Juan Carlos Cuevas

List of Publications by Year
in descending order

153 papers	10,817 citations	26630 56 h-index	31849 101 g-index
161 all docs	161 docs citations	161 times ranked	7061 citing authors

#	Article	IF	Citations
1	The signature of chemical valence in the electrical conduction through a single-atom contact. Nature, 1998, 394, 154-157.	27.8	597
2	Hamiltonian approach to the transport properties of superconducting quantum point contacts. Physical Review B, 1996, 54, 7366-7379.	3.2	438
3	Optical rectification and field enhancement in a plasmonic nanogap. Nature Nanotechnology, 2010, 5, 732-736.	31.5	348
4	Radiative heat transfer in the extreme near field. Nature, 2015, 528, 387-391.	27.8	332
5	Theory of Half-Metal/Superconductor Heterostructures. Physical Review Letters, 2003, 90, 137003.	7.8	331
6	Highly Conductive Molecular Junctions Based on Direct Binding of Benzene to Platinum Electrodes. Physical Review Letters, 2008, 101, 046801.	7.8	287
7	Microscopic Origin of Conducting Channels in Metallic Atomic-Size Contacts. Physical Review Letters, 1998, 80, 1066-1069.	7.8	245
8	Enhancement of near-field radiative heat transfer using polar dielectric thin films. Nature Nanotechnology, 2015, 10, 253-258.	31.5	237
9	Electrical Transport through Single-Molecule Junctions: From Molecular Orbitals to Conduction Channels. Physical Review Letters, 2002, 88, 256803.	7.8	229
10	Heat dissipation in atomic-scale junctions. Nature, 2013, 498, 209-212.	27.8	219
11	Long-range charge transport in single G-quadruplex DNA molecules. Nature Nanotechnology, 2014, 9, 1040-1046.	31.5	218
12	Single-Molecule Junctions Based on Nitrile-Terminated Biphenyls: A Promising New Anchoring Group. Journal of the American Chemical Society, 2011, 133, 184-187.	13.7	212
13	Revealing the Role of Anchoring Groups in the Electrical Conduction Through Singleâ€Molecule Junctions. Small, 2010, 6, 1529-1535.	10.0	200
14	Symmetries of Pairing Correlations in Superconductorâ€“Ferromagnet Nanostructures. Journal of Low Temperature Physics, 2007, 147, 457-476.	1.4	176
15	Quantized thermal transport in single-atom junctions. Science, 2017, 355, 1192-1195.	12.6	165
16	Radiative Heat Transfer. ACS Photonics, 2018, 5, 3896-3915.	6.6	163
17	Electron-vibration interaction in transport through atomic gold wires. Physical Review B, 2005, 72, .	3.2	161
18	Evolution of Conducting Channels in Metallic Atomic Contacts under Elastic Deformation. Physical Review Letters, 1998, 81, 2990-2993.	7.8	154

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19	Resonant tunneling through a small quantum dot coupled to superconducting leads. Physical Review B, 1997, 55, R6137-R6140.	3.2	147
20	Near-field radiative heat transfer in many-body systems. Reviews of Modern Physics, 2021, 93, .	45.6	143
21	Structure and conductance histogram of atomic-sized Au contacts. Physical Review B, 2005, 72, .	3.2	134
22	Even-Odd Effect in Andreev Transport through a Carbon Nanotube Quantum Dot. Physical Review Letters, 2007, 99, 126602.	7.8	127
23	Hybrid Magnetoplasmonic Crystals Boost the Performance of Nanohole Arrays as Plasmonic Sensors. ACS Photonics, 2016, 3, 203-208.	6.6	127
24	Magnetic field control of near-field radiative heat transfer and the realization of highly tunable hyperbolic thermal emitters. Physical Review B, 2015, 92, .	3.2	123
25	Peltier cooling in molecular junctions. Nature Nanotechnology, 2018, 13, 122-127.	31.5	120
26	A current-driven single-atom memory. Nature Nanotechnology, 2013, 8, 645-648.	31.5	119
27	Direct observation of Josephson vortex cores. Nature Physics, 2015, 11, 332-337.	16.7	119
28	Study of radiative heat transfer in Ã…ngstrÃ¶m- and nanometre-sized gaps. Nature Communications, 2017, 8, .	12.8	117
29	Length-dependent conductance and thermopower in single-molecule junctions of dithiolated oligophenylene derivatives: A density functional study. Physical Review B, 2008, 78, .	3.2	112
30	Enhancing Near-Field Radiative Heat Transfer with Si-based Metasurfaces. Physical Review Letters, 2017, 118, 203901.	7.8	107
31	Kondo effect in normal-superconductor quantum dots. Physical Review B, 2001, 63, .	3.2	106
32	Theoretical analysis of the conductance histograms and structural properties of Ag, Pt, and Ni nanocontacts. Physical Review B, 2006, 74, .	3.2	95
33	Shot Noise and Coherent Multiple Charge Transfer in Superconducting Quantum Point Contacts. Physical Review Letters, 1999, 82, 4086-4089.	7.8	91
34	Density-functional study of tilt-angle and temperature-dependent conductance in biphenyl dithiol single-molecule junctions. Physical Review B, 2008, 77, .	3.2	91
35	Heat dissipation and its relation to thermopower in single-molecule junctions. New Journal of Physics, 2014, 16, 015004.	2.9	88
36	Proximity dc squids in the long-junction limit. Physical Review B, 2008, 77, .	3.2	87

