Zhibin Lu

List of Publications by Year
in descending order

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87 papers	1,613 citations	361296 20 h-index	360920 35 g-index
89 all docs	89 docs citations	89 times ranked	966 citing authors

#	Article	IF	Citations
1	Probing the low-friction mechanism of diamond-like carbon by varying of sliding velocity and vacuum pressure. Carbon, 2014, 66, 259-266.	5.4	129
2	Toward Low Friction in High Vacuum for Hydrogenated Diamondlike Carbon by Tailoring Sliding Interface. ACS Applied Materials & Interfaces, 2013, 5, 5889-5893.	4.0	101
3	Superlubricity Enabled by Pressure-Induced Friction Collapse. Journal of Physical Chemistry Letters, 2018, 9, 2554-2559.	2.1	79
4	Adhesive transfer at copper/diamond interface and adhesion reduction mechanism with fluorine passivation: A first-principles study. Carbon, 2018, 127, 548-556.	5.4	58
5	Enhanced Tribological Performance of Aminated Nano-Silica Modified Graphene Oxide as Water-Based Lubricant Additive. ACS Applied Nano Materials, 2018, 1, 6444-6453.	2.4	56
6	Tailoring the mechanical and tribological properties of B 4 C/a-C coatings by controlling the boron carbide content. Surface and Coatings Technology, 2017, 329, 11-18.	2.2	53
7	Fluorinated graphene film for corrosion control on copper: Experimental and theoretical studies. Carbon, 2021, 179, 445-457.	5.4	48
8	Environmental effect on the load-dependent friction behavior of a diamond-like carbon film. Tribology International, 2015, 82, 195-199.	3.0	44
9	Bias voltage dependence of superlubricity lifetime of hydrogenated amorphous carbon films in high vacuum. Tribology International, 2018, 117, 107-111.	3.0	44
10	Friction and wear properties of MoS2-based coatings sliding against Cu and Al under electric current. Tribology International, 2018, 127, 379-388.	3.0	44
11	A comparative study of tribological characteristics of hydrogenated DLC film sliding against ceramic mating materials for helium applications. Applied Surface Science, 2018, 441, 884-894.	3.1	40
12	Atomic-scale friction adjustment enabled by doping-induced modification in graphene nanosheet. Applied Surface Science, 2019, 483, 742-749.	3.1	36
13	Simultaneously achieving superior mechanical and tribological properties in WC/a-C nanomultilayers via structural design and interfacial optimization. Journal of Alloys and Compounds, 2017, 698, 420-432.	2.8	35
14	Effect of dopants (F, Si) material on the structure and properties of hydrogenated DLC film by plane cathode PECVD. Diamond and Related Materials, 2020, 110, 108102.	1.8	35
15	Frictional behaviors of diamond-like carbon films under water lubrication: A molecular dynamics study. Tribology International, 2021, 153, 106609.	3.0	33
16	Black Phosphorusâ€“Graphene Oxide Hybrid Nanomaterials toward Advanced Lubricating Properties under Water. Advanced Materials Interfaces, 2019, 6, 1901174.	1.9	30
17	Probing the lubrication mechanism of rough diamond-like carbon films against silicon nitride under water. Tribology International, 2018, 128, 248-259.	3.0	29
18	Preparation and properties of DLC/MoS₂multilayer coatings for high humidity tribology. Materials Research Express, 2016, 3, 066401.	0.8	24

