

# Shuyan Xu

## List of Publications by Citations

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111  
papers

3,016  
citations

32  
h-index

51  
g-index

121  
ext. papers

3,450  
ext. citations

6.1  
avg. IF

5.45  
L-index

#	Paper	IF	Citations
111	Inductively coupled Ar/CH <sub>4</sub> /H <sub>2</sub> plasmas for low-temperature deposition of ordered carbon nanostructures. <i>Journal of Applied Physics</i> , <b>2004</b> , 95, 2713-2724	2.5	229
110	Low-frequency, high-density, inductively coupled plasma sources: Operation and applications. <i>Physics of Plasmas</i> , <b>2001</b> , 8, 2549-2557	2.1	172
109	Space micropropulsion systems for Cubesats and small satellites: From proximate targets to furthestmost frontiers. <i>Applied Physics Reviews</i> , <b>2018</b> , 5, 011104	17.3	160
108	Recent progress and perspectives of space electric propulsion systems based on smart nanomaterials. <i>Nature Communications</i> , <b>2018</b> , 9, 879	17.4	121
107	Perspectives, frontiers, and new horizons for plasma-based space electric propulsion. <i>Physics of Plasmas</i> , <b>2020</b> , 27, 020601	2.1	80
106	Hierarchical Multicomponent Inorganic Metamaterials: Intrinsically Driven Self-Assembly at the Nanoscale. <i>Advanced Materials</i> , <b>2018</b> , 30, 1702226	24	77
105	Deterministic plasma-aided synthesis of high-quality nanoislanded nc-SiC films. <i>Applied Physics Letters</i> , <b>2007</b> , 90, 173112	3.4	75
104	Rapid, low-temperature synthesis of nc-Si in high-density, non-equilibrium plasmas: enabling nanocrystallinity at very low hydrogen dilution. <i>Journal of Materials Chemistry</i> , <b>2009</b> , 19, 5134		72
103	Self-organized vertically aligned single-crystal silicon nanostructures with controlled shape and aspect ratio by reactive plasma etching. <i>Applied Physics Letters</i> , <b>2009</b> , 95, 111505	3.4	71
102	Structure, bonding state and in-vitro study of CaF <sub>2</sub> film deposited on Ti6Al4V by RF magnetron sputtering. <i>Materials Science and Engineering C</i> , <b>2002</b> , 20, 175-180	8.3	67
101	Structural evolution of nanocrystalline silicon thin films synthesized in high-density, low-temperature reactive plasmas. <i>Nanotechnology</i> , <b>2009</b> , 20, 215606	3.4	66
100	Integrated plasma-aided nanofabrication facility: Operation, parameters, and assembly of quantum structures and functional nanomaterials. <i>Vacuum</i> , <b>2006</b> , 80, 621-630	3.7	65
99	Advanced Materials for Next-Generation Spacecraft. <i>Advanced Materials</i> , <b>2018</b> , 30, e1802201	24	62
98	Low-temperature plasmas in carbon nanostructure synthesis. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , <b>2013</b> , 31, 050801	1.3	60
97	Plasma under control: Advanced solutions and perspectives for plasma flux management in material treatment and nanosynthesis. <i>Applied Physics Reviews</i> , <b>2017</b> , 4, 041302	17.3	60
96	Effective Control of Nanostructured Phases in Rapid, Room-Temperature Synthesis of Nanocrystalline Si in High-Density Plasmas. <i>Crystal Growth and Design</i> , <b>2009</b> , 9, 2863-2867	3.5	58
95	Prospects and physical mechanisms for photonic space propulsion. <i>Nature Photonics</i> , <b>2018</b> , 12, 649-657	33.9	54

