Petr KrÃ¡l

List of Publications by Year in descending order

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120	8,519	53660	45213
papers	citations	45 h-index	90 g-index

128	128	128	13838
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Robust carbon dioxide reduction on molybdenum disulphide edges. Nature Communications, 2014, 5, 4470.	5.8	644
2	Selective Ion Passage through Functionalized Graphene Nanopores. Journal of the American Chemical Society, 2008, 130, 16448-16449.	6.6	546
3	Self-assembly of magnetite nanocubes into helical superstructures. Science, 2014, 345, 1149-1153.	6.0	435
4	Broad-spectrum non-toxic antiviral nanoparticles with a virucidal inhibition mechanism. Nature Materials, 2018, 17, 195-203.	13.3	331
5	Chiral templating of self-assembling nanostructures by circularly polarized light. Nature Materials, 2015, 14, 66-72.	13.3	330
6	Computational Design of ACE2-Based Peptide Inhibitors of SARS-CoV-2. ACS Nano, 2020, 14, 5143-5147.	7.3	324
7	Dipoleâ^'Dipole Interactions in Nanoparticle Superlattices. Nano Letters, 2007, 7, 1213-1219.	4.5	316
8	Multistep nucleation of nanocrystals in aqueous solution. Nature Chemistry, 2017, 9, 77-82.	6.6	312
9	Reversible trapping and reaction acceleration within dynamically self-assembling nanoflasks. Nature Nanotechnology, 2016, 11, 82-88.	15.6	305
10	Nanodroplet Activated and Guided Folding of Graphene Nanostructures. Nano Letters, 2009, 9, 3766-3771.	4.5	274
11	Electric Polarization of Heteropolar Nanotubes as a Geometric Phase. Physical Review Letters, 2002, 88, 056803.	2.9	269
12	Sandwiched Grapheneâ^'Membrane Superstructures. ACS Nano, 2010, 4, 229-234.	7.3	252
13	Atomically precise organomimetic cluster nanomolecules assembled via perfluoroaryl-thiol SNAr chemistry. Nature Chemistry, 2017, 9, 333-340.	6.6	201
14	Reversible chromism of spiropyran in the cavity of a flexible coordination cage. Nature Communications, 2018, 9, 641.	5.8	148
15	Two-Step Enantio-Selective Optical Switch. Physical Review Letters, 2003, 90, 033001.	2.9	134
16	Modified cyclodextrins as broad-spectrum antivirals. Science Advances, 2020, 6, eaax9318.	4.7	131
17	Diffusion and Filtration Properties of Self-Assembled Gold Nanocrystal Membranes. Nano Letters, 2011, 11, 2430-2435.	4.5	121
18	Tunable porous nanoallotropes prepared by post-assembly etching of binary nanoparticle superlattices. Science, 2017, 358, 514-518.	6.0	120