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19	Synergistic Lubricating Behaviors of 3D Graphene and 2D Hexagonal Boron Nitride Dispersed in PAO4 for Steel/Steel Contact. Advanced Materials Interfaces, 2020, 7, 1901893.	1.9	24
20	Improving the mechanical and tribological properties of TiB2/a-C nanomultilayers by structural optimization. Ceramics International, 2018, 44, 3356-3363.	2.3	23
21	Self-adaptive MoS 2 -Pb-Ti film for vacuum and humid air. Surface and Coatings Technology, 2018, 345, 152-166.	2.2	22
22	Interfaceâ€Slidingâ€Induced Graphene Quantum Dots Transferring to Fullereneâ€Like Quantum Dots and Their Extraordinary Tribological Behavior. Advanced Materials Interfaces, 2019, 6, 1901386.	1.9	22
23	Gas phase lubrication on diamond-like carbon film: Tribochemical reactions under isobutane condition. Tribology International, 2019, 133, 152-159.	3.0	21
24	Quantifying Macroscopic Friction of Diamond-like Carbon Films by Microscopic Adsorption and Removal of Water Molecules. Langmuir, 2018, 34, 58-65.	1.6	20
25	First-Principles Delimitation of the Boundary between Intralayer and Interlayer in Two-Dimensional Structures. Journal of Physical Chemistry C, 2019, 123, 26912-26920.	1.5	19
26	The improved mechanical and tribological properties of amorphous carbon film by doping boron carbide. Ceramics International, 2020, 46, 9878-9884.	2.3	19
27	Attraction induced frictionless sliding of rare gas monolayer on metallic surfaces: an efficient strategy for superlubricity. Physical Chemistry Chemical Physics, 2017, 19, 11026-11031.	1.3	18
28	Corrosion and wear behaviors of Si-DLC films coated on inner surface of SS304 pipes by hollow cathode PECVD. Surface Topography: Metrology and Properties, 2018, 6, 034010.	0.9	18
29	Origin of low friction for amorphous carbon films with different hydrogen content in nitrogen atmosphere. Tribology International, 2019, 140, 105853.	3.0	18
30	Experimental and model studies about the lubrication of physisorbed isobutane molecules on hydrogenated diamond-like carbon films. Surface and Coatings Technology, 2019, 357, 759-767.	2.2	18
31	The correlation between shear elastic modulus and glass transition temperature of bulk metallic glasses. Applied Physics Letters, 2009, 94, 091907.	1.5	17
32	Alternative Friction Mechanism for Amorphous Carbon Films Sliding against Alumina. Industrial & Engineering Chemistry Research, 2019, 58, 4810-4817.	1.8	16
33	Microstructure and surface roughness of graphiteâ€like carbon films deposited on silicon substrate by molecular dynamic simulation. Surface and Interface Analysis, 2012, 44, 837-843.	0.8	15
34	The first-principles calculations to explore the mechanism of oxygen diffusion on vacancy defective graphene in marine environment. Applied Surface Science, 2020, 525, 146585.	3.1	15
35	Probing the lubrication mechanism of multilayered Si-DLC coatings in water and air environments. Diamond and Related Materials, 2020, 105, 107772.	1.8	15
36	Tribological properties of amorphous carbon in hydrochloric acid with ta-C counterpart. Surface and Coatings Technology, 2019, 380, 125004.	2.2	14

