Vadym N Mochalin

List of Publications by Year
in descending order

83 papers	21,798 citations	66234 42 h-index	71532 76 g-index
84 all docs	84 docs citations	84 times ranked	21968 citing authors

#	Article	IF	Citations
1	25th Anniversary Article: MXenes: A New Family of Twoâ€Dimensional Materials. Advanced Materials, 2014, 26, 992-1005.	11.1	4,547
2	Ultrahigh-power micrometre-sized supercapacitors based on onion-like carbon. Nature Nanotechnology, 2010, 5, 651-654.	15.6	2,451
3	The properties and applications of nanodiamonds. Nature Nanotechnology, 2012, 7, 11-23.	15.6	2,327
4	Intercalation and delamination of layered carbides and carbonitrides. Nature Communications, 2013, 4, 1716.	5.8	2,095
5	Role of Surface Structure on Li-Ion Energy Storage Capacity of Two-Dimensional Transition-Metal Carbides. Journal of the American Chemical Society, 2014, 136, 6385-6394.	6.6	1,164
6	Control of sp2/sp3Carbon Ratio and Surface Chemistry of Nanodiamond Powders by Selective Oxidation in Air. Journal of the American Chemical Society, 2006, 128, 11635-11642.	6.6	809
7	Dispersions of Two-Dimensional Titanium Carbide MXene in Organic Solvents. Chemistry of Materials, 2017, 29, 1632-1640.	3.2	667
8	Boron nitride colloidal solutions, ultralight aerogels and freestanding membranes through one-step exfoliation and functionalization. Nature Communications, 2015, 6, 8849.	5.8	658
9	Dye adsorption and decomposition on two-dimensional titanium carbide in aqueous media. Journal of Materials Chemistry A, 2014, 2, 14334-14338.	5.2	602
10	Wet Chemistry Route to Hydrophobic Blue Fluorescent Nanodiamond. Journal of the American Chemical Society, 2009, 131, 4594-4595.	6.6	381
11	Review: carbon onions for electrochemical energy storage. Journal of Materials Chemistry A, 2016, 4, 3172-3196.	5.2	360
12	Fluorescent PLLA-nanodiamond composites for bone tissue engineering. Biomaterials, 2011, 32, 87-94.	5.7	352
13	Saturable Absorption in 2D Ti₃C₂ MXene Thin Films for Passive Photonic Diodes. Advanced Materials, 2018, 30, 1705714.	11.1	332
14	Hydrolysis of 2D Transition-Metal Carbides (MXenes) in Colloidal Solutions. Inorganic Chemistry, 2019, 58, 1958-1966.	1.9	280
15	Nanodiamond-Polymer Composite Fibers and Coatings. ACS Nano, 2009, 3, 363-369.	7.3	278
16	Metallic MXenes: A new family of materials for flexible triboelectric nanogenerators. Nano Energy, 2018, 44, 103-110.	8.2	273
17	Covalent Incorporation of Aminated Nanodiamond into an Epoxy Polymer Network. ACS Nano, 2011, 5, 7494-7502.	7.3	262
18	Contribution of Functional Groups to the Raman Spectrum of Nanodiamond Powders. Chemistry of Materials, 2009, 21, 273-279.	3.2	240

