Michael Nosonovsky

List of Publications by Year
in descending order

140 papers	7,860 citations	50273 46 h-index	51602 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. Current Opinion in Colloid and Interface Science, 2009, 14, 270-280.	7.4	531
2	Multiscale Roughness and Stability of Superhydrophobic Biomimetic Interfaces. Langmuir, 2007, 23, 3157-3161.	3.5	458
3	The rose petal effect and the modes of superhydrophobicity. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2010, 368, 4713-4728.	3.4	418
4	Why Superhydrophobic Surfaces Are Not Always Icephobic. ACS Nano, 2012, 6, 8488-8491.	14.6	339
5	Biomimetic Superhydrophobic Surfaces:â€‰ Multiscale Approach. Nano Letters, 2007, 7, 2633-2637.	9.1	338
6	From superhydrophobicity to icephobicity: forces and interaction analysis. Scientific Reports, 2013, 3, 2194.	3.3	273
7	Roughness optimization for biomimetic superhydrophobic surfaces. Microsystem Technologies, 2005, 11, 535-549.	2.0	270
8	Biologically Inspired Surfaces: Broadening the Scope of Roughness**. Advanced Functional Materials, 2008, 18, 843-855.	14.9	244
9	Hierarchical roughness optimization for biomimetic superhydrophobic surfaces. Ultramicroscopy, 2007, 107, 969-979.	1.9	236
10	Multiscale friction mechanisms and hierarchical surfaces in nano- and bio-tribology. Materials Science and Engineering Reports, 2007, 58, 162-193.	31.8	235
11	On the Range of Applicability of the Wenzel and Cassie Equations. Langmuir, 2007, 23, 9919-9920.	3.5	197
12	Multiscale Dissipative Mechanisms and Hierarchical Surfaces. Nanoscience and Technology, 2008, , .	1.5	195
13	Patterned Nonadhesive Surfaces:â€‰ Superhydrophobicity and Wetting Regime Transitions. Langmuir, 2008, 24, 1525-1533.	3.5	193
14	Slippery when wetted. Nature, 2011, 477, 412-413.	27.8	175
15	Self-Assembling Particle-Siloxane Coatings for Superhydrophobic Concrete. ACS Applied Materials & Interfaces, 2013, 5, 13284-13294.	8.0	150
16	Roughness-induced superhydrophobicity: a way to design non-adhesive surfaces. Journal of Physics Condensed Matter, 2008, 20, 225009.	1.8	144
17	Towards optimization of patterned superhydrophobic surfaces. Journal of the Royal Society Interface, 2007, 4, 643-648.	3.4	132
18	Model for solid-liquid and solid-solid friction of rough surfaces with adhesion hysteresis. Journal of Chemical Physics, 2007, 126, 224701.	3.0	123

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19	Scale effects in friction using strain gradient plasticity and dislocation-assisted sliding (microslip). Acta Materialia, 2003, 51, 4331-4345.	7.9	107
20	Green tribology: principles, research areas and challenges. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2010, 368, 4677-4694.	3.4	94
21	A model for diffusion-driven hydrophobic recovery in plasma treated polymers. Applied Surface Science, 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). Acta Materialia, 2004, 52, 2461-2474.	7.9	90
23	Dynamics of Droplet Impact on Hydrophobic/Icephobic Concrete with the Potential for Superhydrophobicity. Langmuir, 2015, 31, 1437-1444.	3.5	88
24	Wetting Transitions in Two-, Three-, and Four-Phase Systems. Langmuir, 2012, 28, 2173-2180.	3.5	83
25	Anti-Icing Superhydrophobic Surfaces: Controlling Entropic Molecular Interactions to Design Novel Icephobic Concrete. Entropy, 2016, 18, 132.	2.2	79
26	Scale effects in dry and wet friction, wear, and interface temperature. Nanotechnology, 2004, 15, 749-761.	2.6	78
27	Thermodynamics of surface degradation, self-organization and self-healing for biomimetic surfaces. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2009, 367, 1607-1627.	3.4	77
28	Energy transitions in superhydrophobicity: low adhesion, easy flow and bouncing. Journal of Physics Condensed Matter, 2008, 20, 395005.	1.8	76
29	Nanoscale water capillary bridges under deeply negative pressure. Chemical Physics Letters, 2008, 451, 88-92.	2.6	75