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37	Theoretical description of the electrical conduction in atomic and molecular junctions. Nanotechnology, 2003, 14, R29-R38.	2.6	85
38	Bioengineering a Single-Protein Junction. Journal of the American Chemical Society, 2017, 139, 15337-15346.	13.7	84
39	Cluster-based density-functional approach to quantum transport through molecular and atomic contacts. New Journal of Physics, 2008, 10, 125019.	2.9	82
40	Magnetic Interference Patterns and Vortices in Diffusive SNS Junctions. Physical Review Letters, 2007, 99, 217002.	7.8	81
41	Tunneling explains efficient electron transport via protein junctions. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E4577-E4583.	7.1	81
42	Anisotropic Thermal Magnetoresistance for an Active Control of Radiative Heat Transfer. ACS Photonics, 2018, 5, 705-710.	6.6	80
43	Density of states and supercurrent in diffusive SNS junctions: Roles of nonideal interfaces and spin-flip scattering. Physical Review B, 2007, 76, .	3.2	77
44	Proximity effect and multiple Andreev reflections in diffusive superconductorâ€“normal-metalâ€“superconductor junctions. Physical Review B, 2006, 73, .	3.2	73
45	Quasiclassical description of transport through superconducting contacts. Physical Review B, 2001, 64, .	3.2	70
46	Resonant Enhancement of Magneto-Optical Activity Induced by Surface Plasmon Polariton Modes Coupling in 2D Magnetoplasmonic Crystals. ACS Photonics, 2015, 2, 1769-1779.	6.6	69
47	Scanning Tunneling Spectroscopy Study of the Proximity Effect in a Disordered Two-Dimensional Metal. Physical Review Letters, 2013, 110, 157003.	7.8	64
48	Full Counting Statistics of Multiple Andreev Reflections. Physical Review Letters, 2003, 91, 187001.	7.8	61
49	Determining the current polarization in Al/Co nanostructured point contacts. Physical Review B, 2004, 69, .	3.2	61
50	Generalized scattering-matrix approach for magneto-optics in periodically patterned multilayer systems. Physical Review B, 2012, 85, .	3.2	59
51	Modeling elastic and photoassisted transport in organic molecular wires: Length dependence and current-voltage characteristics. Physical Review B, 2008, 77, .	3.2	58
52	Plasmon-Induced Conductance Enhancement in Single-Molecule Junctions. Journal of Physical Chemistry Letters, 2013, 4, 2811-2816.	4.6	58
53	Transfer-matrix description of heterostructures involving superconductors and ferromagnets. Physical Review B, 2004, 69, .	3.2	57
54	Thermal discrete dipole approximation for the description of thermal emission and radiative heat transfer of magneto-optical systems. Physical Review B, 2017, 95, .	3.2	57