94	Highly Efficient Silicon Nanoarray Solar Cells by a Single-Step Plasma-Based Process. <i>Advanced Energy Materials</i> , <b>2011</b> , 1, 373-376	21.8	51
93	Interfacial modification of titanium dioxide to enhance photocatalytic efficiency towards H <sub>2</sub> production. <i>Journal of Colloid and Interface Science</i> , <b>2019</b> , 556, 376-385	9.3	44
92	Silicon on silicon: self-organized nanotip arrays formed in reactive Ar+H <sub>2</sub> plasmas. <i>Nanotechnology</i> , <b>2010</b> , 21, 025605	3.4	44
91	Growth kinetics of carbon nanowall-like structures in low-temperature plasmas. <i>Physics of Plasmas</i> , <b>2007</b> , 14, 063502	2.1	42
90	High-Efficiency Silicon Solar Cells Materials and Devices Physics. <i>Critical Reviews in Solid State and Materials Sciences</i> , <b>2014</b> , 39, 277-317	10.1	41
89	Lightning under water: Diverse reactive environments and evidence of synergistic effects for material treatment and activation. <i>Applied Physics Reviews</i> , <b>2018</b> , 5, 021103	17.3	41
88	Polycrystalline carbon nitride EC3N4 films synthesized by radio frequency magnetron sputtering. <i>Journal of Materials Science Letters</i> , <b>1997</b> , 17, 31-35		39
87	Comparative study of photocatalysis and gas sensing of ZnO/Ag nanocomposites synthesized by one- and two-step polymer-network gel processes. <i>Journal of Alloys and Compounds</i> , <b>2021</b> , 868, 158723	5.7	39
86	From nanometre to millimetre: a range of capabilities for plasma-enabled surface functionalization and nanostructuring. <i>Materials Horizons</i> , <b>2018</b> , 5, 765-798	14.4	37
85	Controlled-bandgap silicon nitride nanomaterials: deterministic nitrogenation in high-density plasmas. <i>Journal of Materials Chemistry</i> , <b>2010</b> , 20, 5853		37
84	Low-temperature plasma processing for Si photovoltaics. <i>Materials Science and Engineering Reports</i> , <b>2014</b> , 78, 1-29	30.9	36
83	High-rate, low-temperature synthesis of composition controlled hydrogenated amorphous silicon carbide films in low-frequency inductively coupled plasmas. <i>Journal Physics D: Applied Physics</i> , <b>2008</b> , 41, 055406	3	35
82	Oxygen plasmas: a sharp chisel and handy trowel for nanofabrication. <i>Nanoscale</i> , <b>2018</b> , 10, 17494-17511	17.7	33
81	Wearable, Flexible, Disposable Plasma-Reduced Graphene Oxide Stress Sensors for Monitoring Activities in Austere Environments. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2019</b> , 11, 15122-15132	9.5	32
80	MoS <sub>2</sub> -based nanostructures: synthesis and applications in medicine. <i>Journal Physics D: Applied Physics</i> , <b>2019</b> , 52, 183001	3	30
79	Mars Colonization: Beyond Getting There. <i>Global Challenges</i> , <b>2019</b> , 3, 1800062	4.3	29
78	Diagnostics and two-dimensional simulation of low-frequency inductively coupled plasmas with neutral gas heating and electron heat fluxes. <i>Journal of Applied Physics</i> , <b>2002</b> , 92, 4935-4946	2.5	26
77	Formation of vertically oriented graphenes: what are the key drivers of growth?. <i>2D Materials</i> , <b>2018</b> , 5, 044002	5.9	25

76	Dilution effect of Ar/H <sub>2</sub> on the microstructures and photovoltaic properties of nc-Si:H deposited in low frequency inductively coupled plasma. <i>Journal of Applied Physics</i> , <b>2011</b> , 110, 023517	2.5	25
75	Crystalline silicon surface passivation by intrinsic silicon thin films deposited by low-frequency inductively coupled plasma. <i>Journal of Applied Physics</i> , <b>2012</b> , 112, 013708	2.5	25
74	Towards universal plasma-enabled platform for the advanced nanofabrication: plasma physics level approach. <i>Reviews of Modern Plasma Physics</i> , <b>2018</b> , 2, 1	5.6	24
73	From amorphous to microcrystalline: Phase transition in rapid synthesis of hydrogenated silicon thin film in low frequency inductively coupled plasmas. <i>Journal of Applied Physics</i> , <b>2010</b> , 108, 113520	2.5	21
72	Plasma-aided fabrication in Si-based photovoltaic applications: an overview. <i>Journal Physics D: Applied Physics</i> , <b>2011</b> , 44, 174033	3	21
71	Temperature-Dependent Properties of nc-Si Thin Films Synthesized in Low-Pressure, Thermally Nonequilibrium, High-Density Inductively Coupled Plasmas. <i>Journal of Physical Chemistry C</i> , <b>2009</b> , 113, 14759-14764	3.8	21
70	PECVD of Carbon Nanostructures in Hydrocarbon-Based RF Plasmas. <i>Contributions To Plasma Physics</i> , <b>2005</b> , 45, 514-521	1.4	20
69	Si surface passivation by SiO <sub>x</sub> : H films deposited by a low-frequency ICP for solar cell applications. <i>Journal Physics D: Applied Physics</i> , <b>2012</b> , 45, 395401	3	19
68	Amorphous/crystalline silicon heterojunction solar cells via remote inductively coupled plasma processing. <i>Applied Physics Letters</i> , <b>2012</b> , 100, 233902	3.4	19
67	On the structure and composition of polycrystalline carbon nitride films synthesized by reactive rf magnetron sputtering. <i>Chemical Physics Letters</i> , <b>1998</b> , 287, 731-736	2.5	18
66	Growth of SiC nanoparticle films by means of RF magnetron sputtering. <i>IEEE Transactions on Plasma Science</i> , <b>2005</b> , 33, 242-243	1.3	17
65	Plasma-potentiated small molecules—possible alternative to antibiotics?. <i>Nano Futures</i> , <b>2017</b> , 1, 025002	3.6	16
64	On conductivity type conversion of p-type silicon exposed to a low-frequency inductively coupled plasma of Ar + H <sub>2</sub> . <i>Journal Physics D: Applied Physics</i> , <b>2010</b> , 43, 505402	3	16
63	Structural, electronic, and optical properties of wurtzite and rocksalt InN under pressure. <i>Physical Review B</i> , <b>2010</b> , 81,	3.3	16
62	Tuning and fine morphology control of natural resource-derived vertical graphene. <i>Carbon</i> , <b>2020</b> , 159, 668-685	10.4	16
61	Plasma parameters and discharge characteristics of lab-based krypton-propelled miniaturized Hall thruster. <i>Plasma Sources Science and Technology</i> , <b>2019</b> , 28, 064003	3.5	16
60	p-type doping of ZnO by means of high-density inductively coupled plasmas. <i>Materials Letters</i> , <b>2009</b> , 63, 972-974	3.3	15
59	Direct current arc plasma thrusters for space applications: basic physics, design and perspectives. <i>Reviews of Modern Plasma Physics</i> , <b>2019</b> , 3, 1	5.6	14

