Ivan V Vlassiouk

List of Publications by Year
in descending order

91 papers	9,212 citations	53660 45 h-index	46693 89 g-index
93 all docs	93 docs citations	93 times ranked	11448 citing authors

#	Article	IF	Citations
1	Water desalination using nanoporous single-layer graphene. Nature Nanotechnology, 2015, 10, 459-464.	15.6	1,372
2	Role of Hydrogen in Chemical Vapor Deposition Growth of Large Single-Crystal Graphene. ACS Nano, 2011, 5, 6069-6076.	7.3	792
3	Nanofluidic Diode. Nano Letters, 2007, 7, 552-556.	4.5	562
4	Ionic Selectivity of Single Nanochannels. Nano Letters, 2008, 8, 1978-1985.	4.5	387
5	Biosensing with Nanofluidic Diodes. Journal of the American Chemical Society, 2009, 131, 8211-8220.	6.6	360
6	Nanofluidic Bipolar Transistors. Advanced Materials, 2008, 20, 293-297.	11.1	250
7	Tuning Transport Properties of Nanofluidic Devices with Local Charge Inversion. Journal of the American Chemical Society, 2009, 131, 5194-5202.	6.6	246
8	Large scale atmospheric pressure chemical vapor deposition of graphene. Carbon, 2013, 54, 58-67.	5.4	241
9	Control of Nanopore Wetting by a Photochromic Spiropyran: A Light-Controlled Valve and Electrical Switch. Nano Letters, 2006, 6, 1013-1017.	4.5	233
10	Nanofluidic Ionic Diodes. Comparison of Analytical and Numerical Solutions. ACS Nano, 2008, 2, 1589-1602.	7.3	221
11	The effect of intrinsic crumpling on the mechanics of free-standing graphene. Nature Communications, 2015, 6, 8789.	5.8	219
12	Aqueous proton transfer across single-layer graphene. Nature Communications, 2015, 6, 6539.	5.8	214
13	Evolutionary selection growth of two-dimensional materials on polycrystalline substrates. Nature Materials, 2018, 17, 318-322.	13.3	204
14	Synthesis of Hexagonal Boron Nitride Monolayer: Control of Nucleation and Crystal Morphology. Chemistry of Materials, 2015, 27, 8041-8047.	3.2	202
15	Graphene Nucleation Density on Copper: Fundamental Role of Background Pressure. Journal of Physical Chemistry C, 2013, 117, 18919-18926.	1.5	179
16	Control of ionic transport through gated single conical nanopores. Analytical and Bioanalytical Chemistry, 2009, 394, 413-419.	1.9	153
17	Nanoprecipitation-assisted ion current oscillations. Nature Nanotechnology, 2008, 3, 51-57.	15.6	152
18	Versatile ultrathin nanoporous silicon nitride membranes. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 21039-21044.	3.3	146

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19	Electrical and thermal conductivity of low temperature CVD graphene: the effect of disorder. Nanotechnology, 2011, 22, 275716.	1.3	132
20	Sensing DNA Hybridization via Ionic Conductance through a Nanoporous Electrode. Langmuir, 2005, 21, 4776-4778.	1.6	128
21	Surface-Induced Orientation Control of CuPc Molecules for the Epitaxial Growth of Highly Ordered Organic Crystals on Graphene. Journal of the American Chemical Society, 2013, 135, 3680-3687.	6.6	125
22	Spatially Resolved Mapping of Electrical Conductivity across Individual Domain (Grain) Boundaries in Graphene. ACS Nano, 2013, 7, 7956-7966.	7.3	124
23	â€œDirectâ€•Detection and Separation of DNA Using Nanoporous Alumina Filters. Langmuir, 2004, 20, 9913-9915.	1.6	119
24	Atomistic-Scale Simulations of Defect Formation in Graphene under Noble Gas Ion Irradiation. ACS Nano, 2016, 10, 8376-8384.	7.3	113
25	Voltage-Gated Hydrophobic Nanopores. ACS Nano, 2011, 5, 7453-7461.	7.3	105
26	Van der Waals Epitaxial Growth of Two-Dimensional Single-Crystalline GaSe Domains on Graphene. ACS Nano, 2015, 9, 8078-8088.	7.3	103
27	Low-energy electron reflectivity from graphene. Physical Review B, 2013, 87, .	1.1	83
28	Photoelectron spectroscopy of wet and gaseous samples through graphene membranes. Nanoscale, 2014, 6, 14394-14403.	2.8	78
29	Rectification of Ion Current in Nanopores Depends on the Type of Monovalent Cations: Experiments and Modeling. Journal of Physical Chemistry C, 2014, 118, 9809-9819.	1.5	77
30	Charged Particles Modulate Local Ionic Concentrations and Cause Formation of Positive Peaks in Resistive-Pulse-Based Detection. Journal of Physical Chemistry C, 2014, 118, 2391-2398.	1.5	72
31	Comparison of bipolar and unipolar ionic diodes. Nanotechnology, 2010, 21, 265301.	1.3	68
32	Hidden Area and Mechanical Nonlinearities in Freestanding Graphene. Physical Review Letters, 2017, 118, 266101.	2.9	67
33	Water Confinement in Hydrophobic Nanopores. Pressure-Induced Wetting and Drying. ACS Nano, 2010, 4, 5069-5075.	7.3	63
34	Open loop Kelvin probe force microscopy with single and multi-frequency excitation. Nanotechnology, 2013, 24, 475702.	1.3	63
35	Strong and Electrically Conductive Graphene-Based Composite Fibers and Laminates. ACS Applied Materials & Interfaces, 2015, 7, 10702-10709.	4.0	63
36	Nonequilibrium<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mn>1</mml:mn><mml:mo>/</mml:mo><mml:mi>f</mml:mi></mml:math>Noise in Rectifying Nanopores. Physical Review Letters, 2009, 103, 248104.	2.9	58