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19	Chemical sensing with switchable transport channels in graphene grain boundaries. Nature Communications, 2014, 5, 4911.	5.8	105
20	Self-Assembly of Graphene Nanostructures on Nanotubes. ACS Nano, 2011, 5, 1798-1804.	7.3	98
21	High F-Content Perfluoropolyether-Based Nanoparticles for Targeted Detection of Breast Cancer by ¹⁹F Magnetic Resonance and Optical Imaging. ACS Nano, 2018, 12, 9162-9176.	7.3	98
22	Self-assembly of nanoparticles into biomimetic capsid-like nanoshells. Nature Chemistry, 2017, 9, 287-294.	6.6	94
23	Laser-Driven Atomic Pump. Physical Review Letters, 1999, 82, 5373-5376.	2.9	93
24	Ultra-stable all-solid-state sodium metal batteries enabled by perfluoropolyether-based electrolytes. Nature Materials, 2022, 21, 1057-1065.	13.3	92
25	Structure and Dynamics of Highly PEG-ylated Sterically Stabilized Micelles in Aqueous Media. Journal of the American Chemical Society, 2011, 133, 13481-13488.	6.6	90
26	Self-Assembly of Aromatic Amino Acid Enantiomers into Supramolecular Materials of High Rigidity. ACS Nano, 2020, 14, 1694-1706.	7.3	86
27	Photogalvanic Effects in Heteropolar Nanotubes. Physical Review Letters, 2000, 85, 1512-1515.	2.9	85
28	Supramolecular Control of Azobenzene Switching on Nanoparticles. Journal of the American Chemical Society, 2019, 141, 1949-1960.	6.6	85
29	Control of Protein Orientation on Gold Nanoparticles. Journal of Physical Chemistry C, 2015, 119, 21035-21043.	1.5	75
30	Modeling the Self-Assembly of Colloidal Nanorod Superlattices. Nano Letters, 2008, 8, 3605-3612.	4.5	72
31	Ultralarge Modulation of Fluorescence by Neuromodulators in Carbon Nanotubes Functionalized with Self-Assembled Oligonucleotide Rings. Nano Letters, 2018, 18, 6995-7003.	4.5	70
32	Highly efficient water desalination in carbon nanocones. Carbon, 2018, 129, 374-379.	5.4	66
33	PFPE-Based Polymeric ¹⁹F MRI Agents: A New Class of Contrast Agents with Outstanding Sensitivity. Macromolecules, 2017, 50, 5953-5963.	2.2	61
34	Revealing nanoscale mineralization pathways of hydroxyapatite using in situ liquid cell transmission electron microscopy. Science Advances, 2020, 6, .	4.7	61
35	Linker-Mediated Self-Assembly Dynamics of Charged Nanoparticles. ACS Nano, 2016, 10, 7443-7450.	7.3	59
36	Three-step nucleation of metalâ€“organic framework nanocrystals. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	58

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37	Formation of Apoptosisâ€Inducing Amyloid Fibrils by Tryptophan. Israel Journal of Chemistry, 2017, 57, 729-737.	1.0	56
38	Laser spinning of nanotubes: A path to fast-rotating microdevices. Physical Review B, 2002, 65, .	1.1	55
39	An Organometallic Strategy for Assembling Atomically Precise Hybrid Nanomaterials. Journal of the American Chemical Society, 2020, 142, 327-334.	6.6	55
40	Differential inhibition of metabolite amyloid formation by generic fibrillation-modifying polyphenols. Communications Chemistry, 2018, 1, .	2.0	52
41	Highly Efficient Osmotic Energy Harvesting in Charged Boronâ€Nitrideâ€Nanopore Membranes. Advanced Functional Materials, 2021, 31, 2009586.	7.8	52
42	Chemically Tunable Nanoscale Propellers of Liquids. Physical Review Letters, 2007, 98, 266102.	2.9	51
43	Interfacial Localization and Voltage-Tunable Arrays of Charged Nanoparticles. Nano Letters, 2014, 14, 6816-6822.	4.5	51
44	Dendron-mediated self-assembly of highly PEGylated block copolymers: a modular nanocarrier platform. Chemical Communications, 2011, 47, 10302.	2.2	49
45	Colloidal Nanocube Supercrystals Stabilized by Multipolar Coulombic Coupling. ACS Nano, 2012, 6, 4203-4213.	7.3	48
46	Analytic Solution for the Nondegenerate Quantum Control Problem. Physical Review Letters, 2002, 89, 063002.	2.9	45
47	Tuning the Selectivity of Dendron Micelles Through Variations of the Poly(ethylene glycol) Corona. ACS Nano, 2016, 10, 6905-6914.	7.3	43
48	Template-Free Hierarchical Self-Assembly of Iron Diselenide Nanoparticles into Mesoscale Hedgehogs. Journal of the American Chemical Society, 2017, 139, 16630-16639.	6.6	43
49	Material Drag Phenomena in Nanotubes. Chemical Reviews, 2013, 113, 3372-3390.	23.0	42
50	Enantioselective Molecular Transport in Multilayer Graphene Nanopores. Nano Letters, 2017, 17, 6742-6746.	4.5	42
51	Nanoparticle Interactions Guided by Shapeâ€Dependent Hydrophobic Forces. Advanced Materials, 2018, 30, e1707077.	11.1	42
52	Computational studies of micellar and nanoparticle nanomedicines. Chemical Society Reviews, 2018, 47, 3849-3860.	18.7	40
53	Controlled Self-Assembly of Photofunctional Supramolecular Nanotubes. ACS Nano, 2018, 12, 317-326.	7.3	40
54	Dynamics of amphiphilic block copolymers in an aqueous solution: direct imaging of micelle formation and nanoparticle encapsulation. Nanoscale, 2019, 11, 2299-2305.	2.8	40