58	Low temperature SiNx:H films deposited by inductively coupled plasma for solar cell applications. <i>Applied Surface Science</i> , <b>2013</b> , 264, 21-26	6.7	14
57	Hydrogen-plasma-induced Rapid, Low-Temperature Crystallization of $\mu\text{-thick}$ a-Si:H Films. <i>Scientific Reports</i> , <b>2016</b> , 6, 32716	4.9	13
56	Si24: An Efficient Solar Cell Material. <i>Journal of Physical Chemistry C</i> , <b>2017</b> , 121, 15574-15579	3.8	13
55	Inductively coupled hydrogen plasma processing of AZO thin films for heterojunction solar cell applications. <i>Journal of Alloys and Compounds</i> , <b>2014</b> , 610, 107-112	5.7	12
54	Low-temperature deposition of $\mu\text{-Si:H}$ thin films by a low-frequency inductively coupled plasma for photovoltaic applications. <i>Journal Physics D: Applied Physics</i> , <b>2013</b> , 46, 215501	3	12
53	Plasma-reactive SiC quantum dots on polycrystalline AlN films. <i>Physics of Plasmas</i> , <b>2006</b> , 13, 023506	2.1	12
52	Nanoscale surface and interface engineering: Why plasma-aided?. <i>Surface and Coatings Technology</i> , <b>2008</b> , 202, 5314-5318	4.4	11
51	Single-Step Fabrication of Nickel Films with Arrayed Macropores and Nanostructured Skeletons. <i>Advanced Materials</i> , <b>2006</b> , 18, 1905-1909	24	11
50	Plasma and Polymers: Recent Progress and Trends. <i>Molecules</i> , <b>2021</b> , 26,	4.8	11
49	Highly textured conductive and transparent ZnO films for HIT solar cell applications. <i>Journal Physics D: Applied Physics</i> , <b>2015</b> , 48, 305105	3	10
48	A Review of Low-Power Electric Propulsion Research at the Space Propulsion Centre Singapore. <i>Aerospace</i> , <b>2020</b> , 7, 67	2.5	10
47	3D-Printed Multilayered Reinforced Material System for Gas Supply in CubeSats and Small Satellites. <i>Advanced Engineering Materials</i> , <b>2019</b> , 21, 1900401	3.5	10
46	Thermodynamical and plasma-driven kinetic growth of high-aspect-ratio nanostructures: effect of hydrogen termination. <i>Journal Physics D: Applied Physics</i> , <b>2009</b> , 42, 125207	3	10
45	Nanoparticle manipulation in the near-substrate areas of low-temperature, high-density rf plasmas. <i>Physics of Plasmas</i> , <b>2005</b> , 12, 103507	2.1	10
44	Plasmonic platform based on nanoporous alumina membranes: order control via self-assembly. <i>Journal of Materials Chemistry A</i> , <b>2019</b> , 7, 9565-9577	13	9
43	Plasma-aided hydrogenation and Al-doping: Increasing the conductivity and optical transparency of ZnO transparent conducting oxide. <i>Applied Surface Science</i> , <b>2011</b> , 257, 9986-9990	6.7	9
42	Highly doped p-type nanocrystalline silicon thin films fabricated by low-frequency inductively coupled plasma without H2 dilution. <i>Journal of Applied Physics</i> , <b>2011</b> , 110, 063302	2.5	9
41	Facile synthesis of Ag/Zn $_{1-x}$ Cu $_x$ O nanoparticle compound photocatalyst for high-efficiency photocatalytic degradation: Insights into the synergies and antagonisms between Cu and Ag. <i>Ceramics International</i> , <b>2021</b> , 47, 48-56	5.1	9

