Christian Ast

List of Publications by Year
in descending order

83 papers	5,127 citations	117453 34 h-index	85405 71 g-index
87 all docs	87 docs citations	87 times ranked	5961 citing authors

#	Article	IF	Citations
1	Extracting transport channel transmissions in scanning tunneling microscopy using superconducting excess current. Physical Review B, 2022, 105, .	1.1	4
2	Combining electron spin resonance spectroscopy with scanning tunneling microscopy at high magnetic fields. Review of Scientific Instruments, 2022, 93, 043705.	0.6	7
3	Superconducting quantum interference at the atomic scale. Nature Physics, 2022, 18, 893-898.	6.5	10
4	Visualizing the multifractal wave functions of a disordered two-dimensional electron gas. Physical Review Research, 2021, 3, .	1.3	7
5	Lightâ€“matter interaction at atomic scales. Nature Reviews Physics, 2021, 3, 441-453.	11.9	46
6	Tunneling processes between Yu-Shiba-Rusinov bound states. Physical Review B, 2021, 103, .	1.1	9
7	Band Engineering of Dirac Semimetals Using Charge Density Waves. Advanced Materials, 2021, 33, e2101591.	11.1	32
8	Spin-dependent tunneling between individual superconducting bound states. Physical Review Research, 2021, 3, .	1.3	16
9	Quantum phase transitions and the role of impurity-substrate hybridization in Yu-Shiba-Rusinov states. Communications Physics, 2020, 3, .	2.0	27
10	Tunnelling dynamics between superconducting bound states at the atomic limit. Nature Physics, 2020, 16, 1227-1231.	6.5	42
11	Single channel Josephson effect in a high transmission atomic contact. Communications Physics, 2020, 3, .	2.0	7
12	Band dispersion of graphene with structural defects. Physical Review B, 2020, 101, .	1.1	13
13	Interplay between Yu-Shiba-Rusinov states and multiple Andreev reflections. Physical Review B, 2020, 101, .	1.1	14
14	Modular Arithmetic with Nodal Lines: Drumhead Surface States in ZrSiTe. Physical Review X, 2020, 10, .	2.8	21
15	High mobility in a van der Waals layered antiferromagnetic metal. Science Advances, 2020, 6, eaay6407.	4.7	85
16	Microwave-assisted tunneling and interference effects in superconducting junctions under fast driving signals. Physical Review B, 2020, 101, .	1.1	27
17	Dynamical Coulomb Blockade as a Local Probe for Quantum Transport. Physical Review Letters, 2020, 124, 156803.	2.9	11
18	Robustness of Yu-Shiba-Rusinov resonances in the presence of a complex superconducting order parameter. Physical Review B, 2019, 100, .	1.1	17