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55	Theoretical study of the charge transport through C<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>60</mml:mn></mml:msub></mml:math>-based single-molecule junctions. Physical Review B, 2012, 85, .	3.2	51
56	Current rectification in a single molecule diode: the role of electrode coupling. Nanotechnology, 2015, 26, 291001.	2.6	51
57	Microwave Spectroscopy Reveals the Quantum Geometric Tensor of Topological Josephson Matter. Physical Review Letters, 2020, 124, 197002.	7.8	51
58	Field enhancement in subnanometer metallic gaps. Physical Review B, 2011, 83, .	3.2	48
59	The Vortex State and Josephson Critical Current ofÂaÂDiffusive SNS Junction. Journal of Low Temperature Physics, 2008, 153, 304-324.	1.4	47
60	Backbone charge transport in double-stranded DNA. Nature Nanotechnology, 2020, 15, 836-840.	31.5	46
61	Subharmonic Shapiro Steps and Assisted Tunneling in Superconducting Point Contacts. Physical Review Letters, 2002, 88, 157001.	7.8	45
62	Subharmonic gap structure in short ballistic graphene junctions. Physical Review B, 2006, 74, .	3.2	45
63	Proximity Effect between Two Superconductors Spatially Resolved by Scanning Tunneling Spectroscopy. Physical Review X, 2014, 4, .	8.9	45
64	Subgap structure in asymmetric superconducting tunnel junctions. Physical Review B, 2006, 74, .	3.2	42
65	Theoretical study of the conductance of ferromagnetic atomic-sized contacts. Physical Review B, 2008, 77, .	3.2	42
66	Tunnelling dynamics between superconducting bound states at the atomic limit. Nature Physics, 2020, 16, 1227-1231.	16.7	42
67	Molecular dynamics study of the thermopower of Ag, Au, and Pt nanocontacts. Physical Review B, 2011, 84, .	3.2	41
68	Length dependence of the thermal conductance of alkane-based single-molecule junctions: Anab initiostudy. Physical Review B, 2016, 94, .	3.2	40
69	Quantum Thermopower of Metallic Atomic-Size Contacts at Room Temperature. Nano Letters, 2015, 15, 1006-1011.	9.1	39
70	Role of electronic structure in photoassisted transport through atomic-sized contacts. Physical Review B, 2007, 75, .	3.2	38
71	Faraday effect in hybrid magneto-plasmonic photonic crystals. Optics Express, 2015, 23, 22238.	3.4	38
72	Photoconductance of organic single-molecule contacts. Physical Review B, 2007, 76, .	3.2	37

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73	Theory of Microwave-Assisted Supercurrent in Quantum Point Contacts. Physical Review Letters, 2010, 105, 117001.	7.8	37
74	Thermal conductance and thermoelectric figure of merit of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">C</mml:mi><mml:mn>60</mml:mn></mml:msub></mml:math> -based single-molecule junctions: Electrons, phonons, and photons. Physical Review B, 2017, 95, .	3.2	36
75	Super-Planckian far-field radiative heat transfer. Physical Review B, 2018, 97, .	3.2	36
76	Geometry-related magnetic interference patterns in long<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>S</mml:mi><mml:mi>N</mml:mi><mml:mi>S</mml:mi></mml:mrow></mml:math>Josephson junctions. Physical Review B, 2012, 86, .	3.2	34
77	Charge-Transport Mechanisms in Azurin-Based Monolayer Junctions. Journal of Physical Chemistry C, 2019, 123, 5907-5922.	3.1	33
78	Voltage-induced Shapiro steps in a superconducting multiterminal structure. Physical Review B, 2007, 75, .	3.2	31
79	Tuning the thermal conductance of molecular junctions with interference effects. Physical Review B, 2017, 96, .	3.2	31
80	A Molecular Platinum Cluster Junction: A Single-Molecule Switch. Journal of the American Chemical Society, 2013, 135, 2052-2055.	13.7	29
81	Single-molecule conductance of a chemically modified, Ï€-extended tetrathiafulvalene and its charge-transfer complex with F₄TCNQ. Beilstein Journal of Organic Chemistry, 2015, 11, 1068-1078.	2.2	29
82	dc transport in superconducting point contacts:â€ƒA full-counting-statistics view. Physical Review B, 2004, 70, .	3.2	28
83	Theory of Microwave-Assisted Supercurrent in Diffusive SNS Junctions. Physical Review Letters, 2010, 104, 247003.	7.8	28
84	Orbital origin of the electrical conduction in ferromagnetic atomic-size contacts: Insights from shot noise measurements and theoretical simulations. Physical Review B, 2016, 93, .	3.2	28
85	Magnetic field effects in the near-field radiative heat transfer between planar structures. Physical Review B, 2020, 101, .	3.2	28
86	Quantum phase transitions and the role of impurity-substrate hybridization in Yu-Shiba-Rusinov states. Communications Physics, 2020, 3, .	5.3	27
87	Microwave-assisted tunneling and interference effects in superconducting junctions under fast driving signals. Physical Review B, 2020, 101, .	3.2	27
88	Electron Transport Through Homopeptides: Are They Really Good Conductors?. ACS Omega, 2018, 3, 3778-3785.	3.5	26
89	A Solidâ€State Protein Junction Serves as a Biasâ€Induced Current Switch. Angewandte Chemie - International Edition, 2019, 58, 11852-11859.	13.8	26
90	Can Electron Transport through a Blue-Copper Azurin Be Coherent? An Ab Initio Study. Journal of Physical Chemistry C, 2021, 125, 1693-1702.	3.1	25

