Shuyan Xu

List of Publications by Year in descending order

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119 papers	3,814 citations	101496 36 h-index	138417 58 g-index
121 all docs	121 docs citations	121 times ranked	2627 citing authors

#	Article	IF	Citations
1	Inductively coupled Ar/CH4/H2 plasmas for low-temperature deposition of ordered carbon nanostructures. Journal of Applied Physics, 2004, 95, 2713-2724.	1.1	246
2	Space micropropulsion systems for Cubesats and small satellites: From proximate targets to furthermost frontiers. Applied Physics Reviews, 2018, 5, .	5.5	242
3	Low-frequency, high-density, inductively coupled plasma sources: Operation and applications. Physics of Plasmas, 2001, 8, 2549-2557.	0.7	184
4	Recent progress and perspectives of space electric propulsion systems based on smart nanomaterials. Nature Communications, 2018, 9, 879.	5.8	182
5	Perspectives, frontiers, and new horizons for plasma-based space electric propulsion. Physics of Plasmas, 2020, 27, .	0.7	140
6	Explore space using swarms of tiny satellites. Nature, 2018, 562, 185-187.	13.7	111
7	Advanced Materials for Nextâ€Generation Spacecraft. Advanced Materials, 2018, 30, e1802201.	11.1	92
8	Hierarchical Multicomponent Inorganic Metamaterials: Intrinsically Driven Selfâ€Assembly at the Nanoscale. Advanced Materials, 2018, 30, 1702226.	11.1	91
9	Deterministic plasma-aided synthesis of high-quality nanoislanded nc-SiC films. Applied Physics Letters, 2007, 90, 173112.	1.5	79
10	Comparative study of photocatalysis and gas sensing of ZnO/Ag nanocomposites synthesized by one- and two-step polymer-network gel processes. Journal of Alloys and Compounds, 2021, 868, 158723.	2.8	78
11	Rapid, low-temperature synthesis of nc-Si in high-density, non-equilibrium plasmas: enabling nanocrystallinity at very low hydrogen dilution. Journal of Materials Chemistry, 2009, 19, 5134.	6.7	77
12	Prospects and physical mechanisms for photonic space propulsion. Nature Photonics, 2018, 12, 649-657.	15.6	77
13	Self-organized vertically aligned single-crystal silicon nanostructures with controlled shape and aspect ratio by reactive plasma etching. Applied Physics Letters, 2009, 95, 111505.	1.5	75
14	Plasma under control: Advanced solutions and perspectives for plasma flux management in material treatment and nanosynthesis. Applied Physics Reviews, 2017, 4, .	5.5	72
15	Integrated plasma-aided nanofabrication facility: Operation, parameters, and assembly of quantum structures and functional nanomaterials. Vacuum, 2006, 80, 621-630.	1.6	70
16	Structure, bonding state and in-vitro study of Caâ€“Pâ€“Ti film deposited on Ti6Al4V by RF magnetron sputtering. Materials Science and Engineering C, 2002, 20, 175-180.	3.8	69
17	Structural evolution of nanocrystalline silicon thin films synthesized in high-density, low-temperature reactive plasmas. Nanotechnology, 2009, 20, 215606.	1.3	68
18	Low-temperature plasmas in carbon nanostructure synthesis. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2013, 31, .	0.6	63

