Xiangfeng Duan

List of Publications by Citations

353 papers	61,417 citations	114 h-index	245 g-index
386 ext. papers	70,599 ext. citations	17.9 avg, IF	8.06 L-index

#	Paper	IF	Citations
353	Indium phosphide nanowires as building blocks for nanoscale electronic and optoelectronic devices. *Nature*, **2001**, 409, 66-9	50.4	2992
352	Single-nanowire electrically driven lasers. *Nature*, **2003**, 421, 241-5	50.4	2109
351	Directed assembly of one-dimensional nanostructures into functional networks. *Science*, **2001**, 291, 630-3	33.3	1912
350	Logic gates and computation from assembled nanowire building blocks. *Science*, **2001**, 294, 1313-7	33.3	1847
349	Highly polarized photoluminescence and photodetection from single indium phosphide nanowires. *Science*, **2001**, 293, 1455-7	33.3	1553
348	ELECTROCHEMISTRY. High-performance transition metal-doped Pt□Ni octahedra for oxygen reduction reaction. *Science*, **2015**, 348, 1230-4	33.3	1307
347	Van der Waals heterostructures and devices. *Nature Reviews Materials*, **2016**, 1,	73.3	1262
346	General Synthesis of Compound Semiconductor Nanowires. *Advanced Materials*, **2000**, 12, 298-302	24	1221
345	Graphene nanomesh. *Nature Nanotechnology*, **2010**, 5, 190-4	28.7	1155
344	Progress, challenge and perspective of heterogeneous photocatalysts. *Chemical Society Reviews*, **2013**, 42, 2568-80	58.5	1056
343	High-speed graphene transistors with a self-aligned nanowire gate. *Nature*, **2010**, 467, 305-8	50.4	1031
342	Holey graphene frameworks for highly efficient capacitive energy storage. *Nature Communications*, **2014**, 5, 4554	17.4	1002
341	Ultrafine jagged platinum nanowires enable ultrahigh mass activity for the oxygen reduction reaction. *Science*, **2016**, 354, 1414-1419	33.3	986
340	General synthesis and definitive structural identification of MN4C4 single-atom catalysts with tunable electrocatalytic activities. *Nature Catalysis*, **2018**, 1, 63-72	36.5	968
339	Three-dimensional holey-graphene/niobia composite architectures for ultrahigh-rate energy storage. *Science*, **2017**, 356, 599-604	33.3	965
338	Flexible solid-state supercapacitors based on three-dimensional graphene hydrogel films. *ACS Nano* , **2013**, 7, 4042-9	16.7	945
337	Highly efficient gate-tunable photocurrent generation in vertical heterostructures of layered materials. *Nature Nanotechnology*, **2013**, 8, 952-8	28.7	866

336	Lateral epitaxial growth of two-dimensional layered semiconductor heterojunctions. *Nature Nanotechnology*, **2014**, 9, 1024-30	28.7	858
335	High-performance thin-film transistors using semiconductor nanowires and nanoribbons. *Nature*, **2003**, 425, 274-8	50.4	824
334	Gallium Nitride Nanowire Nanodevices. *Nano Letters*, **2002**, 2, 101-104	11.5	806
333	Doping and Electrical Transport in Silicon Nanowires. *Journal of Physical Chemistry B*, **2000**, 104, 5213-5216	3.4	800
332	Electroluminescence and photocurrent generation from atomically sharp WSe2/MoS2 heterojunction p-n diodes. *Nano Letters*, **2014**, 14, 5590-7	11.5	782
331	Approaching the Schottky-Mott limit in van der Waals metal-semiconductor junctions. *Nature*, **2018**, 557, 696-700	50.4	766
330	Laser-Assisted Catalytic Growth of Single Crystal GaN Nanowires. *Journal of the American Chemical Society*, **2000**, 122, 188-189	16.4	733
329	Two-dimensional transition metal dichalcogenides as atomically thin semiconductors: opportunities and challenges. *Chemical Society Reviews*, **2015**, 44, 8859-76	58.5	719
328	Vertically stacked multi-heterostructures of layered materials for logic transistors and complementary inverters. *Nature Materials*, **2013**, 12, 246-52	27	705
327	Graphene: an emerging electronic material. *Advanced Materials*, **2012**, 24, 5782-825	24	603
326	Nanowires for integrated multicolor nanophotonics. *Small*, **2005**, 1, 142-7	11	565
325	Plasmon resonance enhanced multicolour photodetection by graphene. *Nature Communications*, **2011**, 2, 579	17.4	546
324	Van der Waals integration before and beyond two-dimensional materials. *Nature*, **2019**, 567, 323-333	50.4	530
323	Covalent Organic Frameworks with High Charge Carrier Mobility. *Chemistry of Materials*, **2011**, 23, 4094-4097	9.6	524
322	Functionalized graphene hydrogel-based high-performance supercapacitors. *Advanced Materials*, **2013**, 25, 5779-84	24	520
321	New Porous Crystals of Extended Metal-Catecholates. *Chemistry of Materials*, **2012**, 24, 3511-3513	9.6	423
320	Chemical vapour deposition growth of large single crystals of monolayer and bilayer graphene. *Nature Communications*, **2013**, 4, 2096	17.4	422
319	Solution-processable 2D semiconductors for high-performance large-area electronics. *Nature*, **2018**, 562, 254-258	50.4	404