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37	How Vertical Compression Triggers Lateral Interlayer Slide for Metallic Molybdenum Disulfide?. Tribology Letters, 2018, 66, 1.	1.2	13
38	Enhancement in the corrosive and tribological properties of the inner wall of 6063Al and CI pipes by thick multilayer Si-DLC coatings. Materials Research Express, 2019, 6, 085634.	0.8	13
39	Mutual Identification between the Pressure-Induced Superlubricity and the Image Contrast Inversion of Carbon Nanostructures from AFM Technology. Journal of Physical Chemistry Letters, 2019, 10, 1498-1504.	2.1	13
40	First-principles theory of atomic-scale friction explored by an intuitive charge density fluctuation surface. Physical Chemistry Chemical Physics, 2019, 21, 24565-24571.	1.3	13
41	Different Tribological Behaviors in Multilayer 2D Graphene and 3D Graphene Foam Modified DLC/H-DLC Film in Moist Air. Tribology Letters, 2022, 70, 1.	1.2	13
42	The degradation of humidity sensitivity of friction for tetrahedral amorphous carbon film by spin-coating hexagonal boron nitride. Applied Surface Science, 2020, 509, 145343.	3.1	12
43	Pressure-induced insulator-semiconductor transition in bilayer hexagonal boron nitride. Ceramics International, 2017, 43, 6626-6630.	2.3	11
44	First-Principles Investigation on the Tribological Properties of h-BN Bilayer Under Variable Load. Tribology Letters, 2018, 66, 1.	1.2	11
45	The Tribological Performances of the Boron Carbide Films Tested under Wet Air and Wet N2 Conditions. Tribology Letters, 2019, 67, 1.	1.2	11
46	Electrons distribution competition: A negative correlation between relative potential energy and bandgap in hexagonal boron nitride. Tribology International, 2020, 141, 105961.	3.0	11
47	Strain Effects of Vertical Separation and Horizontal Sliding in Commensurate Two-Dimensional Homojunctions. Journal of Physical Chemistry Letters, 2020, 11, 5815-5822.	2.1	11
48	Synergistic effects of 3D porous graphene and T161 as hybrid lubricant additives on 316 ASS surface. Tribology International, 2021, 161, 107072.	3.0	11
49	Ultra-Low Friction of Graphene/Honeycomb Borophene Heterojunction. Tribology Letters, 2021, 69, 1.	1.2	10
50	Probing the tribological performances of hydrogenated amorphous carbon film in methane atmosphere based on Hertzian elastic contact model. Tribology International, 2021, 155, 106790.	3.0	10
51	Probing the friction and wear behaviors of diamond-like carbon film in HCl and H2SO4 media. Materials Research Express, 2019, 6, 106450.	0.8	9
52	Investigation of mechanical and tribological properties of super-thick DLC films with different modulation ratios prepared by PECVD. Materials Research Express, 2019, 6, 086433.	0.8	9
53	Probing Tribological Behaviors of Cr-DLC in Corrosion Solution by Tailoring Sliding Interface. Tribology Letters, 2020, 68, 1.	1.2	9
54	Atomic-Scale Rolling Friction and Charge-Transfer Mechanism: An Integrated Study of Physical Deductions and DFT Simulations. Journal of Physical Chemistry C, 2020, 124, 8431-8438.	1.5	9

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55	Superlubricity Enabled by Loadâ€Driven Redistribution of Electrons. Advanced Materials Interfaces, 2022, 9, .	1.9	9
56	Frictionâ€“Load Relationship in the Adhesive Regime Revealing Potential Incapability of AFM Investigations. Tribology Letters, 2020, 68, 1.	1.2	8
57	Influence of currents on tribological behavior of diamond-like carbon films. Applied Physics A: Materials Science and Processing, 2020, 126, 1.	1.1	8
58	Improving the tribological properties of diamond-like carbon film applied under methane by tailoring sliding interface. International Journal of Refractory Metals and Hard Materials, 2021, 94, 105380.	1.7	8
59	Probing tribological performances of hydrogenated amorphous carbon film applied in methane by structural modification with boron. Wear, 2021, 470-471, 203610.	1.5	8
60	The influence of electronic transfer on friction properties of hexagonal boron nitride. RSC Advances, 2015, 5, 106239-106244.	1.7	7
61	Enhancement in the tribological properties of Cr/DLC multilayers in methane: structural transformation induced by sliding. SN Applied Sciences, 2019, 1, 1.	1.5	7
62	Corrosion and tribological investigations of the B4C coatings rubbing against SiC ball for high relative humidity engineering application. Materials Today Communications, 2020, 23, 100924.	0.9	7
63	The Unusual Tribological Properties of Graphene/Antimonene Heterojunctions: A First-Principles Investigation. Materials, 2021, 14, 1201.	1.3	7
64	Design of a novel superhydrophobic F&Si-DLC film on the internal surface of 304SS pipes. Diamond and Related Materials, 2022, 123, 108852.	1.8	7
65	Bio-Tribology and Corrosion Behaviors of a Si- and N-Incorporated Diamond-like Carbon Film: A New Class of Protective Film for Ti6Al4V Artificial Implants. ACS Biomaterials Science and Engineering, 2022, 8, 1166-1180.	2.6	7
66	3D graphene/hexagonal boron nitride composite nanomaterials synergistically reduce the friction and wear of Steelâ€DLC contacts. Nano Select, 2021, 2, 791-801.	1.9	6
67	Tribological behaviors of DLC films with hierarchical surface textures under water lubrication: A molecular dynamic simulation. Journal of Micromechanics and Molecular Physics, 2021, 06, 2150005.	0.7	6
68	Lattice distortion-enhanced superlubricity of (Mo, X)S₂ (X = Al, Ti, Cr and V) with moirÃ© superlattice. Nanoscale, 2021, 13, 16234-16243.	2.8	6
69	The influences of atom relaxation on the DFT-calculated friction properties of theÂh-BN/h-BN and Gr/Gr interfaces. Tribology International, 2022, 173, 107586.	3.0	6
70	Carbon content and layers number controlling electronic properties of hybridized graphene and boron nitride. Ceramics International, 2019, 45, 19380-19387.	2.3	5
71	Green oil additive g-C3N4: a feasible strategy to enhance the tribological properties of DLC film. Materials Research Express, 2019, 6, 115036.	0.8	5
72	Tuning the electronic structure of hexagonal boron nitride by carbon atom modification: a feasible strategy to reduce sliding friction. Materials Research Express, 2019, 6, 036306.	0.8	5