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19	Interfacial modification of titanium dioxide to enhance photocatalytic efficiency towards H2 production. Journal of Colloid and Interface Science, 2019, 556, 376-385.	5.0	63
20	Effective Control of Nanostructured Phases in Rapid, Room-Temperature Synthesis of Nanocrystalline Si in High-Density Plasmas. Crystal Growth and Design, 2009, 9, 2863-2867.	1.4	60
21	Highly Efficient Silicon Nanoarray Solar Cells by a Singleâ€Step Plasmaâ€Based Process. Advanced Energy Materials, 2011, 1, 373-376.	10.2	54
22	Lightning under water: Diverse reactive environments and evidence of synergistic effects for material treatment and activation. Applied Physics Reviews, 2018, 5, 021103.	5.5	53
23	MoS₂-based nanostructures: synthesis and applications in medicine. Journal Physics D: Applied Physics, 2019, 52, 183001.	1.3	53
24	High-Efficiency Silicon Solar Cellsâ€”Materials and Devices Physics. Critical Reviews in Solid State and Materials Sciences, 2014, 39, 277-317.	6.8	52
25	Hopes and concerns for astronomy of satellite constellations. Nature Astronomy, 2020, 4, 1012-1014.	4.2	51
26	From nanometre to millimetre: a range of capabilities for plasma-enabled surface functionalization and nanostructuring. Materials Horizons, 2018, 5, 765-798.	6.4	49
27	Silicon on silicon: self-organized nanotip arrays formed in reactive Ar+H₂plasmas. Nanotechnology, 2010, 21, 025605.	1.3	46
28	Polycrystalline carbon nitride Î²-C3N4 films synthesized by radio frequency magnetron sputtering. Journal of Materials Science Letters, 1997, 17, 31-35.	0.5	45
29	Growth kinetics of carbon nanowall-like structures in low-temperature plasmas. Physics of Plasmas, 2007, 14, 063502.	0.7	45
30	Low-temperature plasma processing for Si photovoltaics. Materials Science and Engineering Reports, 2014, 78, 1-29.	14.8	44
31	Mars Colonization: Beyond Getting There. Global Challenges, 2019, 3, 1800062.	1.8	44
32	Oxygen plasmas: a sharp chisel and handy trowel for nanofabrication. Nanoscale, 2018, 10, 17494-17511.	2.8	43
33	Wearable, Flexible, Disposable Plasma-Reduced Graphene Oxide Stress Sensors for Monitoring Activities in Austere Environments. ACS Applied Materials & Interfaces, 2019, 11, 15122-15132.	4.0	43
34	Plasma and Polymers: Recent Progress and Trends. Molecules, 2021, 26, 4091.	1.7	42
35	Controlled-bandgap silicon nitride nanomaterials: deterministic nitrogenation in high-density plasmas. Journal of Materials Chemistry, 2010, 20, 5853.	6.7	40
36	High-rate, low-temperature synthesis of composition controlled hydrogenated amorphous silicon carbide films in low-frequency inductively coupled plasmas. Journal Physics D: Applied Physics, 2008, 41, 055406.	1.3	38

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37	Formation of vertically oriented graphenes: what are the key drivers of growth?. 2D Materials, 2018, 5, 044002.	2.0	31
38	Diagnostics and two-dimensional simulation of low-frequency inductively coupled plasmas with neutral gas heating and electron heat fluxes. Journal of Applied Physics, 2002, 92, 4935-4946.	1.1	28
39	Towards universal plasma-enabled platform for the advanced nanofabrication: plasma physics level approach. Reviews of Modern Plasma Physics, 2018, 2, 1.	2.2	28
40	Crystalline silicon surface passivation by intrinsic silicon thin films deposited by low-frequency inductively coupled plasma. Journal of Applied Physics, 2012, 112, .	1.1	27
41	Dilution effect of Ar/H2 on the microstructures and photovoltaic properties of nc-Si:H deposited in low frequency inductively coupled plasma. Journal of Applied Physics, 2011, 110, .	1.1	26
42	Si surface passivation by SiOxâ€‰:â€‰H films deposited by a low-frequency ICP for solar cell applications. Journal Physics D: Applied Physics, 2012, 45, 395401.	1.3	26
43	A Review of Low-Power Electric Propulsion Research at the Space Propulsion Centre Singapore. Aerospace, 2020, 7, 67.	1.1	25
44	Temperature-Dependent Properties of nc-Si Thin Films Synthesized in Low-Pressure, Thermally Nonequilibrium, High-Density Inductively Coupled Plasmas. Journal of Physical Chemistry C, 2009, 113, 14759-14764.	1.5	24
45	From amorphous to microcrystalline: Phase transition in rapid synthesis of hydrogenated silicon thin film in low frequency inductively coupled plasmas. Journal of Applied Physics, 2010, 108, .	1.1	24
46	Amorphous/crystalline silicon heterojunction solar cells via remote inductively coupled plasma processing. Applied Physics Letters, 2012, 100, 233902.	1.5	24
47	PECVD of Carbon Nanostructures in Hydrocarbon-Based RF Plasmas. Contributions To Plasma Physics, 2005, 45, 514-521.	0.5	23
48	Growth of SiC nanoparticle films by means of RF magnetron sputtering. IEEE Transactions on Plasma Science, 2005, 33, 242-243.	0.6	23
49	Plasma-aided fabrication in Si-based photovoltaic applications: an overview. Journal Physics D: Applied Physics, 2011, 44, 174033.	1.3	23
50	Plasma parameters and discharge characteristics of lab-based krypton-propelled miniaturized Hall thruster. Plasma Sources Science and Technology, 2019, 28, 064003.	1.3	21
51	Tuning and fine morphology control of natural resource-derived vertical graphene. Carbon, 2020, 159, 668-685.	5.4	21
52	On the structure and composition of polycrystalline carbon nitride films synthesized by reactive rf magnetron sputtering. Chemical Physics Letters, 1998, 287, 731-736.	1.2	20
53	Direct current arc plasma thrusters for space applications: basic physics, design and perspectives. Reviews of Modern Plasma Physics, 2019, 3, 1.	2.2	19
54	Hydrogen-plasma-induced Rapid, Low-Temperature Crystallization of Î¼m-thick a-Si:H Films. Scientific Reports, 2016, 6, 32716.	1.6	18