318	Robust epitaxial growth of two-dimensional heterostructures, multiheterostructures, and superlattices. *Science*, **2017**, 357, 788-792	33.3	388
317	Self-Assembled Three-Dimensional Graphene Macrostructures: Synthesis and Applications in Supercapacitors. *Accounts of Chemical Research*, **2015**, 48, 1666-75	24.3	388
316	A low-temperature method to produce highly reduced graphene oxide. *Nature Communications*, **2013**, 4, 1539	17.4	371
315	Growth of alloy MoS(2x)Se2(1-x) nanosheets with fully tunable chemical compositions and optical properties. *Journal of the American Chemical Society*, **2014**, 136, 3756-9	16.4	362
314	Hierarchical 3D electrodes for electrochemical energy storage. *Nature Reviews Materials*, **2019**, 4, 45-60	73.3	360
313	Solution Processable Holey Graphene Oxide and Its Derived Macrostructures for High-Performance Supercapacitors. *Nano Letters*, **2015**, 15, 4605-10	11.5	349
312	Rational fabrication of graphene nanoribbons using a nanowire etch mask. *Nano Letters*, **2009**, 9, 2083-7	11.5	336
311	Towards highly efficient photocatalysts using semiconductor nanoarchitectures. *Energy and Environmental Science*, **2012**, 5, 6732	35.4	335
310	Few-layer molybdenum disulfide transistors and circuits for high-speed flexible electronics. *Nature Communications*, **2014**, 5, 5143	17.4	329
309	Plasmonic modulation of the upconversion fluorescence in NaYF4 :Yb/Tm hexaplate nanocrystals using gold nanoparticles or nanoshells. *Angewandte Chemie - International Edition*, **2010**, 49, 2865-8	16.4	317
308	Interlayer Transition and Infrared Photodetection in Atomically Thin Type-II MoTe$_2$/MoS$_2$ van der Waals Heterostructures. *ACS Nano*, **2016**, 10, 3852-8	16.7	314
307	High-yield self-limiting single-nanowire assembly with dielectrophoresis. *Nature Nanotechnology*, **2010**, 5, 525-30	28.7	312
306	Electrically conductive and optically active porous silicon nanowires. *Nano Letters*, **2009**, 9, 4539-43	11.5	303
305	Nonvolatile Memory and Programmable Logic from Molecule-Gated Nanowires. *Nano Letters*, **2002**, 2, 487-490	11.5	300
304	Large-area graphene-nanomesh/carbon-nanotube hybrid membranes for ionic and molecular nanofiltration. *Science*, **2019**, 364, 1057-1062	33.3	291
303	Large area growth and electrical properties of p-type WSe2 atomic layers. *Nano Letters*, **2015**, 15, 709-13	11.5	287
302	Toward barrier free contact to molybdenum disulfide using graphene electrodes. *Nano Letters*, **2015**, 15, 3030-4	11.5	286
301	Nanoscale Structure Design for High-Performance Pt-Based ORR Catalysts. *Advanced Materials*, **2019**, 31, e1802234	24	286