30	Entropy in Tribology: in the Search for Applications. Entropy, 2010, 12, 1345-1390.	2.2	75
31	Multiscale effects and capillary interactions in functional biomimetic surfaces for energy conversion and green engineering. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2009, 367, 1511-1539.	3.4	72
32	Triboinformatic modeling of dry friction and wear of aluminum base alloys using machine learning algorithms. Tribology International, 2021, 161, 107065.	5.9	63
33	Wetting Transitions in Underwater Oleophobic Surface of Brass. Advanced Materials, 2012, 24, 5963-5966.	21.0	62
34	Stochastic model for metastable wetting of roughness-induced superhydrophobic surfaces. Microsystem Technologies, 2006, 12, 231-237.	2.0	61
35	Wetting of rough three-dimensional superhydrophobic surfaces. Microsystem Technologies, 2006, 12, 273-281.	2.0	61
36	Self-assembled levitating clusters of water droplets: pattern-formation and stability. Scientific Reports, 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. Langmuir, 2014, 30, 9423-9429.	3.5	59
38	Coupling of surface energy with electric potential makes superhydrophobic surfaces corrosion-resistant. Physical Chemistry Chemical Physics, 2015, 17, 24988-24997.	2.8	57
39	Triboinformatics Approach for Friction and Wear Prediction of Al-Graphite Composites Using Machine Learning Methods. Journal of Tribology, 2022, 144, .	1.9	56
40	Surface micro/nanotopography, wetting properties and the potential for biomimetic icephobicity of skunk cabbage <i>Symplocarpus foetidus</i>. Soft Matter, 2014, 10, 7797-7803.	2.7	53
41	Why re-entrant surface topography is needed for robust oleophobicity. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20160185.	3.4	53
42	Scale Effect in Dry Friction During Multiple-Asperity Contact. Journal of Tribology, 2005, 127, 37-46.	1.9	49
43	Physical chemistry of self-organization and self-healing in metals. Physical Chemistry Chemical Physics, 2009, 11, 9530.	2.8	49
44	Surface self-organization: From wear to self-healing in biological and technical surfaces. Applied Surface Science, 2010, 256, 3982-3987.	6.1	49
45	Characterization of Self-Assembled 2D Patterns with Voronoi Entropy. Entropy, 2018, 20, 956.	2.2	49
46	Phase behavior of capillary bridges: towards nanoscale water phase diagram. Physical Chemistry Chemical Physics, 2008, 10, 2137.	2.8	47
47	Lotus Versus Rose: Biomimetic Surface Effects. Green Energy and Technology, 2012, , 25-40.	0.6	46
48	Effects of Contact Geometry on Pull-Off Force Measurements with a Colloidal Probe. Langmuir, 2008, 24, 743-748.	3.5	43
49	Biomimetics in Materials Science. Springer Series in Materials Science, 2012, , .	0.6	42
50	Small Levitating Ordered Droplet Clusters: Stability, Symmetry, and Voronoi Entropy. Journal of Physical Chemistry Letters, 2017, 8, 5599-5602.	4.6	41
51	Oil as a Lubricant in the Ancient Middle East. Tribology Online, 2007, 2, 44-49.	0.9	40
52	Contact angle hysteresis in multiphase systems. Colloid and Polymer Science, 2013, 291, 329-338.	2.1	39
53	Self-organization at the frictional interface for green tribology. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 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. Tribology International, 2022, 170, 107527.	5.9	37

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55	Ultraslow frictional sliding and the stick-slip transition. Applied Physics Letters, 2018, 113, .	3.3	32
56	Einsteinâ€™s Viscosity Equation for Nanolubricated Friction. Langmuir, 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. Tribology International, 2022, 165, 107326.	5.9	32
58	Metal Matrix Composites for Sustainable Lotus-Effect Surfaces. Langmuir, 2011, 27, 14419-14424.	3.5	31
59	Geometric Interpretation of Surface Tension Equilibrium in Superhydrophobic Systems. Entropy, 2015, 17, 4684-4700.	2.2	28
60	Effect of Microstructure on Contact Angle and Corrosion of Ductile Iron: Ironâ€“Graphite Composite. Langmuir, 2019, 35, 16120-16129.	3.5	26
