

Michael Nosonovsky

List of Publications by Year in descending order

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140
papers

7,860
citations

50276

46
h-index

51608

86
g-index

152
all docs

152
docs citations

152
times ranked

6469
citing authors

#	ARTICLE	IF	CITATIONS
1	Superhydrophobic surfaces and emerging applications: Non-adhesion, energy, green engineering. <i>Current Opinion in Colloid and Interface Science</i> , 2009, 14, 270-280.	7.4	531
2	Multiscale Roughness and Stability of Superhydrophobic Biomimetic Interfaces. <i>Langmuir</i> , 2007, 23, 3157-3161.	3.5	458
3	The rose petal effect and the modes of superhydrophobicity. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2010, 368, 4713-4728.	3.4	418
4	Why Superhydrophobic Surfaces Are Not Always Icephobic. <i>ACS Nano</i> , 2012, 6, 8488-8491.	14.6	339
5	Biomimetic Superhydrophobic Surfaces: Multiscale Approach. <i>Nano Letters</i> , 2007, 7, 2633-2637.	9.1	338
6	From superhydrophobicity to icephobicity: forces and interaction analysis. <i>Scientific Reports</i> , 2013, 3, 2194.	3.3	273
7	Roughness optimization for biomimetic superhydrophobic surfaces. <i>Microsystem Technologies</i> , 2005, 11, 535-549.	2.0	270
8	Biologically Inspired Surfaces: Broadening the Scope of Roughness**. <i>Advanced Functional Materials</i> , 2008, 18, 843-855.	14.9	244
9	Hierarchical roughness optimization for biomimetic superhydrophobic surfaces. <i>Ultramicroscopy</i> , 2007, 107, 969-979.	1.9	236
10	Multiscale friction mechanisms and hierarchical surfaces in nano- and bio-tribology. <i>Materials Science and Engineering Reports</i> , 2007, 58, 162-193.	31.8	235
11	On the Range of Applicability of the Wenzel and Cassie Equations. <i>Langmuir</i> , 2007, 23, 9919-9920.	3.5	197
12	Multiscale Dissipative Mechanisms and Hierarchical Surfaces. <i>Nanoscience and Technology</i> , 2008, , .	1.5	195
13	Patterned Nonadhesive Surfaces: Superhydrophobicity and Wetting Regime Transitions. <i>Langmuir</i> , 2008, 24, 1525-1533.	3.5	193
14	Slippery when wetted. <i>Nature</i> , 2011, 477, 412-413.	27.8	175
15	Self-Assembling Particle-Siloxane Coatings for Superhydrophobic Concrete. <i>ACS Applied Materials & Interfaces</i> , 2013, 5, 13284-13294.	8.0	150
16	Roughness-induced superhydrophobicity: a way to design non-adhesive surfaces. <i>Journal of Physics Condensed Matter</i> , 2008, 20, 225009.	1.8	144
17	Towards optimization of patterned superhydrophobic surfaces. <i>Journal of the Royal Society Interface</i> , 2007, 4, 643-648.	3.4	132
18	Model for solid-liquid and solid-solid friction of rough surfaces with adhesion hysteresis. <i>Journal of Chemical Physics</i> , 2007, 126, 224701.	3.0	123

