storage systems. RSC Advances, 2017, 7, 52988-52994.	1.7	23
66	Controllable and large-scale fabrication of flexible ITO-free electrochromic devices by crackle pattern technology. Journal of Materials Chemistry A, 2018, 6, 19584-19589.	5.2	22
67	Fibrous inductance strain sensors for passive inductance textile sensing. Materials Today Physics, 2020, 15, 100243.	2.9	22
68	Fabrication of durable hierarchical superhydrophobic fabrics with Sichuan pepper-like structures via graft precipitation polymerization. Applied Surface Science, 2020, 529, 147017.	3.1	22
69	An efficient disposable and flexible electrochemical sensor based on a novel and stable metal carbon composite derived from cocoon silk. Biosensors and Bioelectronics, 2019, 142, 111595.	5.3	20
70	Flexible, controllable and angle-independent photoelectrochromic display enabled by smart sunlight management. Nano Energy, 2019, 63, 103830.	8.2	20
71	Tailoring the Meso-Structure of Gold Nanoparticles in Keratin-Based Activated Carbon Toward High-Performance Flexible Sensor. Nano-Micro Letters, 2020, 12, 117.	14.4	20
72	Colloidal phase transition driven by alternating electric field. Journal of Chemical Physics, 2006, 124, 124906.	1.2	19

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73	Aqueous supercapacitors based on carbonized silk electrodes. RSC Advances, 2018, 8, 22146-22153.	1.7	19
74	Primary and Secondary Mesoscopic Hybrid Materials of Au Nanoparticles@Silk Fibroin and Applications. ACS Applied Materials & Interfaces, 2019, 11, 30125-30136.	4.0	18
75	Array Integration and Farâ€Field Detection of Biocompatible Wireless LC Pressure Sensors. Small Methods, 2021, 5, e2001055.	4.6	18
76	All-in-one fibrous capacitive humidity sensor for human breath monitoring. Textile Reseach Journal, 2021, 91, 398-405.	1.1	16
77	A simple route to fiber-shaped heterojunctioned nanocomposites for knittable high-performance supercapacitors. Journal of Materials Chemistry A, 2020, 8, 11589-11597.	5.2	15
78	Recent Progress of Applying Mesoscopic Functionalization Engineering Principles to Spin Advanced Regenerated Silk Fibroin Fibers. Advanced Fiber Materials, 2022, 4, 390-403.	7.9	15
79	Flexible fiber-shaped liquid/quasi-solid-state quantum dot-sensitized solar cells based on different metal sulfide counter electrodes. Applied Physics Letters, 2018, 113, .	1.5	14
80	Programing Performance of Silk Fibroin Superstrong Scaffolds by Mesoscopic Regulation among Hierarchical Structures. Biomacromolecules, 2020, 21, 4169-4179.	2.6	14
81	Silk Fluorescence Collimator for Ultrasensitive Humidity Sensing and Lightâ€Harvesting in Semitransparent Dyeâ€Sensitized Solar Cells. Small, 2019, 15, 1804171.	5.2	12
82	A capacitive humidity sensor based on all-protein embedded with gold nanoparticles @ carbon composite for human respiration detection. Nanotechnology, 2021, 32, 19LT01.	1.3	12
83	Hot-Electron-Activated Peroxidase-Mimicking Activity of Ultrathin Pd Nanozymes. Nanoscale Research Letters, 2020, 15, 162.	3.1	12
84	Chemical Decoration of Perovskites by Nickel Oxide Doping for Efficient and Stable Perovskite Solar Cells. ACS Applied Materials & Interfaces, 2018, 10, 36841-36850.	4.0	11
85	Silk Nanococoons: Bioâ€Nanoreactors for Enzymatic Catalytic Reactions and Applications to Alcohol Intoxication. Small Science, 2021, 1, 2000049.	5.8	11