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55	Current-induced rotation of helical molecular wires. Journal of Chemical Physics, 2005, 123, 184702.	1.2	39
56	Coulombic Dragging of Molecules on Surfaces Induced by Separately Flowing Liquids. Journal of the American Chemical Society, 2006, 128, 15984-15985.	6.6	39
57	Elucidating Surface Ligand-Dependent Kinetic Enhancement of Proteolytic Activity at Surface-Modified Quantum Dots. ACS Nano, 2017, 11, 5884-5896.	7.3	39
58	Nanoparticle Conjugation Stabilizes and Multimerizes Î²-Hairpin Peptides To Effectively Target PD-1/PD-L1 Î²-Sheet-Rich Interfaces. Journal of the American Chemical Society, 2020, 142, 1832-1837.	6.6	39
59	Confined, Oriented, and Electrically Anisotropic Graphene Wrinkles on Bacteria. ACS Nano, 2016, 10, 8403-8412.	7.3	35
60	Transient Clustering of Reaction Intermediates during Wet Etching of Silicon Nanostructures. Nano Letters, 2017, 17, 2953-2958.	4.5	35
61	Dendritic PEG outer shells enhance serum stability of polymeric micelles. Nanomedicine: Nanotechnology, Biology, and Medicine, 2018, 14, 1879-1889.	1.7	35
62	Poly(ethylene glycol) Corona Chain Length Controls End-Group-Dependent Cell Interactions of Dendron Micelles. Macromolecules, 2014, 47, 6911-6918.	2.2	32
63	Molecular Friction-Induced Electroosmotic Phenomena in Thin Neutral Nanotubes. Journal of Physical Chemistry Letters, 2014, 5, 2131-2137.	2.1	31
64	Tuning of the Aggregation Behavior of Fluorinated Polymeric Nanoparticles for Improved Therapeutic Efficacy. ACS Nano, 2020, 14, 7425-7434.	7.3	31
65	Positively Charged Dendron Micelles Display Negligible Cellular Interactions. ACS Macro Letters, 2013, 2, 77-81.	2.3	29
66	Correlated Rectification Transport in Ultranarrow Charged Nanocones. Journal of Physical Chemistry Letters, 2017, 8, 435-439.	2.1	28
67	An Organometallic Strategy for Cysteine Borylation. Journal of the American Chemical Society, 2021, 143, 8661-8668.	6.6	27
68	Electrical Conductivity, Selective Adhesion, and Biocompatibility in Bacteriaâ€Inspired Peptideâ€“Metal Selfâ€Supporting Nanocomposites. Advanced Materials, 2019, 31, e1807285.	11.1	25
69	Dynamics of Templated Assembly of Nanoparticle Filaments within Nanochannels. Advanced Materials, 2017, 29, 1702682.	11.1	24
70	Nanoparticles Self-Assembly within Lipid Bilayers. ACS Omega, 2018, 3, 10631-10637.	1.6	23
71	Transition of Metastable Cross-Î± Crystals into Cross-Î² Fibrils by Î²-Turn Flipping. Journal of the American Chemical Society, 2019, 141, 363-369.	6.6	22
72	Dragging of Polarizable Nanodroplets by Distantly Solvated Ions. Physical Review Letters, 2008, 101, 046103.	2.9	21