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299	Graphene-supported hemin as a highly active biomimetic oxidation catalyst. *Angewandte Chemie - International Edition*, **2012**, 51, 3822-5	16.4	275
298	Transferred wrinkled Al2O3 for highly stretchable and transparent graphene-carbon nanotube transistors. *Nature Materials*, **2013**, 12, 403-9	27	273
297	High-frequency self-aligned graphene transistors with transferred gate stacks. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 11588-92	11.5	267
296	Single-atom tailoring of platinum nanocatalysts for high-performance multifunctional electrocatalysis. *Nature Catalysis*, **2019**, 2, 495-503	36.5	258
295	Van der Waals epitaxial growth and optoelectronics of large-scale WSe/SnS vertical bilayer p-n junctions. *Nature Communications*, **2017**, 8, 1906	17.4	258
294	Contacts between Two- and Three-Dimensional Materials: Ohmic, Schottky, and p-n Heterojunctions. *ACS Nano*, **2016**, 10, 4895-919	16.7	257
293	Synthesis and optical properties of gallium arsenide nanowires. *Applied Physics Letters*, **2000**, 76, 1116-1118	3.8	255
292	Functional Three-Dimensional Graphene/Polymer Composites. *ACS Nano*, **2016**, 10, 7231-47	16.7	245
291	Single atom electrocatalysts supported on graphene or graphene-like carbons. *Chemical Society Reviews*, **2019**, 48, 5207-5241	58.5	238
290	Very large magnetoresistance in graphene nanoribbons. *Nature Nanotechnology*, **2010**, 5, 655-9	28.7	237
289	Three-dimensional macro-structures of two-dimensional nanomaterials. *Chemical Society Reviews*, **2016**, 45, 5541-5588	58.5	231
288	Double-negative-index ceramic aerogels for thermal superinsulation. *Science*, **2019**, 363, 723-727	33.3	229
287	Wafer-scale growth of large arrays of perovskite microplate crystals for functional electronics and optoelectronics. *Science Advances*, **2015**, 1, e1500613	14.3	226
286	Inhibiting Polysulfide Shuttling with a Graphene Composite Separator for Highly Robust Lithium-Sulfur Batteries. *Joule*, **2018**, 2, 2091-2104	27.8	226
285	Monolayer atomic crystal molecular superlattices. *Nature*, **2018**, 555, 231-236	50.4	220
284	Synthesis of WS2xSe2-2x Alloy Nanosheets with Composition-Tunable Electronic Properties. *Nano Letters*, **2016**, 16, 264-9	11.5	218
283	High-yield chemical vapor deposition growth of high-quality large-area AB-stacked bilayer graphene. *ACS Nano*, **2012**, 6, 8241-9	16.7	215

282	A facile strategy to Pt3Ni nanocrystals with highly porous features as an enhanced oxygen reduction reaction catalyst. *Advanced Materials*, **2013**, 25, 2974-9	24	211
281	Plasma-engineered MoS2 thin-film as an efficient electrocatalyst for hydrogen evolution reaction. *Chemical Communications*, **2015**, 51, 7470-3	5.8	207
280	Iridium single-atom catalyst on nitrogen-doped carbon for formic acid oxidation synthesized using a general host-guest strategy. *Nature Chemistry*, **2020**, 12, 764-772	17.6	207
279	Synthesis of PtPd bimetal nanocrystals with controllable shape, composition, and their tunable catalytic properties. *Nano Letters*, **2012**, 12, 4265-70	11.5	207
278	A fundamental look at electrocatalytic sulfur reduction reaction. *Nature Catalysis*, **2020**, 3, 762-770	36.5	206
277	A rational design of cosolvent exfoliation of layered materials by directly probing liquid-solid interaction. *Nature Communications*, **2013**, 4, 2213	17.4	204
276	General synthesis of two-dimensional van der Waals heterostructure arrays. *Nature*, **2020**, 579, 368-374	50.4	195
275	Two-dimensional transistors beyond graphene and TMDCs. *Chemical Society Reviews*, **2018**, 47, 6388-6409	58.5	193
274	Nanoscale morphology, dimensional control, and electrical properties of oligoanilines. *Journal of the American Chemical Society*, **2010**, 132, 10365-73	16.4	186
273	One-step strategy to graphene/Ni(OH)2 composite hydrogels as advanced three-dimensional supercapacitor electrode materials. *Nano Research*, **2013**, 6, 65-76	10	182
272	Large-scale integration of semiconductor nanowires for high-performance flexible electronics. *ACS Nano*, **2012**, 6, 1888-900	16.7	182
271	Mechanically Shaped Two-Dimensional Covalent Organic Frameworks Reveal Crystallographic Alignment and Fast Li-Ion Conductivity. *Journal of the American Chemical Society*, **2016**, 138, 9767-70	16.4	177
270	Self-Optimization of the Active Site of Molybdenum Disulfide by an Irreversible Phase Transition during Photocatalytic Hydrogen Evolution. *Angewandte Chemie - International Edition*, **2017**, 56, 7610-7614	16.4	175
269	Size-dependent phase transition in methylammonium lead iodide perovskite microplate crystals. *Nature Communications*, **2016**, 7, 11330	17.4	173
268	Microwave-Assisted Rapid Synthesis of Graphene-Supported Single Atomic Metals. *Advanced Materials*, **2018**, 30, e1802146	24	172
267	Porous, conductive metal-triazolates and their structural elucidation by the charge-flipping method. *Chemistry - A European Journal*, **2012**, 18, 10595-601	4.8	172
266	Biomimetic synthesis of an ultrathin platinum nanowire network with a high twin density for enhanced electrocatalytic activity and durability. *Angewandte Chemie - International Edition*, **2013**, 52, 12577-81	16.4	164
265	van der Waals Heterojunction Devices Based on Organohalide Perovskites and Two-Dimensional Materials. *Nano Letters*, **2016**, 16, 367-73	11.5	163