86	Design of Heterogeneous Nuclei Composed of Uniaxial Cellulose Nanocrystal Assemblies for Epitaxial Growth of Poly(Îµ-caprolactone). Macromolecules, 2017, 50, 3355-3364.	2.2	10
87	Wearable hydration and pH sensor based on protein film for healthcare monitoring. Chemical Papers, 2021, 75, 4927.	1.0	10
88	Fabrication of a uniaxial cellulose nanocrystal thin film for coassembly of single-walled carbon nanotubes. RSC Advances, 2016, 6, 39396-39400.	1.7	9
89	Design of Heterogeneous Nuclei for Lateral Crystallization via Uniaxial Assembly of Cellulose Nanocrystals. Crystal Growth and Design, 2016, 16, 4620-4626.	1.4	9
90	Rational design of coralloid Co₉S₈â€“CuS hierarchical architectures for quantum dot-sensitized solar cells. Journal of Materials Chemistry C, 2018, 6, 11384-11391.	2.7	8

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91	Ultrathin AuAg Nanofilms from Iceâ€Templated Assembly of AuAg Nanowires. Advanced Materials Interfaces, 2018, 5, 1800256.	1.9	8
92	A Novel Facile and Green Synthesis Protocol to Prepare High Strength Regenerated Silk Fibroin/SiO2 Composite Fiber. Fibers and Polymers, 2019, 20, 2222-2226.	1.1	8
93	A generic and effective strategy for highly effective â€œintrinsicâ€•molecular luminescence in the condensed state. Journal of Materials Chemistry C, 2013, 1, 5277.	2.7	7
94	Crafting NiCo2O4@Co9S8 nanotrees on carbon cloth as flexible pressure sensors for effectively monitoring human motion. Applied Nanoscience (Switzerland), 2020, 10, 861-867.	1.6	7
95	Needleâ€Leafâ€Like Cu₂Mo₆S₈ Films for Highly Efficient Visibleâ€Light Photocatalysis. Particle and Particle Systems Characterization, 2018, 35, 1700302.	1.2	6
96	Transient bioelectrical devices inspired by a silkworm moth breaking out of its cocoon. RSC Advances, 2019, 9, 14254-14259.	1.7	6
97	Can the pathway of stepwise nucleation be predicted and controlled?. Physical Chemistry Chemical Physics, 2019, 21, 7398-7405.	1.3	6
98	Controlled Modulation of Surface Coating and Surface Charging on Quantum Dots with Negatively Charged Gelatin for Substantial Enhancement and Reversible Switching in Photoluminescence. Advanced Functional Materials, 2016, 26, 8991-8998.	7.8	5
99	Aluminum ion electrolyte for enhanced electrochromism of polyaniline. AIP Conference Proceedings, 2017, , .	0.3	5
100	Correlations of crystal shape and lateral orientation in bioinspired CaCO₃mineralization. CrystEngComm, 2018, 20, 5241-5248.	1.3	5
101	Synergistic effect of crystalline phase on protein adsorption and cell behaviors on TiO2 nanotubes. Applied Nanoscience (Switzerland), 2020, 10, 3245-3257.	1.6	5
102	Enhanced mechanical performance of biocompatible silk fibroin films through mesoscopic construction of hierarchical structures. Textile Reseach Journal, 2021, 91, 1146-1154.	1.1	3
103	Smart power system of biocompatible and flexible micro-supercapacitor. Applied Physics Letters, 2021, 118, .	1.5	3
104	Controlled Colloidal Assembly. , 2015, , 561-594.		2
105	Polyfluorenylacetylene for near-infrared laser protection: polymer synthesis, optical limiting mechanism and relationship between molecular structure and properties. RSC Advances, 2017, 7, 53785-53796.	1.7	1
106	Data analysis between controllable variables and the performance of CuS crackle based electrode. Data in Brief, 2018, 17, 1331-1335.	0.5	1
107	Another look at the role of trapped air in cell adhesion on superhydrophobic materials. Applied Nanoscience (Switzerland), 2020, 10, 243-251.	1.6	0