40	Focusing plasma jets to achieve high current density: Feasibility and opportunities for applications in debris removal and space exploration. <i>Aerospace Science and Technology</i> , <b>2021</b> , 108, 106343	4.9	9
39	Automated Integrated Robotic Systems for Diagnostics and Test of Electric and Micropropulsion Thrusters. <i>IEEE Transactions on Plasma Science</i> , <b>2018</b> , 46, 345-353	1.3	8
38	Ultra-low reflective black silicon photovoltaics by high density inductively coupled plasmas. <i>Solar Energy</i> , <b>2018</b> , 171, 841-850	6.8	8
37	Discharge mode transition in a Krypton-fed 1 A-class LaB6 cathode for low-power Hall thrusters for small satellites. <i>Journal of Applied Physics</i> , <b>2020</b> , 127, 064501	2.5	7
36	Aluminum-assisted crystallization and p-type doping of polycrystalline Si. <i>Applied Physics A: Materials Science and Processing</i> , <b>2009</b> , 97, 375-380	2.6	7
35	Dense Plasmas in Magnetic Traps: Generation of Focused Ion Beams With Controlled Ion-to-Neutral Flux Ratios. <i>IEEE Transactions on Plasma Science</i> , <b>2014</b> , 42, 2518-2519	1.3	6
34	Nonlinear electromagnetic fields in 0.5 MHz inductively coupled plasmas. <i>Physics of Plasmas</i> , <b>2003</b> , 10, 1146-1151	2.1	6
33	E and H regimes of plasma enhanced chemical vapor deposition of diamond-like carbon film in low frequency inductively coupled plasma reactor. <i>Diamond and Related Materials</i> , <b>2002</b> , 11, 92-97	3.5	6
32	Precise Calibration of Propellant Flow and Forces in Specialized Electric Propulsion Test System. <i>IEEE Transactions on Plasma Science</i> , <b>2018</b> , 46, 338-344	1.3	5
31	Approach to a simplified numerical optimization of low-power Hall thrusters. <i>Vacuum</i> , <b>2018</b> , 152, 173-183	3.7	5
30	Low-temperature preparation of phosphorus doped $\mu$ -Si:H thin films by low-frequency inductively coupled plasma assisted chemical vapor deposition. <i>Thin Solid Films</i> , <b>2012</b> , 520, 1724-1728	2.2	5
29	Effect of silane/hydrogen ratio on microcrystalline silicon thin films by remote inductively coupled plasma. <i>Journal of Applied Physics</i> , <b>2013</b> , 113, 203505	2.5	5
28	STRUCTURAL, OPTICAL AND ELECTRICAL PROPERTIES OF Al-DOPED ZnO TRANSPARENT CONDUCTING OXIDE FOR SOLAR CELL APPLICATIONS. <i>Functional Materials Letters</i> , <b>2011</b> , 04, 401-405	1.2	5
27	Plasma meets metamaterials: Three ways to advance space micropropulsion systems. <i>Advances in Physics: X</i> , <b>2021</b> , 6, 1834452	5.1	5
26	Radicals and ions controlling by adjusting the antenna-substrate distance in a-Si:H deposition using a planar ICP for c-Si surface passivation. <i>Applied Surface Science</i> , <b>2017</b> , 396, 926-932	6.7	4
25	Morphological transformations of BNCO nanomaterials: Role of intermediates. <i>Applied Surface Science</i> , <b>2018</b> , 442, 682-692	6.7	4
24	Inductively and capacitively coupled plasmas at interface: A comparative study towards highly efficient amorphous-crystalline Si solar cells. <i>Applied Surface Science</i> , <b>2018</b> , 427, 486-493	6.7	4
23	RF power dependence of the properties of n-type nanocrystalline silicon films deposited by a low-frequency inductively coupled plasma. <i>Journal Physics D: Applied Physics</i> , <b>2011</b> , 44, 455304	3	4