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19	Scale effects in friction using strain gradient plasticity and dislocation-assisted sliding (microslip). <i>Acta Materialia</i> , 2003, 51, 4331-4345.	7.9	107
20	Green tribology: principles, research areas and challenges. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2010, 368, 4677-4694.	3.4	94
21	A model for diffusion-driven hydrophobic recovery in plasma treated polymers. <i>Applied Surface Science</i> , 2012, 258, 6876-6883.	6.1	93
22	Comprehensive model for scale effects in friction due to adhesion and two- and three-body deformation (plowing). <i>Acta Materialia</i> , 2004, 52, 2461-2474.	7.9	90
23	Dynamics of Droplet Impact on Hydrophobic/Icephobic Concrete with the Potential for Superhydrophobicity. <i>Langmuir</i> , 2015, 31, 1437-1444.	3.5	88
24	Wetting Transitions in Two-, Three-, and Four-Phase Systems. <i>Langmuir</i> , 2012, 28, 2173-2180.	3.5	83
25	Anti-Icing Superhydrophobic Surfaces: Controlling Entropic Molecular Interactions to Design Novel Icephobic Concrete. <i>Entropy</i> , 2016, 18, 132.	2.2	79
26	Scale effects in dry and wet friction, wear, and interface temperature. <i>Nanotechnology</i> , 2004, 15, 749-761.	2.6	78
27	Thermodynamics of surface degradation, self-organization and self-healing for biomimetic surfaces. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2009, 367, 1607-1627.	3.4	77
28	Energy transitions in superhydrophobicity: low adhesion, easy flow and bouncing. <i>Journal of Physics Condensed Matter</i> , 2008, 20, 395005.	1.8	76
29	Nanoscale water capillary bridges under deeply negative pressure. <i>Chemical Physics Letters</i> , 2008, 451, 88-92.	2.6	75
30	Entropy in Tribology: in the Search for Applications. <i>Entropy</i> , 2010, 12, 1345-1390.	2.2	75
31	Multiscale effects and capillary interactions in functional biomimetic surfaces for energy conversion and green engineering. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2009, 367, 1511-1539.	3.4	72
32	Triboinformatic modeling of dry friction and wear of aluminum base alloys using machine learning algorithms. <i>Tribology International</i> , 2021, 161, 107065.	5.9	63
33	Wetting Transitions in Underwater Oleophobic Surface of Brass. <i>Advanced Materials</i> , 2012, 24, 5963-5966.	21.0	62
34	Stochastic model for metastable wetting of roughness-induced superhydrophobic surfaces. <i>Microsystem Technologies</i> , 2006, 12, 231-237.	2.0	61
35	Wetting of rough three-dimensional superhydrophobic surfaces. <i>Microsystem Technologies</i> , 2006, 12, 273-281.	2.0	61
36	Self-assembled levitating clusters of water droplets: pattern-formation and stability. <i>Scientific Reports</i> , 2017, 7, 1888.	3.3	61

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37	Beyond Wenzel and Cassieâ€“Baxter: Second-Order Effects on the Wetting of Rough Surfaces. <i>Langmuir</i> , 2014, 30, 9423-9429.	3.5	59
38	Coupling of surface energy with electric potential makes superhydrophobic surfaces corrosion-resistant. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 24988-24997.	2.8	57
39	Triboinformatics Approach for Friction and Wear Prediction of Al-Graphite Composites Using Machine Learning Methods. <i>Journal of Tribology</i> , 2022, 144, .	1.9	56
40	Surface micro/nanotopography, wetting properties and the potential for biomimetic icephobicity of skunk cabbage <i><i>Symplocarpus foetidus</i></i> . <i>Soft Matter</i> , 2014, 10, 7797-7803.	2.7	53
41	Why re-entrant surface topography is needed for robust oleophobicity. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2016, 374, 20160185.	3.4	53
42	Scale Effect in Dry Friction During Multiple-Asperity Contact. <i>Journal of Tribology</i> , 2005, 127, 37-46.	1.9	49
43	Physical chemistry of self-organization and self-healing in metals. <i>Physical Chemistry Chemical Physics</i> , 2009, 11, 9530.	2.8	49
44	Surface self-organization: From wear to self-healing in biological and technical surfaces. <i>Applied Surface Science</i> , 2010, 256, 3982-3987.	6.1	49
45	Characterization of Self-Assembled 2D Patterns with Voronoi Entropy. <i>Entropy</i> , 2018, 20, 956.	2.2	49
46	Phase behavior of capillary bridges: towards nanoscale water phase diagram. <i>Physical Chemistry Chemical Physics</i> , 2008, 10, 2137.	2.8	47
47	Lotus Versus Rose: Biomimetic Surface Effects. <i>Green Energy and Technology</i> , 2012, , 25-40.	0.6	46
48	Effects of Contact Geometry on Pull-Off Force Measurements with a Colloidal Probe. <i>Langmuir</i> , 2008, 24, 743-748.	3.5	43
49	Biomimetics in Materials Science. <i>Springer Series in Materials Science</i> , 2012, , .	0.6	42
50	Small Levitating Ordered Droplet Clusters: Stability, Symmetry, and Voronoi Entropy. <i>Journal of Physical Chemistry Letters</i> , 2017, 8, 5599-5602.	4.6	41
51	Oil as a Lubricant in the Ancient Middle East. <i>Tribology Online</i> , 2007, 2, 44-49.	0.9	40
52	Contact angle hysteresis in multiphase systems. <i>Colloid and Polymer Science</i> , 2013, 291, 329-338.	2.1	39
53	Self-organization at the frictional interface for green tribology. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2010, 368, 4755-4774.	3.4	37
54	Analysis of the friction and wear of graphene reinforced aluminum metal matrix composites using machine learning models. <i>Tribology International</i> , 2022, 170, 107527.	5.9	37