#	Article	IF	Citations
19	Dirac fermions and possible weak antilocalization in LaCuSb2. APL Materials, 2019, 7, .	2.2	16
20	The effect of spin-orbit coupling on nonsymmorphic square-net compounds. Journal of Physics and Chemistry of Solids, 2019, 128, 296-300.	1.9	16
21	Tunable Weyl and Dirac states in the nonsymmorphic compound CeSbTe. Science Advances, 2018, 4, eaar2317.	4.7	110
22	Correct Brillouin zone and electronic structure of BiPd. Physical Review B, 2018, 97, .	1.1	8
23	Single-Crystal Growth and Characterization of the Chalcopyrite Semiconductor CuInTe₂ for Photoelectrochemical Solar Fuel Production. Journal of Physical Chemistry Letters, 2018, 9, 6833-6840.	2.1	9
24	A little bit of everything. Nature Physics, 2018, 14, 874-875.	6.5	1
25	Quantum Brownian Motion at Strong Dissipation Probed by Superconducting Tunnel Junctions. Physical Review Letters, 2017, 119, 147702.	2.9	7
26	Surface Floating 2D Bands in Layered Nonsymmorphic Semimetals: ZrSiS and Related Compounds. Physical Review X, 2017, 7, .	2.8	48
27	An ultrahigh-vacuum cryostat for simultaneous scanning tunneling microscopy and magneto-transport measurements down to 400 mK. Review of Scientific Instruments, 2017, 88, 123707.	0.6	6
28	Non-symmorphic band degeneracy at the Fermi level in ZrSiTe. New Journal of Physics, 2016, 18, 125014.	1.2	88
29	Observation of Dirac surface states in the noncentrosymmetric superconductor BiPd. Physical Review B, 2016, 94, .	1.1	22
30	Critical Josephson current in the dynamical Coulomb blockade regime. Physical Review B, 2016, 93, .	1.1	25
31	Sensing the quantum limit in scanning tunnelling spectroscopy. Nature Communications, 2016, 7, 13009.	5.8	55
32	Dirac cone protected by non-symmorphic symmetry and three-dimensional Dirac line node in ZrSiS. Nature Communications, 2016, 7, 11696.	5.8	591
33	Surface band structure of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Bi</mml:mi><mml:mrow><mml:mn>1</mml:mn> Physical Review B, 2015, 91, .	1.1	38
34	Tracking Primary Thermalization Events in Graphene with Photoemission at Extreme Time Scales. Physical Review Letters, 2015, 115, 086803.	2.9	91
35	Extracting the Rashba splitting from scanning tunneling microscopy measurements. Journal of Electron Spectroscopy and Related Phenomena, 2015, 201, 30-35.	0.8	2
36	Long- versus Short-Range Scattering in Doped Epitaxial Graphene. Nano Letters, 2015, 15, 2825-2829.	4.5	19

#	Article	IF	Citations
37	Superconducting scanning tunneling microscopy tips in a magnetic field: Geometry-controlled order of the phase transition. Applied Physics Letters, 2015, 107, .	1.5	15
38	A nanoscale gigahertz source realized with Josephson scanning tunneling microscopy. Applied Physics Letters, 2015, 106, .	1.5	21
39	Evidence for superconductivity in Li-decorated monolayer graphene. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 11795-11799.	3.3	269
40	Ambiguity of Experimental Spin Information from States with Mixed Orbital Symmetries. Physical Review Letters, 2014, 113, 116402.	2.9	36
41	Probing Absolute Spin Polarization at the Nanoscale. Nano Letters, 2014, 14, 7171-7174.	4.5	27
42	Origin of Rashba splitting in the quantized subbands at the Bi<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>Se<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>3</mml:mn></mml:msub></mml:math>surface. Physical Review B, 2013, 88, .	1.1	17
43	A Natural Topological Insulator. Nano Letters, 2013, 13, 1179-1184.	4.5	38
44	A 10ÂmK scanning tunneling microscope operating in ultra high vacuum and high magnetic fields. Review of Scientific Instruments, 2013, 84, 033903.	0.6	67
45	Rashba-type spin splitting from interband scattering in quasiparticle interference maps. Physical Review B, 2013, 87, .	1.1	19
46	Miniature active damping stage for scanning probe applications in ultra high vacuum. Review of Scientific Instruments, 2012, 83, 033701.	0.6	4
47	Thermalization of photoexcited carriers in bismuth investigated by time-resolved terahertz spectroscopy andab initiocalculations. Physical Review B, 2012, 85, .	1.1	34
48	Scanning tunneling microscopy of two-dimensional semiconductors: Spin properties and disorder. Physica E: Low-Dimensional Systems and Nanostructures, 2012, 44, 1795-1814.	1.3	25
49	Graphene Sublattice Symmetry and Isospin Determined by Circular Dichroism in Angle-Resolved Photoemission Spectroscopy. Nano Letters, 2012, 12, 3900-3904.	4.5	44
50	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>s</mml:mi><mml:mi>p</mml:mi></mml:mrow></mml:math>-band tight-binding model for the Bychkov-Rashba effect in a two-dimensional electron system including nearest-neighbor contributions from an electric field. Physical Review B, 2012, 86, .	1.1	59
51	Reactive Chemical Doping of the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>Bi</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi>Se</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:math>Insulator. Physical Review Letters, 2011, 107, 177602.	2.9	235
52	Illuminating the dark corridor in graphene: Polarization dependence of angle-resolved photoemission spectroscopy on graphene. Physical Review B, 2011, 83, .	1.1	87
53	Tuning the spin texture in binary and ternary surface alloys on Ag(111). Physical Review B, 2011, 83, .	1.1	16
54	Structural influence on the Rashba-type spin splitting in surface alloys. Physical Review B, 2010, 81, .	1.1	64