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55	Plasma-potentiated small moleculesâ€"possible alternative to antibiotics?. Nano Futures, 2017, 1, 025002.	1.0	18
56	Structural, electronic, and optical properties of wurtzite and rocksalt InN under pressure. Physical Review B, 2010, 81, .	1.1	17
57	On conductivity type conversion of p-type silicon exposed to a low-frequency inductively coupled plasma of Ar + H2. Journal Physics D: Applied Physics, 2010, 43, 505402.	1.3	17
58	Si₂₄: An Efficient Solar Cell Material. Journal of Physical Chemistry C, 2017, 121, 15574-15579.	1.5	17
59	Discharge mode transition in a Krypton-fed 1 A-class LaB6 cathode for low-power Hall thrusters for small satellites. Journal of Applied Physics, 2020, 127, .	1.1	17
60	Low temperature SiNx:H films deposited by inductively coupled plasma for solar cell applications. Applied Surface Science, 2013, 264, 21-26.	3.1	16
61	Focusing plasma jets to achieve high current density: Feasibility and opportunities for applications in debris removal and space exploration. Aerospace Science and Technology, 2021, 108, 106343.	2.5	16
62	p-type doping of ZnO by means of high-density inductively coupled plasmas. Materials Letters, 2009, 63, 972-974.	1.3	15
63	3Dâ€Printed Multilayered Reinforced Material System for Gas Supply in CubeSats and Small Satellites. Advanced Engineering Materials, 2019, 21, 1900401.	1.6	15
64	Low-temperature deposition of Âµc-Siâ€‰:â€‰H thin films by a low-frequency inductively coupled plasma for photovoltaic applications. Journal Physics D: Applied Physics, 2013, 46, 215501.	1.3	14
65	Inductively coupled hydrogen plasma processing of AZO thin films for heterojunction solar cell applications. Journal of Alloys and Compounds, 2014, 610, 107-112.	2.8	14
66	Plasma-reactive SiC quantum dots on polycrystalline AlN films. Physics of Plasmas, 2006, 13, 023506.	0.7	13
67	Highly textured conductive and transparent ZnO films for HIT solar cell applications. Journal Physics D: Applied Physics, 2015, 48, 305105.	1.3	13
68	Nanoparticle manipulation in the near-substrate areas of low-temperature, high-density rf plasmas. Physics of Plasmas, 2005, 12, 103507.	0.7	12
69	Nanoscale surface and interface engineering: Why plasma-aided?. Surface and Coatings Technology, 2008, 202, 5314-5318.	2.2	12
70	Automated Integrated Robotic Systems for Diagnostics and Test of Electric and Micropropulsion Thrusters. IEEE Transactions on Plasma Science, 2018, 46, 345-353.	0.6	12
71	Ultra-low reflective black silicon photovoltaics by high density inductively coupled plasmas. Solar Energy, 2018, 171, 841-850.	2.9	12
72	Nonlinear electromagnetic fields in 0.5 MHz inductively coupled plasmas. Physics of Plasmas, 2003, 10, 1146-1151.	0.7	11