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55	Ultraslow frictional sliding and the stick-slip transition. <i>Applied Physics Letters</i> , 2018, 113, .	3.3	32
56	Einstein's Viscosity Equation for Nanolubricated Friction. <i>Langmuir</i> , 2018, 34, 12968-12973.	3.5	32
57	Machine learning models of the transition from solid to liquid lubricated friction and wear in aluminum-graphite composites. <i>Tribology International</i> , 2022, 165, 107326.	5.9	32
58	Metal Matrix Composites for Sustainable Lotus-Effect Surfaces. <i>Langmuir</i> , 2011, 27, 14419-14424.	3.5	31
59	Geometric Interpretation of Surface Tension Equilibrium in Superhydrophobic Systems. <i>Entropy</i> , 2015, 17, 4684-4700.	2.2	28
60	Effect of Microstructure on Contact Angle and Corrosion of Ductile Iron: Iron-Graphite Composite. <i>Langmuir</i> , 2019, 35, 16120-16129.	3.5	26
61	Modeling Evaporation of Water Droplets as Applied to Survival of Airborne Viruses. <i>Atmosphere</i> , 2020, 11, 965.	2.3	26
62	Droplet clusters: nature-inspired biological reactors and aerosols. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2019, 377, 20190121.	3.4	25
63	Effect of external electric field on dynamics of levitating water droplets. <i>International Journal of Thermal Sciences</i> , 2020, 153, 106375.	4.9	25
64	On relative contribution of electrostatic and aerodynamic effects to dynamics of a levitating droplet cluster. <i>International Journal of Heat and Mass Transfer</i> , 2019, 133, 712-717.	4.8	24
65	Lotus Effect and Friction: Does Nonsticky Mean Slippery?. <i>Biomimetics</i> , 2020, 5, 28.	3.3	24
66	Lotus Effect: Surfaces with Roughness-Induced Superhydrophobicity, Self-Cleaning, and Low Adhesion. , 2010, , 1437-1524.		23
67	Tribological and Wetting Properties of TiO ₂ Based Hydrophobic Coatings for Ceramics. <i>Journal of Tribology</i> , 2019, 141, .	1.9	23
68	Capillary effects and instabilities in nanocontacts. <i>Ultramicroscopy</i> , 2008, 108, 1181-1185.	1.9	22
69	Friction-Induced Pattern Formation and Turing Systems. <i>Langmuir</i> , 2011, 27, 4772-4779.	3.5	22
70	Study of contact angle hysteresis using the Cellular Potts Model. <i>Physical Chemistry Chemical Physics</i> , 2013, 15, 2749.	2.8	22
71	Stable cluster of identical water droplets formed under the infrared irradiation: Experimental study and theoretical modeling. <i>International Journal of Heat and Mass Transfer</i> , 2020, 161, 120255.	4.8	22
72	Do hierarchical mechanisms of superhydrophobicity lead to self-organized criticality?. <i>Scripta Materialia</i> , 2008, 59, 941-944.	5.2	19

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73	Machine-learning methods to predict the wetting properties of iron-based composites. <i>Surface Innovations</i> , 2021, 9, 111-119.	2.3	19
74	Scaling of Monte Carlo simulations of grain growth in metals. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2009, 17, 025004.	2.0	18
75	Vibro-levitation and inverted pendulum: parametric resonance in vibrating droplets and soft materials. <i>Soft Matter</i> , 2014, 10, 4633-4639.	2.7	18
76	Continuous Symmetry Measure vs Voronoi Entropy of Droplet Clusters. <i>Journal of Physical Chemistry C</i> , 2021, 125, 2431-2436.	3.1	18
77	Vibrations and spatial patterns in biomimetic surfaces: using the shark-skin effect to control blood clotting. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2016, 374, 20160133.	3.4	17
78	A new hybrid robust control of MEMS gyroscope. <i>Microsystem Technologies</i> , 2020, 26, 853-860.	2.0	17
79	Langevin Approach to Modeling of Small Levitating Ordered Droplet Clusters. <i>Journal of Physical Chemistry Letters</i> , 2018, 9, 3834-3838.	4.6	15
80	Predictive Analysis of Wettability of Al-Si Based Multiphase Alloys and Aluminum Matrix Composites by Machine Learning and Physical Modeling. <i>Langmuir</i> , 2021, 37, 3766-3777.	3.5	15
81	Monte Carlo simulation of grain growth of single-phase systems with anisotropic boundary energies. <i>International Journal of Mechanical Sciences</i> , 2009, 51, 434-442.	6.7	14
82	Wear-Induced Microtopography Evolution and Wetting Properties of Self-Cleaning, Lubricating and Healing Surfaces. <i>Journal of Adhesion Science and Technology</i> , 2011, 25, 1337-1359.	2.6	14
83	Self-Arranged Levitating Droplet Clusters: A Reversible Transition from Hexagonal to Chain Structure. <i>Langmuir</i> , 2019, 35, 15330-15334.	3.5	13
84	Oscillatory Motion of a Droplet Cluster. <i>Journal of Physical Chemistry C</i> , 2019, 123, 23572-23576.	3.1	13
85	Clustering and self-organization in small-scale natural and artificial systems. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2020, 378, 20190443.	3.4	13
86	Survival of Virus Particles in Water Droplets: Hydrophobic Forces and Landauer's Principle. <i>Entropy</i> , 2021, 23, 181.	2.2	13
87	Triboinformatics: machine learning algorithms and data topology methods for tribology. <i>Surface Innovations</i> , 2022, 10, 229-242.	2.3	13
88	Revisiting lowest possible surface energy of a solid. <i>Surface Topography: Metrology and Properties</i> , 2017, 5, 045001.	1.6	11
89	Evaporation of droplets capable of bearing viruses airborne and on hydrophobic surfaces. <i>Journal of Applied Physics</i> , 2021, 129, .	2.5	11
90	Modelling size, load and velocity effect on friction at micro/nanoscale. <i>International Journal of Surface Science and Engineering</i> , 2007, 1, 22.	0.4	10

