Juan-Carlos Idrobo

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222 papers	16,412 citations	55 h-index	126 g-index
234 ext. papers	18,297 ext. citations	9.4 avg, IF	6.54 L-index

#	Paper	IF	Citations
222	Intrinsic structural defects in monolayer molybdenum disulfide. *Nano Letters*, **2013**, 13, 2615-22	11.5	1418
221	An oxygen reduction electrocatalyst based on carbon nanotube-graphene complexes. *Nature Nanotechnology*, **2012**, 7, 394-400	28.7	1407
220	Vapour phase growth and grain boundary structure of molybdenum disulphide atomic layers. *Nature Materials*, **2013**, 12, 754-9	27	1384
219	van der Waals epitaxy of MoS□layers using graphene as growth templates. *Nano Letters*, **2012**, 12, 2784-91	11.5	788
218	In-plane heterostructures of graphene and hexagonal boron nitride with controlled domain sizes. *Nature Nanotechnology*, **2013**, 8, 119-24	28.7	687
217	Dopamine as a carbon source: the controlled synthesis of hollow carbon spheres and yolk-structured carbon nanocomposites. *Angewandte Chemie - International Edition*, **2011**, 50, 6799-802	16.4	613
216	Highly responsive ultrathin GaS nanosheet photodetectors on rigid and flexible substrates. *Nano Letters*, **2013**, 13, 1649-54	11.5	573
215	Selective ionic transport through tunable subnanometer pores in single-layer graphene membranes. *Nano Letters*, **2014**, 14, 1234-41	11.5	569
214	Ultrathin high-temperature oxidation-resistant coatings of hexagonal boron nitride. *Nature Communications*, **2013**, 4, 2541	17.4	418
213	Heteroepitaxial growth of two-dimensional hexagonal boron nitride templated by graphene edges. *Science*, **2014**, 343, 163-7	33.3	415
212	High-performance Ag-Co alloy catalysts for electrochemical oxygen reduction. *Nature Chemistry*, **2014**, 6, 828-34	17.6	331
211	Selective molecular transport through intrinsic defects in a single layer of CVD graphene. *ACS Nano*, **2012**, 6, 10130-8	16.7	285
210	p-type doping of MoS2 thin films using Nb. *Applied Physics Letters*, **2014**, 104, 092104	3.4	236
209	Long-range ferromagnetic ordering in manganese-doped two-dimensional dichalcogenides. *Physical Review B*, **2013**, 88,	3.3	234
208	Nanofiltration across Defect-Sealed Nanoporous Monolayer Graphene. *Nano Letters*, **2015**, 15, 3254-60	11.5	229
207	Vertically Oriented Arrays of ReS2 Nanosheets for Electrochemical Energy Storage and Electrocatalysis. *Nano Letters*, **2016**, 16, 3780-7	11.5	201
206	Interface structure and atomic bonding characteristics in silicon nitride ceramics. *Science*, **2004**, 306, 1768-70	33.3	196