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91	Supercurrent and Andreev bound state dynamics in superconducting quantum point contacts under microwave irradiation. Physical Review B, 2011, 84, .	3.2	24
92	Normal-Metalâ€“Superconductor Near-Field Thermal Diodes and Transistors. Physical Review Applied, 2021, 15, .	3.8	24
93	Thermal conductance of metallic atomic-size contacts: Phonon transport and Wiedemann-Franz law. Physical Review B, 2017, 96, .	3.2	23
94	Linear ac response of diffusive SNS junctions. Physical Review B, 2011, 83, .	3.2	22
95	Influence of the magnetic field on the plasmonic properties of transparent Ni anti-dot arrays. Applied Physics Letters, 2012, 101, 063107.	3.3	22
96	Transport through superconductor/magnetic dot/superconductor structures. Physica C: Superconductivity and Its Applications, 2002, 367, 117-122.	1.2	21
97	Theory of anisotropic magnetoresistance in atomic-sized ferromagnetic metal contacts. Physical Review B, 2009, 79, .	3.2	21
98	Crossover from Josephson to Multiple Andreev Reflection Currents in Atomic Contacts. Physical Review Letters, 2007, 99, 067008.	7.8	20
99	Deep Learning for the Modeling and Inverse Design of Radiative Heat Transfer. Physical Review Applied, 2021, 16, .	3.8	20
100	Theoretical study of carbon-based tips for scanning tunnelling microscopy. Nanotechnology, 2016, 27, 105201.	2.6	19
101	Ab initio electronic structure calculations of entire blue copper azurins. Physical Chemistry Chemical Physics, 2018, 20, 30392-30402.	2.8	19
102	Transport properties of normal and ferromagnetic atomic-size constrictions with superconducting electrodes. Physica C: Superconductivity and Its Applications, 2001, 352, 67-72.	1.2	18
103	Exploring the Limits of Super-Planckian Far-Field Radiative Heat Transfer Using 2D Materials. ACS Photonics, 2018, 5, 3082-3088.	6.6	18
104	Ground-state quantum geometry in superconductorâ€“quantum dot chains. Physical Review B, 2021, 103, .	3.2	18
105	Near-field radiative heat transfer between one-dimensional magnetophotonic crystals. Physical Review B, 2021, 103, .	3.2	17
106	Transmission eigenchannels for coherent phonon transport. Physical Review B, 2018, 97, .	3.2	16
107	Tuning Structure and Dynamics of Blue Copper Azurin Junctions via Single Amino-Acid Mutations. Biomolecules, 2019, 9, 611.	4.0	16
108	Mechanical Deformation and Electronic Structure of a Blue Copper Azurin in a Solid-State Junction. Biomolecules, 2019, 9, 506.	4.0	16

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109	Spin-dependent tunneling between individual superconducting bound states. Physical Review Research, 2021, 3, .	3.6	16
110	Subharmonic gap structure ind-wave superconductors. Physical Review B, 2002, 65, .	3.2	15
111	Ab initiostudy of charge transport through single oxygen molecules in atomic aluminum contacts. Physical Review B, 2007, 76, .	3.2	15
112	Thermal radiation from subwavelength objects and the violation of Planckâ€™s law. Nature Communications, 2019, 10, 3342.	12.8	15
113	General transport properties of superconducting quantum point contacts: a Green functions approach. Superlattices and Microstructures, 1999, 25, 925-936.	3.1	14
114	Correlation between transport properties and atomic configuration of atomic contacts of zinc by low-temperature measurements. Physical Review B, 2006, 74, .	3.2	14
115	Observation of a hole-size-dependent energy shift of the surface-plasmon resonance in Ni antidot thin films. Applied Physics Letters, 2015, 106, .	3.3	14
116	Interplay between Yu-Shiba-Rusinov states and multiple Andreev reflections. Physical Review B, 2020, 101, .	3.2	14
117	Conduction channels of superconducting quantum point contacts. Physica B: Condensed Matter, 2000, 280, 425-431.	2.7	13
118	Shot noise variation within ensembles of gold atomic break junctions at room temperature. Journal of Physics Condensed Matter, 2014, 26, 474204.	1.8	12
119	Dynamical Coulomb Blockade of Multiple Andreev Reflections. Physical Review Letters, 2005, 95, 056804.	7.8	11
120	Dynamical Coulomb Blockade as a Local Probe for Quantum Transport. Physical Review Letters, 2020, 124, 156803.	7.8	11
121	Shot Noise and Multiple Andreev Reflections ind-Wave Superconductors. Physical Review Letters, 2002, 89, 227003.	7.8	10
122	Carbon tips for all-carbon single-molecule electronics. Nanoscale, 2014, 6, 6953-6958.	5.6	10
123	Doping hepta-alanine with tryptophan: A theoretical study of its effect on the electrical conductance of peptide-based single-molecule junctions. Journal of Chemical Physics, 2019, 150, 174705.	3.0	10
124	Observation of Yuâ€“Shibaâ€“Rusinov States in Superconducting Graphene. Advanced Materials, 2021, 33, e2008113.	21.0	10
125	Superconducting quantum interference at the atomic scale. Nature Physics, 2022, 18, 893-898.	16.7	10
126	Conduction channels of one-atom zinc contacts. Physical Review B, 2004, 70, .	3.2	9