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73	Catalytic transport of molecular cargo using diffusive binding along a polymer track. Nature Chemistry, 2019, 11, 359-366.	6.6	21
74	Self-standing nanoparticle membranes and capsules. Nanoscale, 2011, 3, 1881.	2.8	20
75	Nanodroplet Transport on Vibrated Nanotubes. Journal of Physical Chemistry Letters, 2012, 3, 353-357.	2.1	20
76	Solubilization of Therapeutic Agents in Micellar Nanomedicines. Langmuir, 2013, 29, 15747-15754.	1.6	20
77	Metabolite amyloid-like fibrils interact with model membranes. Chemical Communications, 2018, 54, 4561-4564.	2.2	20
78	Adaptive Evolution of Peptide Inhibitors for Mutating SARSâ€CoVâ€2. Advanced Theory and Simulations, 2020, 3, 2000156.	1.3	20
79	In Situ Liquidâ€Cell TEM Observation of Multiphase Classical and Nonclassical Nucleation of Calcium Oxalate. Advanced Functional Materials, 2021, 31, 2007736.	7.8	19
80	Selectivity of ion transport in narrow carbon nanotubes depends on the driving force due to drag or drive nature of their active hydration shells. Journal of Chemical Physics, 2021, 154, 104707.	1.2	18
81	Amphiphilic Perfluoropolyether Copolymers for the Effective Removal of Polyfluoroalkyl Substances from Aqueous Environments. Macromolecules, 2021, 54, 3447-3457.	2.2	18
82	Porous carbon nanotubes: Molecular absorption, transport, and separation. Journal of Chemical Physics, 2014, 140, 104704.	1.2	17
83	â€œPrecipitation on Nanoparticlesâ€: Attractive Intermolecular Interactions Stabilize Specific Ligand Ratios on the Surfaces of Nanoparticles. Angewandte Chemie - International Edition, 2018, 57, 7023-7027.	7.2	17
84	Revealing the Molecular-Level Interactions between Cationic Fluorinated Polymer Sorbents and the Major PFAS Pollutant PFOA. Macromolecules, 2022, 55, 1077-1087.	2.2	17
85	Coulombically Driven Rolling of Nanorods on Water. Physical Review Letters, 2009, 103, 246103.	2.9	15
86	In Situ Tracking of Colloidally Stable and Ordered Assemblies of Gold Nanorods. Journal of the American Chemical Society, 2020, 142, 18814-18825.	6.6	15
87	Water Transport through Ultrathin Nanopores with Highly Polar Rims. Journal of Physical Chemistry C, 2019, 123, 27690-27696.	1.5	14
88	Bimodal liquid biopsy for cancer immunotherapy based on peptide engineering and nanoscale analysis. Biosensors and Bioelectronics, 2022, 213, 114445.	5.3	14
89	Omniphilic Polysaccharide-Based Nanocarriers for Modular Molecular Delivery in a Broad Range of Biosystems. ACS Applied Materials & Interfaces, 2018, 10, 36711-36720.	4.0	12
90	Electric Field Effect on Phospholipid Monolayers at an Aqueousâ€“Organic Liquidâ€“Liquid Interface. Journal of Physical Chemistry B, 2015, 119, 9319-9334.	1.2	11