205	Growth Mechanisms and Oxidation Resistance of Gold-Coated Iron Nanoparticles. *Chemistry of Materials*, **2005**, 17, 3181-3186	9.6	195
204	Controlled vapor phase growth of single crystalline, two-dimensional GaSe crystals with high photoresponse. *Scientific Reports*, **2014**, 4, 5497	4.9	194
203	Direct visualization of the Jahn-Teller effect coupled to Na ordering in Na5/8MnO2. *Nature Materials*, **2014**, 13, 586-92	27	191
202	Direct determination of the chemical bonding of individual impurities in graphene. *Physical Review Letters*, **2012**, 109, 206803	7.4	189
201	Flexible metallic nanowires with self-adaptive contacts to semiconducting transition-metal dichalcogenide monolayers. *Nature Nanotechnology*, **2014**, 9, 436-42	28.7	185
200	Atomically localized plasmon enhancement in monolayer graphene. *Nature Nanotechnology*, **2012**, 7, 161-5	28.7	173
199	Synthesis of patched or stacked graphene and hBN flakes: a route to hybrid structure discovery. *Nano Letters*, **2013**, 13, 933-41	11.5	162
198	Ultrahigh photo-responsivity and detectivity in multilayer InSe nanosheets phototransistors with broadband response. *Journal of Materials Chemistry C*, **2015**, 3, 7022-7028	7.1	162
197	Heterogeneous sub-continuum ionic transport in statistically isolated graphene nanopores. *Nature Nanotechnology*, **2015**, 10, 1053-7	28.7	158
196	Transition-Metal Substitution Doping in Synthetic Atomically Thin Semiconductors. *Advanced Materials*, **2016**, 28, 9735-9743	24	145
195	Static polarizabilities and optical absorption spectra of gold clusters (Aun, n=2–14 and 20) from first principles. *Physical Review B*, **2007**, 76,	3.3	145
194	Re Doping in 2D Transition Metal Dichalcogenides as a New Route to Tailor Structural Phases and Induced Magnetism. *Advanced Materials*, **2017**, 29, 1703754	24	130
193	Highly sensitive phototransistors based on two-dimensional GaTe nanosheets with direct bandgap. *Nano Research*, **2014**, 7, 694-703	10	124
192	Quaternary 2D Transition Metal Dichalcogenides (TMDs) with Tunable Bandgap. *Advanced Materials* , **2017**, 29, 1702457	24	124
191	Low-Frequency Raman Fingerprints of Two-Dimensional Metal Dichalcogenide Layer Stacking Configurations. *ACS Nano*, **2015**, 9, 6333-42	16.7	121
190	AC/AB stacking boundaries in bilayer graphene. *Nano Letters*, **2013**, 13, 3262-8	11.5	112
189	Platinum-modulated cobalt nanocatalysts for low-temperature aqueous-phase Fischer-Tropsch synthesis. *Journal of the American Chemical Society*, **2013**, 135, 4149-58	16.4	98
188	Size dependence of the static polarizabilities and absorption spectra of Agn(n=2–8) clusters. *Physical Review B*, **2005**, 72,	3.3	98

187	Atomic structure of highly strained BiFeO3 thin films. *Physical Review Letters*, **2012**, 108, 047601	7.4	89
186	Identification of site-specific isotopic labels by vibrational spectroscopy in the electron microscope. *Science*, **2019**, 363, 525-528	33.3	87
185	Van der Waals Epitaxial Growth of Two-Dimensional Single-Crystalline GaSe Domains on Graphene. *ACS Nano*, **2015**, 9, 8078-88	16.7	87
184	Direct visualization of reversible dynamics in a Si□cluster embedded in a graphene pore. *Nature Communications*, **2013**, 4, 1650	17.4	87
183	Nanoporous Atomically Thin Graphene Membranes for Desalting and Dialysis Applications. *Advanced Materials*, **2017**, 29, 1700277	24	85
182	Molecular Sieving Across Centimeter-Scale Single-Layer Nanoporous Graphene Membranes. *ACS Nano*, **2017**, 11, 5726-5736	16.7	82
181	The observation of square ice in graphene questioned. *Nature*, **2015**, 528, E1-2	50.4	80
180	Direct observation of nanometer-scale Mg- and B-oxide phases at grain boundaries in MgB2. *Applied Physics Letters*, **2001**, 79, 1837-1839	3.4	80
179	Temperature Dependence of Aliovalent-Vanadium Doping in LiFePO4 Cathodes. *Chemistry of Materials*, **2013**, 25, 768-781	9.6	75
178	Isoelectronic Tungsten Doping in Monolayer MoSe for Carrier Type Modulation. *Advanced Materials* , **2016**, 28, 8240-8247	24	69
177	Epitaxial stabilization of □Fe2O3 (00l) thin films on SrTiO3 (111). *Applied Physics Letters*, **2010**, 96, 112508	3.4	69
176	Water and Solute Transport Governed by Tunable Pore Size Distributions in Nanoporous Graphene Membranes. *ACS Nano*, **2017**, 11, 10042-10052	16.7	65
175	Controllable growth of layered selenide and telluride heterostructures and superlattices using molecular beam epitaxy. *Journal of Materials Research*, **2016**, 31, 900-910	2.5	65
174	Optical absorption spectra of intermediate-size silver clusters from first principles. *Physical Review B*, **2008**, 78,	3.3	64
173	Progress in ultrahigh energy resolution EELS. *Ultramicroscopy*, **2019**, 203, 60-67	3.1	64
172	Temperature Measurement by a Nanoscale Electron Probe Using Energy Gain and Loss Spectroscopy. *Physical Review Letters*, **2018**, 120, 095901	7.4	61
171	Correlating the three-dimensional atomic defects and electronic properties of two-dimensional transition metal dichalcogenides. *Nature Materials*, **2020**, 19, 867-873	27	58
170	Electronic excitations in graphene in the 1-50 eV range: the □and □+ □peaks are not plasmons. *Nano Letters*, **2014**, 14, 3827-31	11.5	58

