Xiang-yang Liu

List of Publications by Year
in descending order

126	5,695	66343	82547
papers	citations	42 h-index	72 g-index

144	144	144	7015
all docs	docs citations	times ranked	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.	14.9	318
2	Design of Superior Spider Silk: From Nanostructure to Mechanical Properties. Biophysical Journal, 2006, 91, 4528-4535.	0.5	305
3	Structural Origin of the Strainâ€Hardening of Spider Silk. Advanced Functional Materials, 2011, 21, 772-778.	14.9	229
4	Multiple Structural Coloring of Silkâ€Fibroin Photonic Crystals and Humidityâ€Responsive Color Sensing. Advanced Functional Materials, 2013, 23, 5373-5380.	14.9	196
5	Fullâ€Textile Wireless Flexible Humidity Sensor for Human Physiological Monitoring. Advanced Functional Materials, 2019, 29, 1904549.	14.9	193
6	Silk Composite Electronic Textile Sensor for High Space Precision 2D Combo Temperatureâ€“Pressure Sensing. Small, 2019, 15, e1901558.	10.0	184
7	A Hydrogel of Ultrathin Pure Polyaniline Nanofibers: Oxidant-Templating Preparation and Supercapacitor Application. ACS Nano, 2018, 12, 5888-5894.	14.6	177
8	Architecture of Supramolecular Soft Functional Materials: From Understanding to Microâ€/Nanoscale Engineering. Advanced Functional Materials, 2010, 20, 3196-3216.	14.9	154
9	Hydroxyapatite: Hexagonal or Monoclinic?. Crystal Growth and Design, 2009, 9, 2991-2994.	3.0	144
10	Crystal Networks in Silk Fibrous Materials: From Hierarchical Structure to Ultra Performance. Small, 2015, 11, 1039-1054.	10.0	142
11	Intrinsically Colored and Luminescent Silk. Advanced Materials, 2011, 23, 1463-1466.	21.0	133
12	Stretchable and Heatâ€Resistant Proteinâ€Based Electronic Skin for Human Thermoregulation. Advanced Functional Materials, 2020, 30, 1910547.	14.9	104
13	Creating New Supramolecular Materials by Architecture of Three-Dimensional Nanocrystal Fiber Networks. Journal of the American Chemical Society, 2002, 124, 15055-15063.	13.7	103
14	Removal of organic micro-pollutants (phenol, aniline and nitrobenzene) via forward osmosis (FO) process: Evaluation of FO as an alternative method to reverse osmosis (RO). Water Research, 2016, 91, 104-114.	11.3	99
15	Electrically Adjustable, Super Adhesive Force of a Superhydrophobic Aligned MnO₂ Nanotube Membrane. Advanced Functional Materials, 2011, 21, 184-190.	14.9	85
16	Shape-controlled syntheses of rhodium nanocrystals for the enhancement of their catalytic properties. Nano Research, 2015, 8, 82-96.	10.4	84
17	Correlation between hierarchical structure of crystal networks and macroscopic performance of mesoscopic soft materials and engineering principles. Chemical Society Reviews, 2015, 44, 7881-7915.	38.1	83
18	Recent Development of Transparent Conducting Oxideâ€Free Flexible Thinâ€Film Solar Cells. Advanced Functional Materials, 2016, 26, 8855-8884.	14.9	82

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19	Hierarchical Structure of Silk Materials Versus Mechanical Performance and Mesoscopic Engineering Principles. Small, 2019, 15, e1903948.	10.0	82
20	Crosslinked waterborne polyurethane with high waterproof performance. Polymer Chemistry, 2016, 7, 3913-3922.	3.9	81
21	Mesoscopicâ€Functionalization of Silk Fibroin with Gold Nanoclusters Mediated by Keratin and Bioinspired Silk Synapse. Small, 2017, 13, 1702390.	10.0	76