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73	Single-Step Fabrication of Nickel Films with Arrayed Macropores and Nanostructured Skeletons. Advanced Materials, 2006, 18, 1905-1909.	11.1	11
74	Low-temperature synthesis of homogeneous nanocrystalline cubic silicon carbide films. Journal of Applied Physics, 2007, 102, 056101.	1.1	11
75	Highly doped p-type nanocrystalline silicon thin films fabricated by low-frequency inductively coupled plasma without H2 dilution. Journal of Applied Physics, 2011, 110, .	1.1	11
76	Plasmonic platform based on nanoporous alumina membranes: order control via self-assembly. Journal of Materials Chemistry A, 2019, 7, 9565-9577.	5.2	11
77	Functional Nanomaterials from Waste and Lowâ€Value Natural Products: A Technological Approach Level. Advanced Materials Technologies, 2022, 7, .	3.0	11
78	Thermodynamical and plasma-driven kinetic growth of high-aspect-ratio nanostructures: effect of hydrogen termination. Journal Physics D: Applied Physics, 2009, 42, 125207.	1.3	10
79	Facile synthesis of Ag/Zn1-xCuxO nanoparticle compound photocatalyst for high-efficiency photocatalytic degradation: Insights into the synergies and antagonisms between Cu and Ag. Ceramics International, 2021, 47, 48-56.	2.3	10
80	Plasma-aided hydrogenation and Al-doping: Increasing the conductivity and optical transparency of ZnO transparent conducting oxide. Applied Surface Science, 2011, 257, 9986-9990.	3.1	9
81	Inductively and capacitively coupled plasmas at interface: A comparative study towards highly efficient amorphous-crystalline Si solar cells. Applied Surface Science, 2018, 427, 486-493.	3.1	9
82	E and H regimes of plasma enhanced chemical vapor deposition of diamond-like carbon film in low frequency inductively coupled plasma reactor. Diamond and Related Materials, 2002, 11, 92-97.	1.8	8
83	Aluminum-assisted crystallization and p-type doping ofÂpolycrystalline Si. Applied Physics A: Materials Science and Processing, 2009, 97, 375-380.	1.1	7
84	Approach to a simplified numerical optimization of low-power Hall thrusters. Vacuum, 2018, 152, 173-183.	1.6	7
85	Miniaturized rotating magnetic fieldâ€“driven plasma system: proof-of-concept experiments. Plasma Sources Science and Technology, 2021, 30, 065003.	1.3	7
86	A low-current LaB₆ open-end knife-edge emitter hollow cathode for low-power Hall thrusters. Plasma Sources Science and Technology, 2021, 30, 085012.	1.3	7
87	Dense Plasmas in Magnetic Traps: Generation of Focused Ion Beams With Controlled Ion-to-Neutral Flux Ratios. IEEE Transactions on Plasma Science, 2014, 42, 2518-2519.	0.6	6
88	Plasma meets metamatertials: three ways to advance space micropropulsion systems. Advances in Physics: X, 2021, 6, 1834452.	1.5	6
89	Evidence of the ionization instability and ion acoustic turbulence correlation in sub-ampere hollow cathodes. Journal of Electric Propulsion, 2022, 1, 1.	0.6	6
90	STRUCTURAL, OPTICAL AND ELECTRICAL PROPERTIES OF Al-DOPED ZnO TRANSPARENT CONDUCTING OXIDE FOR SOLAR CELL APPLICATIONS. Functional Materials Letters, 2011, 04, 401-405.	0.7	5