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37	Anisotropic Etching of Hexagonal Boron Nitride and Graphene: Question of Edge Terminations. Nano Letters, 2017, 17, 7306-7314.	4.5	54
38	Stability of silane modifiers on alumina nanoporous membranes. Journal of Membrane Science, 2006, 281, 587-591.	4.1	51
39	Near-field microwave scanning probe imaging of conductivity inhomogeneities in CVD graphene. Nanotechnology, 2012, 23, 385706.	1.3	51
40	Dual harmonic Kelvin probe force microscopy at the grapheneâ€"liquid interface. Applied Physics Letters, 2014, 104, .	1.5	50
41	Hydrothermally shrunk alumina nanopores and their application to DNA sensing. Analyst, The, 2006, 131, 1248.	1.7	49
42	Particle Deformation and Concentration Polarization in Electroosmotic Transport of Hydrogels through Pores. ACS Nano, 2013, 7, 3720-3728.	7.3	49
43	Chemical vapor deposition of graphene on large-domain ultra-flat copper. Carbon, 2014, 69, 188-193.	5.4	49
44	Characterization of the Giant Transient Dipole Generated by Photoinduced Electron Transfer in a Caroteneâˆ'Porphyrinâˆ'Fullerene Molecular Triad. Journal of Physical Chemistry A, 2003, 107, 7567-7573.	1.1	48
45	Direct observation of resistive heating at graphene wrinkles and grain boundaries. Applied Physics Letters, 2014, 105, .	1.5	47
46	Application of anodized aluminum in fluorescence detection of biological species. Analytical and Bioanalytical Chemistry, 2006, 385, 954-958.	1.9	46
47	Surface modification of graphene nanopores for protein translocation. Nanotechnology, 2013, 24, 495102.	1.3	44
48	Low-energy electron reflectivity of graphene on copper and other substrates. Physical Review B, 2013, 87, .	1.1	43
49	Direction Dependence of Resistive-Pulse Amplitude in Conically Shaped Mesopores. Analytical Chemistry, 2016, 88, 4917-4925.	3.2	42
50	Rectification of nanopores in aprotic solvents â€" transport properties of nanopores with surface dipoles. Nanoscale, 2015, 7, 19080-19091.	2.8	40
51	Maskless Lithography and in situ Visualization of Conductivity of Graphene using Helium Ion Microscopy. Scientific Reports, 2015, 5, 11952.	1.6	38
52	Nano-immunoassay with improved performance for detection of cancer biomarkers. Nanomedicine: Nanotechnology, Biology, and Medicine, 2015, 11, 167-173.	1.7	38
53	Polarization of Gold in Nanopores Leads to Ion Current Rectification. Journal of Physical Chemistry Letters, 2016, 7, 4152-4158.	2.1	38
54	Precipitation-Induced Voltage-Dependent Ion Current Fluctuations in Conical Nanopores. Journal of Physical Chemistry C, 2010, 114, 8126-8134.	1.5	36