22	Programing Performance of Wool Keratin and Silk Fibroin Composite Materials by Mesoscopic Molecular Network Reconstruction. Advanced Functional Materials, 2016, 26, 9032-9043.	14.9	75
23	â€œNanoâ€Fishnetâ€•Structure Making Silk Fibers Tougher. Advanced Functional Materials, 2016, 26, 5534-5541.	14.9	74
24	A Convenient Organicâ€“Inorganic Hybrid Approach Toward Highly Stable Squaraine Dyes with Reduced Hâ€Aggregation. Advanced Functional Materials, 2012, 22, 345-352.	14.9	73
25	Engineered Large Spider Eggcase Silk Protein for Strong Artificial Fibers. Advanced Materials, 2013, 25, 1216-1220.	21.0	71
26	Silk Flexible Electronics: From Bombyx mori Silk Ag Nanoclusters Hybrid Materials to Mesoscopic Memristors and Synaptic Emulators. Advanced Functional Materials, 2019, 29, 1904777.	14.9	71
27	Functionalization of Silk Fibroin Materials at Mesoscale. Advanced Functional Materials, 2016, 26, 8885-8902.	14.9	70
28	Protein-Directed Synthesis of Bifunctional Adsorbent-Catalytic Hemin-Graphene Nanosheets for Highly Efficient Removal of Dye Pollutants via Synergistic Adsorption and Degradation. ACS Applied Materials & Interfaces, 2017, 9, 684-692.	8.0	69
29	Graphene decorated carbonized cellulose fabric for physiological signal monitoring and energy harvesting. Journal of Materials Chemistry A, 2020, 8, 12665-12673.	10.3	68
30	Programing Performance of Silk Fibroin Materials by Controlled Nucleation. Advanced Functional Materials, 2016, 26, 8978-8990.	14.9	64
31	Construction of Whiteâ€Lightâ€Emitting Silk Protein Hybrid Films by Molecular Recognized Assembly among Hierarchical Structures. Advanced Functional Materials, 2014, 24, 5284-5290.	14.9	58
32	Using Wool Keratin as a Basic Resist Material to Fabricate Precise Protein Patterns. Advanced Materials, 2019, 31, e1900870.	21.0	54
33	Comparative Study of Strainâ€Dependent Structural Changes of Silkworm Silks: Insight into the Structural Origin of Strainâ€Stiffening. Small, 2017, 13, 1702266.	10.0	53
34	Tailoring NiCoAl layered double hydroxide nanosheets for assembly of high-performance asymmetric supercapacitors. Journal of Colloid and Interface Science, 2021, 583, 722-733.	9.4	49
35	Nearâ€Infrared Light Triggered Silk Fibroin Scaffold for Photothermal Therapy and Tissue Repair of Bone Tumors. Advanced Functional Materials, 2021, 31, 2007188.	14.9	49
36	Unraveled mechanism in silk engineering: Fast reeling induced silk toughening. Applied Physics Letters, 2009, 95, .	3.3	48

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37	Experimental modelling of single-particle dynamic processes in crystallization by controlled colloidal assembly. Chemical Society Reviews, 2014, 43, 2324-2347.	38.1	48
38	Mesoâ€Functionalization of Silk Fibroin by Upconversion Fluorescence and Near Infrared In Vivo Biosensing. Advanced Functional Materials, 2017, 27, 1700628.	14.9	48
39	From Molecular Reconstruction of Mesoscopic Functional Conductive Silk Fibrous Materials to Remote Respiration Monitoring. Small, 2020, 16, e2000203.	10.0	48
40	Determination of the Fractal Characteristic of Nanofiber-Network Formation in Supramolecular Materials. ChemPhysChem, 2002, 3, 374-377.	2.1	47
41	Structural engineering of waterborne polyurethane for high performance waterproof coatings. RSC Advances, 2015, 5, 72544-72552.	3.6	47
42	Zero-sized Effect of Nano-particles and Inverse Homogeneous Nucleation. Journal of Biological Chemistry, 2004, 279, 6124-6131.	3.4	45