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91	Low-temperature preparation of phosphorus doped Î¼c-Si:H thin films by low-frequency inductively coupled plasma assisted chemical vapor deposition. Thin Solid Films, 2012, 520, 1724-1728.	0.8	5
92	Effect of silane/hydrogen ratio on microcrystalline silicon thin films by remote inductively coupled plasma. Journal of Applied Physics, 2013, 113, .	1.1	5
93	Scalable Production of Silicon Nanocone Solar Cells in Integrated Plasma Photovoltaic Nanofabrication Cluster. Plasma Processes and Polymers, 2016, 13, 161-169.	1.6	5
94	Precise Calibration of Propellant Flow and Forces in Specialized Electric Propulsion Test System. IEEE Transactions on Plasma Science, 2018, 46, 338-344.	0.6	5
95	Phenomenological plasma model for open-end emitter with orificed keeper hollow cathodes. Acta Astronautica, 2022, 191, 293-316.	1.7	5
96	RF power dependence of the properties of n-type nanocrystalline silicon films deposited by a low-frequency inductively coupled plasma. Journal Physics D: Applied Physics, 2011, 44, 455304.	1.3	4
97	Chemically active plasmas for surface passivation of Si photovoltaics. Catalysis Today, 2015, 252, 201-210.	2.2	4
98	Radicals and ions controlling by adjusting the antenna-substrate distance in a-Si:H deposition using a planar ICP for c-Si surface passivation. Applied Surface Science, 2017, 396, 926-932.	3.1	4
99	Morphological transformations of BNCO nanomaterials: Role of intermediates. Applied Surface Science, 2018, 442, 682-692.	3.1	4
100	A comparative study on the direct deposition of Î¼c-Si:H and plasma-induced recrystallization of a-Si:H: Insight into Si crystallization in a high-density plasma. Applied Surface Science, 2018, 433, 285-291.	3.1	4
101	Surface passivation of crystalline silicon by intrinsic a-Si:H films deposited in remote low frequency inductively coupled plasma. Applied Surface Science, 2019, 487, 146-150.	3.1	4
102	Optimization, Test and Diagnostics of Miniaturized Hall Thrusters. Journal of Visualized Experiments, 2019, , .	0.2	4
103	Nanocrystalline silicon embedded in silicon suboxide synthesized in high-density inductively coupled plasma. Journal Physics D: Applied Physics, 2015, 48, 445302.	1.3	3
104	Catalyst-free growth and tailoring morphology of zinc oxide nanostructures by plasma-enhanced deposition at low temperature. Journal of Nanoparticle Research, 2017, 19, 1.	0.8	3
105	High-Efficiency Inductively Coupled Plasma Source With Dual Antenna Hybrid Scheme. IEEE Transactions on Plasma Science, 2018, 46, 954-961.	0.6	3
106	All-optical control of the carrier-envelope phase with multi-stage optical parametric amplifiers verified with spectral interference. Applied Physics B: Lasers and Optics, 2006, 83, 537-541.	1.1	2
107	Inductively Coupled Plasma-Assisted RF Magnetron Sputtering Deposition of Highly Uniform SiC Nanoislanded Films. IEEE Transactions on Plasma Science, 2008, 36, 870-871.	0.6	2
108	Ab initio calculation of relative permittivity of La-doped HfO2. Physica B: Condensed Matter, 2014, 454, 184-188.	1.3	2

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109	Scaling Laws for Very Low-Current Lab₆ Thermionic Cathodes for Electric Propulsion Systems for Small Satellites. , 2020, , .		2
110	Series in vector spherical harmonics: An efficient tool for solution of nonlinear problems in spherical plasmas. Physics of Plasmas, 2000, 7, 3101-3104.	0.7	1
111	Deposition Of Carbon Thin Film At Room Temperature Using Dense Plasma Focus Device. AIP Conference Proceedings, 2003, , .	0.3	1
112	Internal oscillating current-sustained RF plasmas: Parameters, stability, and potential for surface engineering. Surface and Coatings Technology, 2005, 200, 796-799.	2.2	1
113	Hydrocarbon Plasma for Treatment of Biodegradable Food Containers. IEEE Transactions on Plasma Science, 2008, 36, 1306-1307.	0.6	1
114	Highly tunable electronic properties in plasma-synthesized B-doped microcrystalline-to-amorphous silicon nanostructure for solar cell applications. Journal of Applied Physics, 2017, 122, 133112.	1.1	1
115	Parametric investigation of a mid frequency internal oscillating currents driven plasma reactor. , 2006, , .		0
116	Highâ€Density Plasmaâ€Enhanced Chemical Vapor Deposition of Siâ€Based Materials for Solar Cell Applications. , 2016, , .		0
117	3Dâ€Printed Multilayered Reinforced Material System for Gas Supply in CubeSats and Small Satellites. Advanced Engineering Materials, 2019, 21, 1970036.	1.6	0
118	Advanced Concepts and Architectures for Plasma-Enabled Material Processing. Synthesis Lectures on Emerging Engineering Technologies, 2020, 5, 1-90.	0.2	0
119	Preliminary Experiments on Rotamak-Like Plasma Engine. , 2020, , .		0