22	Scalable Production of Silicon Nanocone Solar Cells in Integrated Plasma Photovoltaic Nanofabrication Cluster. <i>Plasma Processes and Polymers</i> , <b>2016</b> , 13, 161-169	3.4	4
21	Optimization, Test and Diagnostics of Miniaturized Hall Thrusters. <i>Journal of Visualized Experiments</i> , <b>2019</b> ,	1.6	4
20	Catalyst-free growth and tailoring morphology of zinc oxide nanostructures by plasma-enhanced deposition at low temperature. <i>Journal of Nanoparticle Research</i> , <b>2017</b> , 19, 1	2.3	3
19	Surface passivation of crystalline silicon by intrinsic a-Si:H films deposited in remote low frequency inductively coupled plasma. <i>Applied Surface Science</i> , <b>2019</b> , 487, 146-150	6.7	3
18	Chemically active plasmas for surface passivation of Si photovoltaics. <i>Catalysis Today</i> , <b>2015</b> , 252, 201-210	3.3	3
17	Nanocrystalline silicon embedded in silicon suboxide synthesized in high-density inductively coupled plasma. <i>Journal Physics D: Applied Physics</i> , <b>2015</b> , 48, 445302	3	3
16	Miniaturized rotating magnetic field driven plasma system: proof-of-concept experiments. <i>Plasma Sources Science and Technology</i> , <b>2021</b> , 30, 065003	3.5	3
15	A low-current LaB6 open-end knife-edge emitter hollow cathode for low-power Hall thrusters. <i>Plasma Sources Science and Technology</i> , <b>2021</b> , 30, 085012	3.5	3
14	High-Efficiency Inductively Coupled Plasma Source With Dual Antenna Hybrid Scheme. <i>IEEE Transactions on Plasma Science</i> , <b>2018</b> , 46, 954-961	1.3	2
13	A comparative study on the direct deposition of B-Si:H and plasma-induced recrystallization of a-Si:H: Insight into Si crystallization in a high-density plasma. <i>Applied Surface Science</i> , <b>2018</b> , 433, 285-291	6.7	2
12	Inductively Coupled Plasma-Assisted RF Magnetron Sputtering Deposition of Highly Uniform SiC Nanoislanded Films. <i>IEEE Transactions on Plasma Science</i> , <b>2008</b> , 36, 870-871	1.3	2
11	All-optical control of the carrier-envelope phase with multi-stage optical parametric amplifiers verified with spectral interference. <i>Applied Physics B: Lasers and Optics</i> , <b>2006</b> , 83, 537-541	1.9	2
10	Mars Colonization: Beyond Getting There <b>2021</b> , 73-98		2
9	Highly tunable electronic properties in plasma-synthesized B-doped microcrystalline-to-amorphous silicon nanostructure for solar cell applications. <i>Journal of Applied Physics</i> , <b>2017</b> , 122, 133112	2.5	1
8	Ab initio calculation of relative permittivity of La-doped HfO2. <i>Physica B: Condensed Matter</i> , <b>2014</b> , 454, 184-188	2.8	1
7	Hydrocarbon Plasma for Treatment of Biodegradable Food Containers. <i>IEEE Transactions on Plasma Science</i> , <b>2008</b> , 36, 1306-1307	1.3	1
6	Internal oscillating current-sustained RF plasmas: Parameters, stability, and potential for surface engineering. <i>Surface and Coatings Technology</i> , <b>2005</b> , 200, 796-799	4.4	1
5	Series in vector spherical harmonics: An efficient tool for solution of nonlinear problems in spherical plasmas. <i>Physics of Plasmas</i> , <b>2000</b> , 7, 3101-3104	2.1	1



- 4 Phenomenological plasma model for open-end emitter with orificed keeper hollow cathodes. *Acta Astronautica*, **2022**, 191, 293-316 2.9 1
- 3 Evidence of the ionization instability and ion acoustic turbulence correlation in sub-ampere hollow cathodes **2022**, 1, 1 0
- 2 Advanced Concepts and Architectures for Plasma-Enabled Material Processing **2020**, 5, 1-90
- 1 3D-Printed Multilayered Reinforced Material System for Gas Supply in CubeSats and Small Satellites. *Advanced Engineering Materials*, **2019**, 21, 1970036 3.5