43	New Silk Road: From Mesoscopic Reconstruction/Functionalization to Flexible Mesoâ€Electronics/Photonics Based on Cocoon Silk Materials. Advanced Materials, 2021, 33, e2005910.	21.0	45
44	Recent advances in nanoparticulate biomimetic catalysts for combating bacteria and biofilms. Nanoscale, 2019, 11, 22206-22215.	5.6	43
45	Switching on Fluorescent Emission by Molecular Recognition and Aggregation Dissociation. Advanced Functional Materials, 2012, 22, 361-368.	14.9	42
46	Flexible and Insoluble Artificial Synapses Based on Chemical Crossâ€Linked Wool Keratin. Advanced Functional Materials, 2020, 30, 2002882.	14.9	42
47	Mesoâ€Reconstruction of Silk Fibroin based on Molecular and Nanoâ€Templates for Electronic Skin in Medical Applications. Advanced Functional Materials, 2021, 31, 2100150.	14.9	42
48	Stretchable, Stable, and Degradable Silk Fibroin Enabled by Mesoscopic Doping for Finger Motion Triggered Color/Transmittance Adjustment. ACS Nano, 2021, 15, 12429-12437.	14.6	42
49	Controlled Colloidal Assembly: Experimental Modeling of General Crystallization and Biomimicking of Structural Color. Advanced Functional Materials, 2012, 22, 1354-1375.	14.9	41
50	Electrically Directed Onâ€Chip Reversible Patterning of Twoâ€Dimensional Tunable Colloidal Structures. Advanced Functional Materials, 2008, 18, 802-809.	14.9	40
51	Pulsed electrochemical deposition of porous WO₃ on silver networks for highly flexible electrochromic devices. Journal of Materials Chemistry C, 2019, 7, 1966-1973.	5.5	40
52	From Mesoscopic Functionalization of Silk Fibroin to Smart Fiber Devices for Textile Electronics and Photonics. Advanced Science, 2022, 9, e2103981.	11.2	40
53	Design and architecture of low-dielectric-constant organicâ€“inorganic hybrids from octahydridosilsesquioxanes. Journal of Materials Chemistry, 2009, 19, 9038.	6.7	39
54	From Amorphous Macroporous Film to 3D Crystalline Nanorod Architecture: A New Approach to Obtain Highâ€Performance V₂O₅ Electrochromism. Advanced Materials Interfaces, 2015, 2, 1500230.	3.7	38

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55	Biomimetic Salinity Power Generation Based on Silk Fibroin Ion-Exchange Membranes. ACS Nano, 2021, 15, 5649-5660.	14.6	36
56	UV-curable pressure sensitive adhesive films: effects of biocompatible plasticizers on mechanical and adhesion properties. Soft Matter, 2013, 9, 6270.	2.7	35
57	Crystal networks in supramolecular gels: formation kinetics and mesoscopic engineering principles. CrystEngComm, 2015, 17, 7986-8010.	2.6	35
58	Smart electrochromic supercapacitors based on highly stable transparent conductive graphene/CuS network electrodes. RSC Advances, 2017, 7, 29088-29095.	3.6	35
59	Design and engineering of silk fibroin scaffolds with biomimetic hierarchical structures. Chemical Communications, 2013, 49, 1431.	4.1	33
60	Seeded Mineralization Leads to Hierarchical CaCO₃ Thin Coatings on Fibers for Oil/Water Separation Applications. Langmuir, 2018, 34, 2942-2951.	3.5	33
61	Rheological properties and formation mechanism of DC electric fields induced konjac glucomannan-tungsten gels. Carbohydrate Polymers, 2016, 142, 293-299.	10.2	30
62	Recent Advances in Patterning Natural Polymers: From Nanofabrication Techniques to Applications. Small Methods, 2021, 5, e2001060.	8.6	29