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19	Molecular dynamic study of the mechanical properties of two-dimensional titanium carbides Ti_{n+1}C_n (MXenes). Nanotechnology, 2015, 26, 265705.	1.3	232
20	Biomedical applications of nanodiamond (Review). Nanotechnology, 2017, 28, 252001.	1.3	230
21	Environment-Sensitive Photoresponse of Spontaneously Partially Oxidized Ti₃C₂ MXene Thin Films. ACS Nano, 2018, 12, 6109-6116.	7.3	214
22	Mechanical properties and biomineralization of multifunctional nanodiamond-PLLA composites for bone tissue engineering. Biomaterials, 2012, 33, 5067-5075.	5.7	206
23	Alkylammonium Cation Intercalation into Ti₃C₂ (MXene): Effects on Properties and Ion-Exchange Capacity Estimation. Chemistry of Materials, 2017, 29, 1099-1106.	3.2	188
24	Nanodiamondâ€“polymer composites. Diamond and Related Materials, 2015, 58, 161-171.	1.8	187
25	Adsorption of Drugs on Nanodiamond: Toward Development of a Drug Delivery Platform. Molecular Pharmaceutics, 2013, 10, 3728-3735.	2.3	154
26	Deaggregation of Nanodiamond Powders Using Salt- and Sugar-Assisted Milling. ACS Applied Materials & Interfaces, 2010, 2, 3289-3294.	4.0	147
27	Iridium Dihydroxybipyridine Complexes Show That Ligand Deprotonation Dramatically Speeds Rates of Catalytic Water Oxidation. Inorganic Chemistry, 2013, 52, 9175-9183.	1.9	142
28	Carbon nanoscrolls produced from acceptor-type graphite intercalation compounds. Carbon, 2007, 45, 2797-2800.	5.4	136
29	Tuning Endothelial Permeability with Functionalized Nanodiamonds. ACS Nano, 2016, 10, 1170-1181.	7.3	129
30	Bending rigidity of two-dimensional titanium carbide (MXene) nanoribbons: A molecular dynamics study. Computational Materials Science, 2018, 143, 418-424.	1.4	129
31	Noncatalytic synthesis of carbon nanotubes, graphene and graphite on SiC. Carbon, 2008, 46, 841-849.	5.4	123
32	Twoâ€Ðimensional Materials: 25th Anniversary Article: MXenes: A New Family of Twoâ€Ðimensional Materials (Adv. Mater. 7/2014). Advanced Materials, 2014, 26, 982-982.	11.1	106
33	Effect of Surface Chemistry on the Fluorescence of Detonation Nanodiamonds. ACS Nano, 2017, 11, 10924-10934.	7.3	98
34	The adsorption of tetracycline and vancomycin onto nanodiamond with controlled release. Journal of Colloid and Interface Science, 2016, 468, 253-261.	5.0	83
35	Unleashing the potential of Ti 2 CT x MXene as a pulse modulator for mid-infrared fiber lasers. 2D Materials, 2019, 6, 045038.	2.0	83
36	Adhesion of two-dimensional titanium carbides (MXenes) and graphene to silicon. Nature Communications, 2019, 10, 3014.	5.8	81

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37	Dynamical Control over Terahertz Electromagnetic Interference Shielding with 2D Ti₃C₂T_y MXene by Ultrafast Optical Pulses. Nano Letters, 2020, 20, 636-643.	4.5	75
38	Understanding Chemistry of Two-Dimensional Transition Metal Carbides and Carbonitrides (MXenes) with Gas Analysis. ACS Nano, 2020, 14, 10251-10257.	7.3	74
39	Salt-Assisted Ultrasonic Deaggregation of Nanodiamond. ACS Applied Materials & Interfaces, 2016, 8, 25461-25468.	4.0	70
40	Electrical conductivity of thermally hydrogenated nanodiamond powders. Journal of Applied Physics, 2013, 113, .	1.1	59
41	Maximizing Young's modulus of aminated nanodiamond-epoxy composites measured in compression. Polymer, 2012, 53, 5965-5971.	1.8	54
42	Equilibrium and non-equilibrium free carrier dynamics in 2D Ti ₃ C ₂ T _x MXenes: THz spectroscopy study. 2D Materials, 2018, 5, 035043.	2.0	53
43	Achieving superlubricity with 2D transition metal carbides (MXenes) and MXene/graphene coatings. Materials Today Advances, 2021, 9, 100133.	2.5	44
44	Layer-by-Layer Oxidation for Decreasing the Size of Detonation Nanodiamond. Chemistry of Materials, 2014, 26, 3479-3484.	3.2	42
45	Thermochemistry of nanodiamond terminated by oxygen containing functional groups. Carbon, 2014, 80, 544-550.	5.4	42
46	Ti₂CT_x MXeneâ€based allâ€optical modulator. InformaÄnÃ-MateriÃ¡ly, 2020, 2, 601-609.	8.5	39
47	Adhesion Between MXenes and Other 2D Materials. ACS Applied Materials & Interfaces, 2021, 13, 4682-4691.	4.0	39
48	Manufacturing Nanosized Fenofibrate by Salt Assisted Milling. Pharmaceutical Research, 2009, 26, 1365-1370.	1.7	31
49	Thermal stability of two-dimensional titanium carbides Tin+1Cn (MXenes) from classical molecular dynamics simulations. MRS Communications, 2019, 9, 203-208.	0.8	31
50	Effect of nanodiamond surface chemistry on adsorption and release of tiopronin. Diamond and Related Materials, 2019, 100, 107590.	1.8	29
51	Multifrequency Imaging in the Intermittent Contact Mode of Atomic Force Microscopy: Beyond Phase Imaging. Small, 2012, 8, 1264-1269.	5.2	26
52	Combination of High pH and an Antioxidant Improves Chemical Stability of Two-Dimensional Transition-Metal Carbides and Carbonitrides (MXenes) in Aqueous Colloidal Solutions. Inorganic Chemistry, 2022, 61, 9877-9887.	1.9	23
53	Adsorption behavior and reduction of copper (II) acetate on the surface of detonation nanodiamond with well defined surface chemistry. Carbon, 2016, 109, 98-105.	5.4	22
54	Graphene-Based Materials for the Fast Removal of Cytokines from Blood Plasma. ACS Applied Bio Materials, 2018, 1, 436-443.	2.3	22