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91	Green tribology. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2010, 368, 4675-4676.	3.4	10
92	Method of separation of vibrational motions for applications involving wetting, superhydrophobicity, and microparticle extraction. Physical Review Fluids, 2020, 5, .	2.5	10
93	Stability of Frictional Sliding With the Coefficient of Friction Depended on the Temperature. Journal of Tribology, 2012, 134, .	1.9	9
94	Impact of Surfactants on the Formation and Properties of Droplet Clusters. Langmuir, 2020, 36, 11154-11160.	3.5	9
95	Symmetry of small clusters of levitating water droplets. Physical Chemistry Chemical Physics, 2020, 22, 12239-12244.	2.8	9
96	Allometric scaling law and ergodicity breaking in the vascular system. Microfluidics and Nanofluidics, 2020, 24, 1.	2.2	9
97	Topological Data Analysis of Nanoscale Roughness in Brass Samples. ACS Applied Materials & Interfaces, 2022, 14, 2351-2359.	8.0	9
98	Lotus Effect and Self-Cleaning. Springer Series in Materials Science, 2011, , 319-341.	0.6	8
99	Biomimetic approaches for green tribology: from the lotus effect to blood flow control. Surface Topography: Metrology and Properties, 2015, 3, 034001.	1.6	8
100	Frictional Properties of a Nanocomposite Material With a Linear Polyimide Matrix and Tungsten Diselinate Nanoparticle Reinforcement. Journal of Tribology, 2019, 141, .	1.9	8
101	Scaling in Colloidal and Biological Networks. Entropy, 2020, 22, 622.	2.2	8
102	Ternary Logic of Motion to Resolve Kinematic Frictional Paradoxes. Entropy, 2019, 21, 620.	2.2	7
103	Separation of motions and vibrational separation of fractions for biocide brass. Ultrasonics Sonochemistry, 2021, 80, 105817.	8.2	7
104	Multiscale effects in crystal grain growth and physical properties of metals. Physical Chemistry Chemical Physics, 2008, 10, 5192.	2.8	5
105	Thermodynamic Principles of Self-Healing Metallic Materials. Springer Series in Materials Science, 2011, , 25-51.	0.6	5
106	Vibrations and Spatial Patterns Change Effective Wetting Properties of Superhydrophobic and Regular Membranes. Biomimetics, 2016, 1, 4.	3.3	5
107	Topological data analysis for friction modeling. Europhysics Letters, 2021, 135, 56001.	2.0	5
108	Application of Triboinformatics Approach in Tribological Studies of Aluminum Alloys and Aluminum-Graphite Metal Matrix Composites. Minerals, Metals and Materials Series, 2022, , 41-51.	0.4	5