63	Coupling of Silk Fibroin Nanofibrils Enzymatic Membrane with Ultraâ€Thin PtNPs/Graphene Film to Acquire Long and Stable Onâ€Skin Sweat Glucose and Lactate Sensing. Small Methods, 2021, 5, e2000926.	8.6	28
64	Achieving High-Performance Surface-Enhanced Raman Scattering through One-Step Thermal Treatment of Bulk MoS₂. Journal of Physical Chemistry C, 2018, 122, 14467-14473.	3.1	25
65	Polydopamineâ€Induced Multilevel Engineering of Regenerated Silk Fibroin Fiber for Photothermal Conversion. Small, 2022, 18, e2107196.	10.0	24
66	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.	10.1	20
67	Tailoring the Meso-Structure of Gold Nanoparticles in Keratin-Based Activated Carbon Toward High-Performance Flexible Sensor. Nano-Micro Letters, 2020, 12, 117.	27.0	20
68	Effect of microgravity on Ca mineral crystallization and implications for osteoporosis in space. Applied Physics Letters, 2001, 79, 3539-3541.	3.3	19
69	Size invariance of fibrous networks of supramolecular soft materials during formation under critical volume confinement. Soft Matter, 2012, 8, 5187.	2.7	19
70	Using Inorganic Nanomaterials to Endow Biocatalytic Systems with Unique Features. Trends in Biotechnology, 2016, 34, 303-315.	9.3	18
71	Memristors: Memristor with Agâ€Clusterâ€Doped TiO₂ Films as Artificial Synapse for Neuroinspired Computing (Adv. Funct. Mater. 1/2018). Advanced Functional Materials, 2018, 28, 1870002.	14.9	18
72	Primary and Secondary Mesoscopic Hybrid Materials of Au Nanoparticles@Silk Fibroin and Applications. ACS Applied Materials & Interfaces, 2019, 11, 30125-30136.	8.0	18

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73	Volume confinement induced microstructural transitions and property enhancements of supramolecular soft materials. Soft Matter, 2011, 7, 1708-1713.	2.7	17
74	Effect of Long-Range Attraction on Growth Model. Journal of Physical Chemistry C, 2007, 111, 1342-1346.	3.1	16
75	Identify kinetic features of fibers growing, branching, and bundling in microstructure engineering of crystalline fiber network. CrystEngComm, 2014, 16, 5402.	2.6	16
76	All-in-one fibrous capacitive humidity sensor for human breath monitoring. Textile Reseach Journal, 2021, 91, 398-405.	2.2	16
77	Remote activation of nanoparticulate biomimetic activity by light triggered pH-jump. Chemical Communications, 2018, 54, 8641-8644.	4.1	15
78	Flexible and disposable gold nanoparticles-N-doped carbon-modified electrochemical sensor for simultaneous detection of dopamine and uric acid. Nanotechnology, 2021, 32, 065502.	2.6	15
79	Reinforcement of Silk Microneedle Patches for Accurate Transdermal Delivery. Biomacromolecules, 2021, 22, 5319-5326.	5.4	15
80	Recent Progress of Applying Mesoscopic Functionalization Engineering Principles to Spin Advanced Regenerated Silk Fibroin Fibers. Advanced Fiber Materials, 2022, 4, 390-403.	16.1	15
81	A Review on Terpenes as Skin Penetration Enhancers in Transdermal Drug Delivery. Journal of Essential Oil Research, 2009, 21, 423-428.	2.7	14
82	Direct Growth of Microspheres on Amorphous Precursor Domains in Polymer-Controlled Crystallization of Indomethacin. Crystal Growth and Design, 2016, 16, 1428-1434.	3.0	14
83	Programing Performance of Silk Fibroin Superstrong Scaffolds by Mesoscopic Regulation among Hierarchical Structures. Biomacromolecules, 2020, 21, 4169-4179.	5.4	14