169	Observation of coherent oxide precipitates in polycrystalline MgB2. *Applied Physics Letters*, **2002**, 80, 3970-3972	3.4	58
168	Facet-dependent disorder in pristine high-voltage lithium-manganese-rich cathode material. *ACS Nano*, **2014**, 8, 12710-6	16.7	55
167	Thickness-dependent crossover from charge- to strain-mediated magnetoelectric coupling in ferromagnetic/piezoelectric oxide heterostructures. *ACS Nano*, **2014**, 8, 894-903	16.7	54
166	Single atom microscopy. *Microscopy and Microanalysis*, **2012**, 18, 1342-54	0.5	54
165	Local electronic structure variation resulting in Li 'filament' formation within solid electrolytes. *Nature Materials*, **2021**, 20, 1485-1490	27	54
164	Sub-Ångstrom electric field measurements on a universal detector in a scanning transmission electron microscope. *Advanced Structural and Chemical Imaging*, **2018**, 4, 10	3.9	53
163	Effect of confined space reduction of graphite oxide followed by sulfur doping on oxygen reduction reaction in neutral electrolyte. *Journal of Materials Chemistry A*, **2013**, 1, 7059	13	52
162	Electronic and optical excitations in Agn clusters (n=1–8): Comparison of density-functional and many-body theories. *Physical Review B*, **2009**, 79,	3.3	52
161	Edge-Controlled Growth and Etching of Two-Dimensional GaSe Monolayers. *Journal of the American Chemical Society*, **2017**, 139, 482-491	16.4	50
160	Elevated temperature microstructural stability in cast AlCuMnZr alloys through solute segregation. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing* , **2019**, 765, 138279	5.3	49
159	Achieving atomic resolution magnetic dichroism by controlling the phase symmetry of an electron probe. *Physical Review Letters*, **2014**, 113, 145501	7.4	49
158	Atomic Structure and Electrical Activity of Grain Boundaries and Ruddlesden-Popper Faults in Cesium Lead Bromide Perovskite. *Advanced Materials*, **2019**, 31, e1805047	24	47
157	Room-temperature tunneling behavior of boron nitride nanotubes functionalized with gold quantum dots. *Advanced Materials*, **2013**, 25, 4544-8	24	46
156	Exploring the capabilities of monochromated electron energy loss spectroscopy in the infrared regime. *Scientific Reports*, **2018**, 8, 5637	4.9	44
155	Vacancy-driven anisotropic defect distribution in the battery-cathode material LiFePO4. *Physical Review Letters*, **2011**, 107, 085507	7.4	44
154	Engineering single-atom dynamics with electron irradiation. *Science Advances*, **2019**, 5, eaav2252	14.3	39
153	First-principles absorption spectra of Cun (n=2–20) clusters. *Physical Review B*, **2011**, 83,	3.3	39
152	Low Contact Barrier in 2H/1T' MoTe In-Plane Heterostructure Synthesized by Chemical Vapor Deposition. *ACS Applied Materials & Interfaces*, **2019**, 11, 12777-12785	9.5	38