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109	Synthesis of ZnO/TiO ₂ -Based Hydrophobic Antimicrobial Coatings for Steel and Their Roughness, Wetting, and Tribological Characterization. <i>Journal of Tribology</i> , 2022, 144, .	1.9	5
110	Topological bio-scaling analysis as a universal measure of protein folding. <i>Royal Society Open Science</i> , 2022, 9, .	2.4	5
111	Thermal conditions for the formation of self-assembled cluster of droplets over the water surface and diversity of levitating droplet clusters. <i>Heat and Mass Transfer</i> , 0, , .	2.1	4
112	Response to the comment on "Nanoscale water capillary bridges under deeply negative pressure"™ by Caupin et al.. <i>Chemical Physics Letters</i> , 2008, 463, 286-287.	2.6	3
113	Towards the "Green Tribology": Biomimetic Surfaces, Biodegradable Lubrication, and Renewable Energy. , 2010, , .		3
114	Friction and Dynamics of Verge and Foliot: How the Invention of the Pendulum Made Clocks Much More Accurate. <i>Applied Mechanics</i> , 2020, 1, 111-122.	1.5	3
115	Vertical oscillations of droplets in small droplet clusters. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 2021, 628, 127271.	4.7	3
116	Ecological Aspects of Water Desalination Improving Surface Properties of Reverse Osmosis Membranes. <i>Green Energy and Technology</i> , 2012, , 531-564.	0.6	3
117	Beyond the Sticking Point. <i>Mechanical Engineering</i> , 2018, 140, 30-35.	0.1	3
118	Connecting Sacred and Mundane: From Bilingualism to Hermeneutics in Hebrew Epitaphs. <i>Studia Humana</i> , 2017, 6, 96-106.	0.2	3
119	Cultural implications of biomimetics: changing the perception of living and non-living. <i>MOJ Applied Bionics and Biomechanics</i> , 2018, 2, .	0.3	3
120	Nano-engineered Superhydrophobic and Overhydrophobic Concrete. , 2015, , 443-449.		2
121	Logical and information aspects in surface science: friction, capillarity, and superhydrophobicity. <i>International Journal of Parallel, Emergent and Distributed Systems</i> , 2018, 33, 307-318.	1.0	2
122	When Bubbles Are Not Spherical: Artificial Intelligence Analysis of Ultrasonic Cavitation Bubbles in Solutions of Varying Concentrations. <i>Journal of Physical Chemistry B</i> , 2022, 126, 3161-3169.	2.6	2
123	A hierarchical levitating cluster containing transforming small aggregates of water droplets. <i>Microfluidics and Nanofluidics</i> , 2022, 26, .	2.2	2
124	On the accuracy of Monte Carlo Potts models for grain growth. <i>Journal of Computational Methods in Sciences and Engineering</i> , 2009, 8, 227-243.	0.2	1
125	Wear-Resistant and Oleophobic Biomimetic Composite Materials. <i>Green Energy and Technology</i> , 2012, , 149-172.	0.6	1
126	Revisiting Epigraphic Evidence of the Oldest Synagogue in Morocco in Volubilis. <i>Arts</i> , 2019, 8, 127.	0.3	1

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127	Surfaces for water-related applications. <i>Surface Topography: Metrology and Properties</i> , 2019, 7, 010201.	1.6	1
128	The Effect of Surface Roughness and Composition on Wetting and Corrosion of Al ⁺ Si Alloys. <i>Israel Journal of Chemistry</i> , 2020, 60, 577-585.	2.3	1
129	Case Study of Self-Healing in Metallic Composite with Embedded Low Melting Temperature Solders. <i>Springer Series in Materials Science</i> , 2011, , 53-73.	0.6	1
130	Self-Organization at the Frictional Interface. <i>Green Energy and Technology</i> , 2012, , 41-78.	0.6	1
131	Green Tribology, its History, Challenges, and Perspectives. <i>Green Energy and Technology</i> , 2012, , 3-22.	0.6	1
132	Not by Firkowicz's Fault: Daniel Chwolson's Comic Blunders in Research of Hebrew Epigraphy of the Crimea and Caucasus, and their Impact on Jewish Studies in Russia. <i>Acta Orientalia</i> , 2020, 73, 633-668.	0.1	1
133	Friction and wear of polyetheretherketone (PEEK) samples with different melt flow indices. <i>Journal of Tribology</i> , 0, , 1-11.	1.9	1
134	Thermal conditions for the formation of self-assembled cluster of droplets over the water surface. <i>Journal of Physics: Conference Series</i> , 2021, 2116, 012038.	0.4	1
135	Micro-/Nanostructured Icephobic Materials. , 2016, , 2125-2128.		0
136	Thermodynamic Methods in Tribology and Friction-Induced Self-Organization. <i>Springer Series in Materials Science</i> , 2011, , 153-194.	0.6	0
137	Micro/Nanostructured Icephobic Materials. , 2015, , 1-4.		0
138	Self-Repairing Materials. , 2016, , 3619-3622.		0
139	Translation or Divination? Sacred Languages and Bilingualism in Judaism and Lucumã-Traditions. <i>Religions</i> , 2022, 13, 57.	0.6	0
140	Branched droplet clusters and the Kramers theorem. <i>Physical Review E</i> , 2022, 105, .	2.1	0