84	Reconstructed silk fibroin mediated smart wristband for physiological signal detection. Chemical Engineering Journal, 2022, 428, 132362.	12.7	14
85	Elevating Biomedical Performance of ZnO/SiO₂@Amorphous Calcium Phosphate â€• Bioinspiration Making Possible the Impossible. Advanced Functional Materials, 2016, 26, 6921-6929.	14.9	13
86	A capacitive humidity sensor based on all-protein embedded with gold nanoparticles @ carbon composite for human respiration detection. Nanotechnology, 2021, 32, 19LT01.	2.6	12
87	Subcutaneous Energy/Signal Transmission Based on Silk Fibroin Up-Conversion Photonic Amplification. ACS Nano, 2021, 15, 9559-9567.	14.6	12
88	Silk Nanococoons: Bioâ€Nanoreactors for Enzymatic Catalytic Reactions and Applications to Alcohol Intoxication. Small Science, 2021, 1, 2000049.	9.9	11
89	Electrochromic performance of WO₃films: optimization by crystal network topology modification. CrystEngComm, 2015, 17, 6583-6590.	2.6	10
90	Design of Heterogeneous Nuclei Composed of Uniaxial Cellulose Nanocrystal Assemblies for Epitaxial Growth of Poly(Îµ-caprolactone). Macromolecules, 2017, 50, 3355-3364.	4.8	10

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91	Green Synthesis of Waterborne Polyurethane for High Damping Capacity. Macromolecular Chemistry and Physics, 2021, 222, 2000457.	2.2	10
92	Nano-Architecture by Molecular Structure-Directing Agent. Chemistry of Materials, 2008, 20, 2432-2434.	6.7	9
93	Design of Heterogeneous Nuclei for Lateral Crystallization via Uniaxial Assembly of Cellulose Nanocrystals. Crystal Growth and Design, 2016, 16, 4620-4626.	3.0	9
94	A nanoneedle-based reactional wettability variation sensor array for on-site detection of metal ions with a smartphone. Journal of Colloid and Interface Science, 2019, 547, 330-338.	9.4	8
95	Resonant photoemission study of single-strand deoxyribonucleic acid. Applied Physics Letters, 2006, 89, 013902.	3.3	7
96	Facile Onâ€Site Detection Based on Reactional Wettability Variation. Advanced Materials Interfaces, 2018, 5, 1701326.	3.7	7
97	Wool Keratin Photolithography as an Eco-Friendly Route to Fabricate Protein Microarchitectures. ACS Applied Bio Materials, 2020, 3, 2891-2896.	4.6	7
98	Fast dopamine detection based on evanescent wave detection platform. Analytica Chimica Acta, 2022, 1191, 339312.	5.4	7
99	Assembling Twoâ€Phase Enzymatic Cascade Pathways in Pickering Emulsion. ChemCatChem, 2019, 11, 1878-1883.	3.7	6
100	Recent advances in silk-based wearable sensors. Wuli Xuebao/Acta Physica Sinica, 2020, 69, 178703.	0.5	6
101	Silk Fibroinâ€Based Flexible Organic Lightâ€Emitting Diode with High Light Extraction Efficiency. Advanced Optical Materials, 2022, 10, .	7.3	6
102	Correlations of crystal shape and lateral orientation in bioinspired CaCO₃mineralization. CrystEngComm, 2018, 20, 5241-5248.	2.6	5
103	Highly flexible and high energy density fiber supercapacitors based upon spiral silk composite membranes encapsulation. Electrochimica Acta, 2022, 404, 139611.	5.2	5
104	Biomimetic synthesis of 2D ultra-small copper sulfide nanoflakes based on reconfiguration of the keratin secondary structure for cancer theranostics in the NIR-II region. Journal of Materials Chemistry B, 2022, 10, 3152-3161.	5.8	5
105	Influence of nucleation nature on Ca mineral/substrate structural synergy and implications for biomineralization in microgravity. Journal of Chemical Physics, 2001, 115, 9970-9974.	3.0	4