61	Modeling Evaporation of Water Droplets as Applied to Survival of Airborne Viruses. Atmosphere, 2020, 11, 965.	2.3	26
62	Droplet clusters: nature-inspired biological reactors and aerosols. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20190121.	3.4	25
63	Effect of external electric field on dynamics of levitating water droplets. International Journal of Thermal Sciences, 2020, 153, 106375.	4.9	25
64	On relative contribution of electrostatic and aerodynamic effects to dynamics of a levitating droplet cluster. International Journal of Heat and Mass Transfer, 2019, 133, 712-717.	4.8	24
65	Lotus Effect and Friction: Does Nonsticky Mean Slippery?. Biomimetics, 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 TiO2 Based Hydrophobic Coatings for Ceramics. Journal of Tribology, 2019, 141, .	1.9	23
68	Capillary effects and instabilities in nanocontacts. Ultramicroscopy, 2008, 108, 1181-1185.	1.9	22
69	Friction-Induced Pattern Formation and Turing Systems. Langmuir, 2011, 27, 4772-4779.	3.5	22
70	Study of contact angle hysteresis using the Cellular Potts Model. Physical Chemistry Chemical Physics, 2013, 15, 2749.	2.8	22
71	Stable cluster of identical water droplets formed under the infrared irradiation: Experimental study and theoretical modeling. International Journal of Heat and Mass Transfer, 2020, 161, 120255.	4.8	22
72	Do hierarchical mechanisms of superhydrophobicity lead to self-organized criticality?. Scripta Materialia, 2008, 59, 941-944.	5.2	19

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73	Machine-learning methods to predict the wetting properties of iron-based composites. Surface Innovations, 2021, 9, 111-119.	2.3	19
74	Scaling of Monte Carlo simulations of grain growth in metals. Modelling and Simulation in Materials Science and Engineering, 2009, 17, 025004.	2.0	18
75	Vibro-levitation and inverted pendulum: parametric resonance in vibrating droplets and soft materials. Soft Matter, 2014, 10, 4633-4639.	2.7	18
76	Continuous Symmetry Measure vs Voronoi Entropy of Droplet Clusters. Journal of Physical Chemistry C, 2021, 125, 2431-2436.	3.1	18
77	Vibrations and spatial patterns in biomimetic surfaces: using the shark-skin effect to control blood clotting. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20160133.	3.4	17
78	A new hybrid robust control of MEMS gyroscope. Microsystem Technologies, 2020, 26, 853-860.	2.0	17
79	Langevin Approach to Modeling of Small Levitating Ordered Droplet Clusters. Journal of Physical Chemistry Letters, 2018, 9, 3834-3838.	4.6	15
80	Predictive Analysis of Wettability of Alâ€“Si Based Multiphase Alloys and Aluminum Matrix Composites by Machine Learning and Physical Modeling. Langmuir, 2021, 37, 3766-3777.	3.5	15
81	Monte Carlo simulation of grain growth of single-phase systems with anisotropic boundary energies. International Journal of Mechanical Sciences, 2009, 51, 434-442.	6.7	14
82	Wear-Induced Microtopography Evolution and Wetting Properties of Self-Cleaning, Lubricating and Healing Surfaces. Journal of Adhesion Science and Technology, 2011, 25, 1337-1359.	2.6	14
83	Self-Arranged Levitating Droplet Clusters: A Reversible Transition from Hexagonal to Chain Structure. Langmuir, 2019, 35, 15330-15334.	3.5	13
84	Oscillatory Motion of a Droplet Cluster. Journal of Physical Chemistry C, 2019, 123, 23572-23576.	3.1	13
85	Clustering and self-organization in small-scale natural and artificial systems. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190443.	3.4	13
86	Survival of Virus Particles in Water Droplets: Hydrophobic Forces and Landauerâ€™s Principle. Entropy, 2021, 23, 181.	2.2	13
87	Triboinformatics: machine learning algorithms and data topology methods for tribology. Surface Innovations, 2022, 10, 229-242.	2.3	13
88	Revisiting lowest possible surface energy of a solid. Surface Topography: Metrology and Properties, 2017, 5, 045001.	1.6	11