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91	Nanosheets and Hydrogels Formed by 2 nm Metalâ€“Organic Cages with Electrostatic Interaction. ACS Applied Materials & Interfaces, 2020, 12, 56310-56318.	4.0	11
92	Hierarchically Multivalent Peptideâ€“Nanoparticle Architectures: A Systematic Approach to Engineer Surface Adhesion. Advanced Science, 2022, 9, e2103098.	5.6	11
93	Multivalent Cluster Nanomolecules for Inhibiting Proteinâ€“Protein Interactions. Bioconjugate Chemistry, 2019, 30, 2594-2603.	1.8	10
94	Computational screening of nanoparticles coupling to AÎ²40 peptides and fibrils. Scientific Reports, 2019, 9, 17804.	1.6	10
95	Competition between electron and hole stimulated Raman passage. Physical Review A, 2001, 64, .	1.0	9
96	Controllable Synthetic Molecular Channels: Biomimetic Ammonia Switch. Journal of Physical Chemistry B, 2010, 114, 1174-1179.	1.2	9
97	Zig-zag Self-assembly of Magnetic Octahedral Fe3O4 Nanocrystals using in situ Liquid Transmission Electron Microscopy. Microscopy and Microanalysis, 2016, 22, 36-37.	0.2	8
98	Oscillatory Dynamics in Infectivity and Death Rates of COVID-19. MSystems, 2020, 5, .	1.7	8
99	Assessment of Pressure and Density of Confined Water in Graphene Liquid Cells. Advanced Materials Interfaces, 2020, 7, 1901727.	1.9	8
100	Configuration-sensitive molecular sensing on doped graphene sheets. Nano Research, 2010, 3, 472-480.	5.8	7
101	Photooxidative Generation of Dodecaborate-Based Weakly Coordinating Anions. Inorganic Chemistry, 2019, 58, 10516-10526.	1.9	7
102	Realistic cataloguing of nanopores. Nature Materials, 2019, 18, 99-101.	13.3	7
103	Inhibitorâ€Mediated Structural Transition in a Minimal Amyloid Model. Angewandte Chemie - International Edition, 2022, 61, e202113845.	7.2	7
104	â€œPrecipitation on Nanoparticlesâ€: Attractive Intermolecular Interactions Stabilize Specific Ligand Ratios on the Surfaces of Nanoparticles. Angewandte Chemie, 2018, 130, 7141-7145.	1.6	6
105	Novel Oligo-Guanidyl-PEG Carrier Forming Rod-Shaped Polyplexes. Molecular Pharmaceutics, 2019, 16, 1678-1693.	2.3	6
106	Photochemical control of bacterial gene expression based on trans encoded genetic switches. Chemical Science, 2021, 12, 2646-2654.	3.7	6
107	Nanoscale Venturiâ€“Bernoulli Pumping of Liquids. ACS Nano, 2021, 15, 10342-10346.	7.3	6
108	Spontaneous collapse of palmitic acid films on an alkaline buffer containing calcium ions. Colloids and Surfaces B: Biointerfaces, 2020, 193, 111100.	2.5	5

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109	Configurations of Nanocubes Floating and Clustering on Liquid Surfaces. Journal of Physical Chemistry Letters, 2019, 10, 3592-3597.	2.1	4
110	Retrained Generic Antibodies Can Recognize SARS-CoV-2. Journal of Physical Chemistry Letters, 2021, 12, 1438-1442.	2.1	3
111	Sulfoglycodendrimer Therapeutics for HIVâ€1 and SARSâ€CoVâ€2. Advanced Therapeutics, 2021, 4, 2000210.	1.6	3
112	Hybridization of Biomolecular Crystals and Low-Dimensional Materials. ACS Nano, 2021, 15, 6678-6683.	7.3	2
113	Electric Control on the Nanoscale Using Tubular Image States. Israel Journal of Chemistry, 2007, 47, 105-110.	1.0	1
114	Correlated Diskoid-like Electronic States. Scientific Reports, 2015, 4, 5913.	1.6	1
115	Stretchâ€Healable Molecular Nanofibers. Advanced Theory and Simulations, 2020, 3, 2000094.	1.3	1
116	Liquid Pumping by Nanoscopic â€œFlexible Oarsâ€. Journal of Physical Chemistry C, 2021, 125, 8349-8352.	1.5	1
117	Optical current injection in carbon and boron nitride nanotubes. AIP Conference Proceedings, 2001, , .	0.3	0
118	Photo-galvano-mechanical phenomena in nanotubes. AIP Conference Proceedings, 2001, , .	0.3	0
119	Bands of Image States in Nanowire Lattices and Infraredâ€Control of Proteins on Nanotube Ropes. Fullerenes Nanotubes and Carbon Nanostructures, 2005, 13, 267-274.	1.0	0
120	Inhibitorâ€Mediated Structural Transition in a Minimal Amyloid Model. Angewandte Chemie, 0, , .	1.6	0