106	KINETIC STUDIES OF SPHERULITIC CRYSTALLIZATION IN THE GELATION PROCESS OF LOW MOLECULAR-MASS ORGANIC GELATOR. International Journal of Nanoscience, 2006, 05, 645-649.	0.7	4
107	Highly efficient and stable solid-state luminescent nanohybrids: Precise architecture and enhancement mechanism. Journal of Materials Research, 2013, 28, 1061-1069.	2.6	4
108	From Templated Nucleation to Functional Materials Engineering. AIP Conference Proceedings, 2007, , .	0.4	3

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109	Architecture of Supramolecular Soft Functional Materials: From Understanding to Microâ€Nanoscale Engineering. Advanced Functional Materials, 2010, 20, .	14.9	3
110	Graphical analysis of mammalian cell adhesion in vitro. Colloids and Surfaces B: Biointerfaces, 2016, 148, 211-219.	5.0	3
111	Pressing Carbon Nanotubes Triggers Better Ion Selectivity. Journal of Physical Chemistry C, 2017, 121, 19512-19518.	3.1	3
112	Wettability read-out strategy for aptamer target binding based on a recognition/hydrophobic bilayer surface. Chemical Communications, 2020, 56, 6225-6228.	4.1	3
113	Enhanced mechanical performance of biocompatible silk fibroin films through mesoscopic construction of hierarchical structures. Textile Reseach Journal, 2021, 91, 1146-1154.	2.2	3
114	Research progress of protein-based memristor. Wuli Xuebao/Acta Physica Sinica, 2020, 69, 178702.	0.5	3
115	Solar Cells: Recent Development of Transparent Conducting Oxide-Free Flexible Thin-Film Solar Cells (Adv. Funct. Mater. 48/2016). Advanced Functional Materials, 2016, 26, 8854-8854.	14.9	2
116	Advances in Soft Functional Materials Research. Advanced Functional Materials, 2016, 26, 8807-8809.	14.9	2
117	Enzymatic manipulation of a DNA-mediated ensemble for sensitive fluorescence detection of glucose. RSC Advances, 2016, 6, 33132-33137.	3.6	2
118	Proteinâ€Based Electronics: A Biodegradable and Stretchable Proteinâ€Based Sensor as Artificial Electronic Skin for Human Motion Detection (Small 11/2019). Small, 2019, 15, 1970057.	10.0	2
119	High voltage output/energy density flexible asymmetric fiber supercapacitors based on a tree-like topology. Cell Reports Physical Science, 2021, 2, 100649.	5.6	2
120	Simulating â€œAtomicâ€•Processes of Crystallization via Controlled Colloidal Assembly. , 2010, , .		1
121	Mechanical Properties: Programing Performance of Silk Fibroin Materials by Controlled Nucleation (Adv. Funct. Mater. 48/2016). Advanced Functional Materials, 2016, 26, 9084-9084.	14.9	1
122	Silk Materials: Hierarchical Structure of Silk Materials Versus Mechanical Performance and Mesoscopic Engineering Principles (Small 51/2019). Small, 2019, 15, 1970280.	10.0	1
123	Strain Sensors: Mesoâ€Reconstruction of Wool Keratin 3D â€œMolecular Springsâ€•for Tunable Ultraâ€Sensitive and Highly Recovery Strain Sensors (Small 24/2020). Small, 2020, 16, 2070136.	10.0	1
124	Soft Matter: From Structure to Functionality. Small, 2015, 11, 1022-1023.	10.0	0
125	Assembling Twoâ€Phase Enzymatic Cascade Pathways in Pickering Emulsion. ChemCatChem, 2019, 11, 1791-1791.	3.7	0
126	Fluorescence: Silk Fluorescence Collimator for Ultrasensitive Humidity Sensing and Lightâ€Harvesting in Semitransparent Dyeâ€Sensitized Solar Cells (Small 13/2019). Small, 2019, 15, 1970069.	10.0	0