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127	Extraordinary transverse magneto-optical Kerr effect in a superlens. Physical Review B, 2014, 90, .	3.2	9
128	Tunneling processes between Yu-Shiba-Rusinov bound states. Physical Review B, 2021, 103, .	3.2	9
129	Microscopic theory of the phase-dependent linear conductance in highly transmissive superconducting quantum point contacts. Physica B: Condensed Matter, 1996, 218, 126-129.	2.7	8
130	Carbon tips as electrodes for single-molecule junctions. Applied Physics Letters, 2011, 99, 123105.	3.3	8
131	Metallic properties of magnesium point contacts. New Journal of Physics, 2009, 11, 073043.	2.9	7
132	Single channel Josephson effect in a high transmission atomic contact. Communications Physics, 2020, 3, .	5.3	7
133	The Role of Metal Ions in the Electron Transport through Azurin-Based Junctions. Applied Sciences (Switzerland), 2021, 11, 3732.	2.5	6
134	Magnetic-field controlled anomalous refraction in doped semiconductors. Journal of the Optical Society of America B: Optical Physics, 2019, 36, 935.	2.1	6
135	The phase-dependent linear conductance of a superconducting quantum point contact. Journal of Physics Condensed Matter, 1996, 8, 449-456.	1.8	5
136	Towards a theory of electrical transport through atomic and molecular junctions. Phase Transitions, 2004, 77, 175-189.	1.3	5
137	Carbon-fiber tips for scanning probe microscopes and molecular electronics experiments. Nanoscale Research Letters, 2012, 7, 254.	5.7	4
138	Extracting transport channel transmissions in scanning tunneling microscopy using superconducting excess current. Physical Review B, 2022, 105, .	3.2	4
139	Theory of drift-enabled control in nonlocal magnon transport. Journal of Physics Condensed Matter, 2022, 34, 295801.	1.8	3
140	Recent Advances in Understanding the Electron Transport Through Metal-Azurin-Metal Junctions. Frontiers in Physics, 0, 10, .	2.1	3
141	Electronic transport through single noble gas atoms. Physical Review B, 2011, 84, .	3.2	2
142	Plasmons in nanoscale metal junctions: optical rectification and thermometry. , 2011, , .		2
143	Mechanical relations between conductive and radiative heat transfer. Physical Review B, 2020, 102, .	3.2	2
144	Channel-based algebraic limits to conductive heat transfer. Physical Review B, 2020, 102, .	3.2	2

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145	Local density of states in clean two-dimensional superconductorâ€“normal metalâ€“superconductor heterostructures. Physical Review Research, 2019, 1, .	3.6	2
146	A Solidâ€State Protein Junction Serves as a Biasâ€Induced Current Switch. Angewandte Chemie, 2019, 131, 11978-11985.	2.0	1
147	The environment does the trick. Nature Nanotechnology, 2015, 10, 486-487.	31.5	0
148	Radiative heat transfer across nanometer-size gaps. , 2016, , .		0
149	InnenrÃ¼cktitelbild: A Solidâ€State Protein Junction Serves as a Biasâ€Induced Current Switch (Angew.) Tj ETQq1 1 0.784314 rgBT /Ov	2.0	0
150	Quantum Noise and Mutiple Andreev Reflections in Superconducting Contacts. , 2003, , 51-71.		0
151	Molecular Transport Through Single Molecules. , 2003, , 403-418.		0
152	Photoinduced Currents in Normal and Superconducting Micro-Junctions. , 1995, , 281-294.		0
153	Proximity Effect A New Insight from In Situ Fabricated Hybrid Nanostructures. , 2017, , .		0