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55	Sonication-assisted hydrolysis of ozone oxidized detonation nanodiamond. Diamond and Related Materials, 2020, 103, 107705.	1.8	22
56	Separation and liquid chromatography using a single carbon nanotube. Scientific Reports, 2012, 2, 510.	1.6	19
57	Ultrasmall Nanodiamonds: Perspectives and Questions. ACS Nano, 2022, 16, 8513-8524.	7.3	19
58	Adsorption of proteins in channels of carbon nanotubes: Effect of surface chemistry. Materials Express, 2013, 3, 1-10.	0.2	18
59	Theoretical study of stability of graphite intercalation compounds with BrÃ¸nsted acids. Carbon, 2003, 41, 2757-2760.	5.4	17
60	Friction between MXenes and other two-dimensional materials at the nanoscale. Carbon, 2022, 196, 774-782.	5.4	17
61	Magnetically Responsive Paclitaxel-Loaded Biodegradable Nanoparticles for Treatment of Vascular Disease: Preparation, Characterization and In Vitro Evaluation of Anti-Proliferative Potential. Current Drug Delivery, 2010, 7, 263-273.	0.8	16
62	Solid-phase synthesis, characterization, and cellular activities of collagen-model Nanodiamond-peptide conjugates. Biopolymers, 2015, 104, 186-195.	1.2	16
63	Explosive fragmentation of luminescent diamond particles. Carbon, 2020, 164, 442-450.	5.4	15
64	In Situ Tensile Testing of Nanometer-Thick Two-Dimensional Transition-Metal Carbide Films: Implications for MXenes Acting as Nanoscale Reinforcement Agents. ACS Applied Nano Materials, 2021, 4, 5058-5067.	2.4	15
65	Detonation synthesis of silicon carbide nanoparticles. Ceramics International, 2020, 46, 6951-6954.	2.3	14
66	Rapid Adsorption of Proinflammatory Cytokines by Graphene Nanoplatelets and Their Composites for Extracorporeal Detoxification. Journal of Nanomaterials, 2018, 2018, 1-8.	1.5	12
67	Advances in Surface Chemistry of Nanodiamond and Nanodiamondâ€“Polymer Composites. , 2012, , 421-456.		11
68	High Temperature Functionalization and Surface Modification of Nanodiamond Powders. Materials Research Society Symposia Proceedings, 2007, 1039, 1.	0.1	9
69	Fluorescence and Physico-Chemical Properties of Hydrogenated Detonation Nanodiamonds. Journal of Carbon Research, 2020, 6, 7.	1.4	8
70	Recent progress in nanodiamonds: Synthesis, properties and their potential applications. Veruscript Functional Nanomaterials, 2018, 2, 1-23.	0.2	8
71	Low Temperature Plasma Reforming of Hydrocarbon Fuels Into Hydrogen and Carbon Suboxide for Energy Generation Without $hbox{CO}_{2}$ Emission. IEEE Transactions on Plasma Science, 2012, 40, 1362-1370.	0.6	6
72	Using graphite intercalation compounds for producing exfoliated graphiteâ€“amorphous carbonâ€“TiO2 composites. Journal of Physics and Chemistry of Solids, 2006, 67, 1205-1207.	1.9	5

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73	New floating photocatalysts based on expanded graphite and anatase. Russian Journal of Applied Chemistry, 2007, 80, 754-756.	0.1	5
74	Detonation synthesis of alpha-variant silicon carbide. AIP Conference Proceedings, 2018, , .	0.3	5
75	In-situ SEM compression of accordion-like multilayer MXenes. Extreme Mechanics Letters, 2020, 41, 101054.	2.0	5
76	Effect of defects on graphitization of SiC. Journal of Materials Research, 2013, 28, 952-957.	1.2	4
77	Nanodiamonds in composites: polymer chemistry and tribology. , 2017, , 365-390.		4
78	PLLA-Nanodiamond Composites and Their Application in Bone Tissue Engineering. , 2010, , .		1
79	Terahertz Spectroscopy of 2D Materials. , 2018, , .		1
80	2D MXenes: Terahertz Properties and Applications. , 2020, , .		1
81	A Novel THz Electromagnetic Interference Shielding Material: 2D Ti3C2Ty MXene. , 2020, , .		1
82	A new method for production of composites consisting of expanded graphite and amorphous carbon. Russian Journal of Applied Chemistry, 2007, 80, 726-729.	0.1	0
83	The Study on PLLA-Nanodiamond Composites for Surgical Fixation Devices. , 2010, , .		0