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73	Mechanical and High-Temperature Tribological Properties of Cr3C2-NiCr/TiN Duplex Coating. Journal of Materials Engineering and Performance, 2020, 29, 7207-7220.	1.2	5
74	A novel ultra-low friction heterostructure: Aluminum substrate-honeycomb borophene/graphene heterojunction. Computational Materials Science, 2022, 205, 111236.	1.4	5
75	Tribological behaviors of Pb/MoS2 film under electrical condition in vacuum. Materials Research Express, 2019, 6, 076416.	0.8	3
76	Tribo-mechanism of amorphous carbon films under corrosion solution and various mechanical loads. Diamond and Related Materials, 2021, 114, 108318.	1.8	3
77	Explanation of the microscopic mechanism of h-BN isostructural transformation under biaxial strain. Materials Today Communications, 2021, 27, 102391.	0.9	3
78	Simultaneously improved bio-tribological and biological corrosion properties of taC film coated on Ti6Al4V by sealing with ALD. Diamond and Related Materials, 2021, 120, 108569.	1.8	3
79	Effect of strain on the tribological properties of honeycomb borophene/graphene heterostructures: An electronic hierarchical understanding of ultra-low friction. Tribology International, 2022, 174, 107707.	3.0	3
80	The oxidation behaviors of Cr₂N and Cr/Cr₂N multilayer coatings on Zircaloy-4 tubes in high temperature environment. Surface Topography: Metrology and Properties, 2021, 9, 035045.	0.9	2
81	Rehybridization analysis of C atoms of Cu/Diamond and Ni/Diamond interfaces under vertical pressure. Diamond and Related Materials, 2021, 120, 108661.	1.8	2
82	Probing the Lubrication of Shear-Induced Self-assembled Layer on Amorphous Carbon Films in Methane Atmosphere. Tribology Letters, 2022, 70, 1.	1.2	2
83	Borophene: Provides the Possibility to Observe the Behavior of a Negative Friction Coefficient in a Rigid Interface. Tribology Letters, 2022, 70, 1.	1.2	2
84	Effect of electric currents on tribological behaviors of Ti/MoS2 composite film sliding against aluminum. Surface Topography: Metrology and Properties, 2019, 7, 025014.	0.9	1
85	Friction reduction mechanisms of <scp>TiN</scp> film sliding in graphene aqueous dispersion. Lubrication Science, 2022, 34, 112-126.	0.9	1
86	Toward tribological performance of amorphous carbon film applied in methane atmosphere by thermal annealing. Applied Physics A: Materials Science and Processing, 2021, 127, 1.	1.1	0
87	A universal mathematical model on the gas dependence of the tribological properties of films. Tribology International, 2022, 165, 107308.	3.0	0