264	High-kappa oxide nanoribbons as gate dielectrics for high mobility top-gated graphene transistors. *Proceedings of the National Academy of Sciences of the United States of America*, **2010**, 107, 6711-5	11.5	161
263	Confined Pyrolysis within Metal-Organic Frameworks To Form Uniform Ru Clusters for Efficient Oxidation of Alcohols. *Journal of the American Chemical Society*, **2017**, 139, 9795-9798	16.4	157
262	Black phosphorus composites with engineered interfaces for high-rate high-capacity lithium storage. *Science*, **2020**, 370, 192-197	33.3	156
261	Lateral Growth of Composition Graded Atomic Layer MoS(2(1-x))Se(2x) Nanosheets. *Journal of the American Chemical Society*, **2015**, 137, 5284-7	16.4	155
260	Three-dimensional graphene framework with ultra-high sulfur content for a robust lithium–sulfur battery. *Nano Research*, **2016**, 9, 240-248	10	147
259	A rational design of carbon-supported dispersive Pt-based octahedra as efficient oxygen reduction reaction catalysts. *Energy and Environmental Science*, **2014**, 7, 2957-2962	35.4	147
258	Sub-100 nm channel length graphene transistors. *Nano Letters*, **2010**, 10, 3952-6	11.5	145
257	A self-powered high-performance graphene/silicon ultraviolet photodetector with ultra-shallow junction: breaking the limit of silicon?. *Npj 2D Materials and Applications*, **2017**, 1,	8.8	144
256	Promises and prospects of two-dimensional transistors. *Nature*, **2021**, 591, 43-53	50.4	143
255	Layer-by-Layer Degradation of Methylammonium Lead Tri-iodide Perovskite Microplates. *Joule*, **2017**, 1, 548-562	27.8	142
254	Unveiling the formation pathway of single crystalline porous silicon nanowires. *ACS Applied Materials & Interfaces*, **2011**, 3, 261-70	9.5	142
253	Top-gated graphene nanoribbon transistors with ultrathin high-k dielectrics. *Nano Letters*, **2010**, 10, 1917-21	11.5	141
252	Molecular Design of Single-Atom Catalysts for Oxygen Reduction Reaction. *Advanced Energy Materials*, **2020**, 10, 1903815	21.8	139
251	Self-trapped state enabled filterless narrowband photodetections in 2D layered perovskite single crystals. *Nature Communications*, **2019**, 10, 806	17.4	139
250	Significantly Enhanced Visible Light Photoelectrochemical Activity in TiO$_2$ Nanowire Arrays by Nitrogen Implantation. *Nano Letters*, **2015**, 15, 4692-8	11.5	138
249	Palladium-based nanostructures with highly porous features and perpendicular pore channels as enhanced organic catalysts. *Angewandte Chemie - International Edition*, **2013**, 52, 2520-4	16.4	135
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247	pH-Operated mechanized porous silicon nanoparticles. *Journal of the American Chemical Society*, **2011**, 133, 8798-801	16.4	135