89	Evaporation of droplets capable of bearing viruses airborne and on hydrophobic surfaces. Journal of Applied Physics, 2021, 129, .	2.5	11
90	Modelling size, load and velocity effect on friction at micro/nanoscale. International Journal of Surface Science and Engineering, 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 Diselinide 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/TiO2-Based Hydrophobic Antimicrobial Coatings for Steel and Their Roughness, Wetting, and Tribological Characterization. Journal of Tribology, 2022, 144, .	1.9	5
110	Topological bio-scaling analysis as a universal measure of protein folding. Royal Society Open Science, 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. Heat and Mass Transfer, 0, , .	2.1	4
112	Response to the comment on â€˜Nanoscale water capillary bridges under deeply negative pressureâ€™ by Caupin et al.. Chemical Physics Letters, 2008, 463, 286-287.	2.6	3
113	Towards the â€œGreen Tribologyâ€: 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. Applied Mechanics, 2020, 1, 111-122.	1.5	3
115	Vertical oscillations of droplets in small droplet clusters. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2021, 628, 127271.	4.7	3
116	Ecological Aspects of Water Desalination Improving Surface Properties of Reverse Osmosis Membranes. Green Energy and Technology, 2012, , 531-564.	0.6	3
117	Beyond the Sticking Point. Mechanical Engineering, 2018, 140, 30-35.	0.1	3
118	Connecting Sacred and Mundane: From Bilingualism to Hermeneutics in Hebrew Epitaphs. Studia Humana, 2017, 6, 96-106.	0.2	3
119	Cultural implications of biomimetics: changing the perception of living and non-living. MOJ Applied Bionics and Biomechanics, 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. International Journal of Parallel, Emergent and Distributed Systems, 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. Journal of Physical Chemistry B, 2022, 126, 3161-3169.	2.6	2
123	A hierarchical levitating cluster containing transforming small aggregates of water droplets. Microfluidics and Nanofluidics, 2022, 26, .	2.2	2
124	On the accuracy of Monte Carlo Potts models for grain growth. Journal of Computational Methods in Sciences and Engineering, 2009, 8, 227-243.	0.2	1
125	Wear-Resistant and Oleophobic Biomimetic Composite Materials. Green Energy and Technology, 2012, , 149-172.	0.6	1
126	Revisiting Epigraphic Evidence of the Oldest Synagogue in Morocco in Volubilis. Arts, 2019, 8, 127.	0.3	1

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127	Surfaces for water-related applications. Surface Topography: Metrology and Properties, 2019, 7, 010201.	1.6	1
128	The Effect of Surface Roughness and Composition on Wetting and Corrosion of Alâˆ'Si Alloys. Israel Journal of Chemistry, 2020, 60, 577-585.	2.3	1
129	Case Study of Self-Healing in Metallic Composite with Embedded Low Melting Temperature Solders. Springer Series in Materials Science, 2011, , 53-73.	0.6	1
130	Self-Organization at the Frictional Interface. Green Energy and Technology, 2012, , 41-78.	0.6	1
131	Green Tribology, its History, Challenges, and Perspectives. Green Energy and Technology, 2012, , 3-22.	0.6	1
132	Not by Firkowiczâ€™s Fault: Daniel Chwolsonâ€™s Comic Blunders in Research of Hebrew Epigraphy of the Crimea and Caucasus, and their Impact on Jewish Studies in Russia. Acta Orientalia, 2020, 73, 633-668.	0.1	1
133	Friction and wear of polyetheretherketone (PEEK) samples with different melt flow indices. Journal of Tribology, 0, , 1-11.	1.9	1
134	Thermal conditions for the formation of self-assembled cluster of droplets over the water surface. Journal of Physics: Conference Series, 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. Springer Series in Materials Science, 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. Religions, 2022, 13, 57.	0.6	0
140	Branched droplet clusters and the Kramers theorem. Physical Review E, 2022, 105, .	2.1	0