151	Structural Phase Transformation in Strained Monolayer MoWSe Alloy. *ACS Nano*, **2018**, 12, 3468-3476	16.7	38
150	Observations of Co4+ in a higher spin state and the increase in the Seebeck coefficient of thermoelectric Ca3Co4O9. *Physical Review Letters*, **2012**, 108, 196601	7.4	38
149	Revealing the preferred interlayer orientations and stackings of two-dimensional bilayer gallium selenide crystals. *Angewandte Chemie - International Edition*, **2015**, 54, 2712-7	16.4	37
148	Characterizing the two- and three-dimensional resolution of an improved aberration-corrected STEM. *Microscopy and Microanalysis*, **2009**, 15, 441-53	0.5	36
147	Structural, Electronic, and Optical Properties of Noble Metal Clusters from First Principles. *Journal of Cluster Science*, **2006**, 17, 609-626	3	36
146	Deformation Mechanisms of Vertically Stacked WS /MoS Heterostructures: The Role of Interfaces. *ACS Nano*, **2018**, 12, 4036-4044	16.7	35
145	Humidity sensing using vertically oriented arrays of ReS 2 nanosheets deposited on an interdigitated gold electrode. *2D Materials*, **2016**, 3, 045012	5.9	32
144	Detecting magnetic ordering with atomic size electron probes. *Advanced Structural and Chemical Imaging*, **2016**, 2,	3.9	32
143	Vibrational Spectroscopy of Water with High Spatial Resolution. *Advanced Materials*, **2018**, 30, e1802702	24	32
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138	Ab initio structural energetics of Si3N4 surfaces. *Physical Review B*, **2005**, 72,	3.3	29
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136	First-principles isomer-specific absorption spectra of Ag11. *Physical Review B*, **2007**, 75,	3.3	25
135	Low-loss electron energy loss spectroscopy: An atomic-resolution complement to optical spectroscopies and application to graphene. *Physical Review B*, **2015**, 92,	3.3	24
134	Telluride-Based Atomically Thin Layers of Ternary Two-Dimensional Transition Metal Dichalcogenide Alloys. *Chemistry of Materials*, **2018**, 30, 7262-7268	9.6	23

133	Theoretical and Experimental Insight into the Mechanism for Spontaneous Vertical Growth of ReS2 Nanosheets. *Advanced Functional Materials*, **2018**, 28, 1801286	15.6	23
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126	Controlling the Infrared Dielectric Function through Atomic-Scale Heterostructures. *ACS Nano*, **2019**, 13, 6730-6741	16.7	20
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124	Measuring the hole-state anisotropy in MgB2 by electron energy-loss spectroscopy. *Physical Review B*, **2003**, 67,	3.3	20
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110	Towards atomic scale engineering of rare-earth-doped SiAlON ceramics through aberration-corrected scanning transmission electron microscopy. *Scripta Materialia*, **2011**, 65, 656-659	5.6	14
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108	Two-Dimensional Gold Quantum Dots with Tunable Bandgaps. *ACS Nano*, **2019**, 13, 4347-4353	16.7	13
107	Vapor-Liquid-Solid Growth and Optoelectronics of Gallium Sulfide van der Waals Nanowires. *ACS Nano*, **2020**, 14, 6117-6126	16.7	13
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98	Aberrated electron probes for magnetic spectroscopy with atomic resolution: Theory and practical aspects. *Physical Review B*, **2016**, 93,	3.3	11

97	Crystal-induced effects at crystal/amorphous interfaces: The case of Si3N4/SiO2. *Physical Review B*, **2010**, 82,	3.3	11
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89	Probing the electronic structure and optical response of a graphene quantum disk supported on monolayer graphene. *Journal of Physics Condensed Matter*, **2012**, 24, 314213	1.8	9
88	Identification and lattice location of oxygen impurities in β-Si3N4. *Applied Physics Letters*, **2009**, 95, 164101	3.4	9
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84	Defect chemistry of phospho-olivine nanoparticles synthesized by a microwave-assisted solvothermal process. *Journal of Solid State Chemistry*, **2013**, 205, 197-204	3.3	8
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59	Proposal for a three-dimensional magnetic measurement method with nanometer-scale depth resolution. *Physical Review B*, **2018**, 98,	3.3	4
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50	High spatial and energy resolution electron energy loss spectroscopy of the magnetic and electric excitations in plasmonic nanorod oligomers. *Optics Express*, **2021**, 29, 4661-4671	3.3	3
49	Vorticity in electron beams: Definition, properties, and its relationship with magnetism. *Physical Review B*, **2016**, 94,	3.3	2
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