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245	Toward tunable band gap and tunable dirac point in bilayer graphene with molecular doping. *Nano Letters*, **2011**, 11, 4759-63	11.5	127
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240	Roles of Mo Surface Dopants in Enhancing the ORR Performance of Octahedral PtNi Nanoparticles. *Nano Letters*, **2018**, 18, 798-804	11.5	115
239	Plasmonic enhancements of photocatalytic activity of Pt/n-Si/Ag photodiodes using Au/Ag core/shell nanorods. *Journal of the American Chemical Society*, **2011**, 133, 16730-3	16.4	114
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234	Silver nanoparticles protected by monolayer graphene as a stabilized substrate for surface enhanced Raman spectroscopy. *Carbon*, **2014**, 66, 713-719	10.4	106
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232	Building two-dimensional materials one row at a time: Avoiding the nucleation barrier. *Science*, **2018**, 362, 1135-1139	33.3	105
231	Electric-field-induced strong enhancement of electroluminescence in multilayer molybdenum disulfide. *Nature Communications*, **2015**, 6, 7509	17.4	104
230	Omnidirectional enhancement of photocatalytic hydrogen evolution over hierarchical auline leaf nanoarchitectures. *Applied Catalysis B: Environmental*, **2016**, 186, 88-96	21.8	104
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228	Thickness-Tunable Synthesis of Ultrathin Type-II Dirac Semimetal PtTe Single Crystals and Their Thickness-Dependent Electronic Properties. *Nano Letters*, **2018**, 18, 3523-3529	11.5	103
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220	Pushing the Performance Limit of Sub-100 nm Molybdenum Disulfide Transistors. *Nano Letters*, **2016**, 16, 6337-6342	11.5	91
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215	Composition-Modulated Two-Dimensional Semiconductor Lateral Heterostructures via Layer-Selected Atomic Substitution. *ACS Nano*, **2017**, 11, 961-967	16.7	86
214	Integration of molecular and enzymatic catalysts on graphene for biomimetic generation of antithrombotic species. *Nature Communications*, **2014**, 5, 3200	17.4	83
213	Broadband gate-tunable terahertz plasmons in graphene heterostructures. *Nature Photonics*, **2018**, 12, 22-28	33.9	83
212	Graphene-Dielectric Integration for Graphene Transistors. *Materials Science and Engineering Reports* , **2010**, 70, 354-370	30.9	82
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209	Holey graphene hydrogel with in-plane pores for high-performance capacitive desalination. *Nano Research*, **2016**, 9, 2458-2466	10	81
208	Broken Symmetry Induced Strong Nonlinear Optical Effects in Spiral WS Nanosheets. *ACS Nano*, **2017**, 11, 4892-4898	16.7	79
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205	Ultrafine Graphene Nanomesh with Large On/Off Ratio for High-Performance Flexible Biosensors. *Advanced Functional Materials*, **2017**, 27, 1604096	15.6	78
204	Rational design of amorphous indium zinc oxide/carbon nanotube hybrid film for unique performance transistors. *Nano Letters*, **2012**, 12, 3596-601	11.5	78
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202	Plasmonic Modulation of the Upconversion Fluorescence in NaYF4:Yb/Tm Hexaplate Nanocrystals Using Gold Nanoparticles or Nanoshells. *Angewandte Chemie*, **2010**, 122, 2927-2930	3.6	78
201	Highly-anisotropic optical and electrical properties in layered SnSe. *Nano Research*, **2018**, 11, 554-564	10	77
200	Wavelength-converted/selective waveguiding based on composition-graded semiconductor nanowires. *Nano Letters*, **2012**, 12, 5003-7	11.5	76
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189	Few-Layer GeAs Field-Effect Transistors and Infrared Photodetectors. *Advanced Materials*, **2018**, 30, e1705934	24	69
188	Composition tuning the upconversion emission in NaYF4:Yb/Tm hexaplate nanocrystals. *Nanoscale*, **2011**, 3, 963-6	7.7	69
187	Van der Waals epitaxial growth of air-stable CrSe nanosheets with thickness-tunable magnetic order. *Nature Materials*, **2021**, 20, 818-825	27	68
186	Doping-free complementary WSe circuit via van der Waals metal integration. *Nature Communications*, **2020**, 11, 1866	17.4	68
185	A Solution Processable High-Performance Thermoelectric Copper Selenide Thin Film. *Advanced Materials*, **2017**, 29, 1606662	24	67
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183	Scalable fabrication of self-aligned graphene transistors and circuits on glass. *Nano Letters*, **2012**, 12, 2653-7	11.5	67
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180	Highly sensitive detection of mercury(II) ions with few-layer molybdenum disulfide. *Nano Research*, **2015**, 8, 257-262	10	65
179	Strain-Tuning Atomic Substitution in Two-Dimensional Atomic Crystals. *ACS Nano*, **2018**, 12, 4853-4860	16.7	64
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177	Assembled Semiconductor Nanowire Thin Films for High-Performance Flexible Macroelectronics. *MRS Bulletin*, **2007**, 32, 134-141	3.2	62
176	van der Waals Epitaxial Growth of Atomically Thin 2D Metals on Dangling-Bond-Free WSe2 and WS2. *Advanced Functional Materials*, **2019**, 29, 1806611	15.6	60
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