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55	Solid-State Ionic Diodes Demonstrated in Conical Nanopores. Journal of Physical Chemistry C, 2017, 121, 6170-6176.	1.5	36
56	Noise Properties of Rectifying Nanopores. Journal of Physical Chemistry C, 2011, 115, 8775-8783.	1.5	33
57	Anomalous Mobility of Highly Charged Particles in Pores. Analytical Chemistry, 2015, 87, 8517-8523.	3.2	33
58	Graphene Microcapsule Arrays for Combinatorial Electron Microscopy and Spectroscopy in Liquids. ACS Applied Materials & Interfaces, 2017, 9, 26492-26502.	4.0	29
59	Free Energy Relationships in the Electrical Double Layer over Single-Layer Graphene. Journal of the American Chemical Society, 2013, 135, 979-981.	6.6	28
60	Interfacial Electrochemistry in Liquids Probed with Photoemission Electron Microscopy. Journal of the American Chemical Society, 2017, 139, 18138-18141.	6.6	28
61	Ionic Conductance through Graphene: Assessing Its Applicability as a Proton Selective Membrane. ACS Nano, 2019, 13, 12109-12119.	7.3	28
62	Nanoscale Mapping of the Double Layer Potential at the Grapheneâ€"Electrolyte Interface. Nano Letters, 2020, 20, 1336-1344.	4.5	25
63	Toward clean suspended CVD graphene. RSC Advances, 2016, 6, 83954-83962.	1.7	22
64	Electrochemical Control of Ion Transport through a Mesoporous Carbon Membrane. Langmuir, 2014, 30, 3606-3611.	1.6	21
65	Graphene engineering by neon ion beams. Nanotechnology, 2016, 27, 125302.	1.3	21
66	Role of Particle Focusing in Resistive-Pulse Technique: Direction-Dependent Velocity in Micropores. ACS Nano, 2016, 10, 3509-3517.	7.3	21
67	Simple and Versatile Detection of Viruses Using Anodized Alumina Membranes. ACS Sensors, 2016, 1, 488-492.	4.0	20
68	Exclusively Proton Conductive Membranes Based on Reduced Graphene Oxide Polymer Composites. ACS Nano, 2019, 13, 13136-13143.	7.3	19
69	Unusual Role of Oxygen in Electron-Transfer Processes. Journal of the American Chemical Society, 2002, 124, 4212-4213.	6.6	18
70	Velocity Profiles in Pores with Undulating Opening Diameter and Their Importance for Resistive-Pulse Experiments. Analytical Chemistry, 2014, 86, 10445-10453.	3.2	18
71	Interaction of Magnesium Ions with Pristine Single-Layer and Defected Graphene/Water Interfaces Studied by Second Harmonic Generation. Journal of Physical Chemistry B, 2014, 118, 7739-7749.	1.2	18
72	Ion transport in gel and gelâ€"liquid systems for LiClO₄-doped PMMA at the meso- and nanoscales. Nanoscale, 2017, 9, 16232-16243.	2.8	18

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73	Multi-purposed Ar gas cluster ion beam processing for graphene engineering. Carbon, 2018, 131, 142-148.	5.4	18
74	Graphene milling dynamics during helium ion beam irradiation. Carbon, 2018, 138, 277-282.	5.4	18
75	Electrical Conductance of Hydrophobic Membranes or What Happens below the Surface. Langmuir, 2007, 23, 7784-7792.	1.6	17
76	Radical Induced Impeding of Charge Recombination. Journal of Physical Chemistry B, 2002, 106, 8657-8666.	1.2	16
77	A scalable graphene-based membrane. Nature Nanotechnology, 2017, 12, 1022-1023.	15.6	15
78	In Aqua Electrochemistry Probed by XPEEM: Experimental Setup, Examples, and Challenges. Topics in Catalysis, 2018, 61, 2195-2206.	1.3	14
79	Deconstructing proton transport through atomically thin monolayer CVD graphene membranes. Journal of Materials Chemistry A, 2022, 10, 19797-19810.	5.2	14
80	Long-lived photoinduced charge transfer state of synthetically affable porphyrin-fullerene dyads. Journal of Porphyrins and Phthalocyanines, 2003, 07, 651-666.	0.4	13
81	Interactions of Organic Solvents at Graphene/Î±-Al₂O₃ and Graphene Oxide/Î±-Al₂O₃ Interfaces Studied by Sum Frequency Generation. Journal of Physical Chemistry C, 2014, 118, 17745-17755.	1.5	13
82	Effect of polymer residues on the electrical properties of large-area grapheneâ€“hexagonal boron nitride planar heterostructures. Nanotechnology, 2017, 28, 285601.	1.3	7
83	Noncontact tip-enhanced Raman spectroscopy for nanomaterials and biomedical applications. Nanoscale Advances, 2019, 1, 3392-3399.	2.2	7
84	Discovery of Grapheneâ€Water Membrane Structure: Toward Highâ€Quality Graphene Process. Advanced Science, 2022, 9, .	5.6	6
85	Electric Polarization of Dilute Polar Solutions:Â Revised Treatment for Arbitrary Shaped Molecules. Journal of Physical Chemistry A, 2003, 107, 7561-7566.	1.1	5
86	Symmetry Effects in Photoinduced Electron Transfer in Chlorinâ€Quinone Dyads: Adiabatic Suppression in the Marcus Inverted Region. Chemistry - A European Journal, 2020, 26, 17120-17127.	1.7	4
87	Near field microwave microscopy for nanoscale characterization, imaging and patterning of graphene. , 2014, , .		3
88	Corrosion Behavior of Zincâ€“Nickel and Graphene Layered Structures on Steel Substrates. Advanced Engineering Materials, 2019, 21, 1800949.	1.6	2
89	Unique role of dimeric carbon precursors in graphene growth by chemical vapor deposition. Carbon Trends, 2021, 5, 100093.	1.4	2
90	Biosensing with Nanopores. , 0, , 457-490.		0

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91	Multi-Modal Processing of Graphene Towards Precisely Controlled Fabrication of a Nanoelectronic Device Using the Helium Ion Microscope and the TOF SIMS. Microscopy and Microanalysis, 2017, 23, 1720-1721.	0.2	0