#	Article	IF	Citations
55	Electronic decoupling of an epitaxial graphene monolayer by gold intercalation. Physical Review B, 2010, 81, .	1.1	214
56	Influence of the substrate on the spin-orbit splitting in surface alloys on (111) noble-metal surfaces. Physical Review B, 2009, 80, .	1.1	82
57	Assessing the atomic contribution to the Rashba spin-orbit splitting in surface alloys: Sb/Ag(111). Physical Review B, 2009, 79, .	1.1	62
58	Silicon Surface with Giant Spin Splitting. Physical Review Letters, 2009, 103, 046803.	2.9	196
59	New Mechanism for Spin-Orbit Splitting of Conduction States in Surface Alloys. E-Journal of Surface Science and Nanotechnology, 2009, 7, 264-268.	0.1	0
60	Atomic Hole Doping of Graphene. Nano Letters, 2008, 8, 4603-4607.	4.5	390
61	Spin-orbit split two-dimensional electron gas with tunable Rashba and Fermi energy. Physical Review B, 2008, 77, .	1.1	99
62	Design criteria for scanning tunneling microscopes to reduce the response to external mechanical disturbances. Review of Scientific Instruments, 2008, 79, 093704.	0.6	22
63	Effect of rare-gas adsorption on the spin-orbit split bands of a surface alloy: Xe on Ag(111)-<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mrow><mml:mo>(</mml:mo><mml:msqrt><mml:mn>3</mml:mn></mml:msqrt><mml:mo>Ã—<mml:mathvariant="normal">Bi</mml:mi></mml:mrow></mml:math>. Physical Review B, 2008, 77, .	1.1	18
64	Tunable Spin Gaps in a Quantum-Confined Geometry. Physical Review Letters, 2008, 101, 196805.	2.9	51
65	Local detection of spin-orbit splitting by scanning tunneling spectroscopy. Physical Review B, 2007, 75, .	1.1	81
66	Giant Spin Splitting through Surface Alloying. Physical Review Letters, 2007, 98, 186807.	2.9	732
67	Electronic structure of an orderedPbâˆ•Ag(111)surface alloy: Theory and experiment. Physical Review B, 2006, 73, .	1.1	92
68	Orbital selective overlayer-substrate hybridization in a Pb monolayer on Ag(111). Physical Review B, 2006, 73, .	1.1	14
69	Photoemission as a probe of coexisting and conflicting periodicities in low-dimensional solids. New Journal of Physics, 2005, 7, 106-106.	1.2	15
70	Final-state band structure-induced modulations of the photoemission linewidth in angle-resolved valence band spectra: a case study on Bi(1â€‰1â€‰1). Journal of Electron Spectroscopy and Related Phenomena, 2005, 144-147, 679-683.	0.8	0
71	Ast and HÃ¶chst Reply:. Physical Review Letters, 2005, 94, .	2.9	0
72	Hidden one-dimensional electronic structure and non-Fermi-liquid angle-resolved photoemission line shapes ofÎ·â€Mo4O11. Physical Review B, 2005, 72, .	1.1	10

#	Article	IF	Citations
73	High-resolution photoemission mapping of the three-dimensional band structure of Bi(111). Physical Review B, 2004, 70, .	1.1	24
74	The Fermi surfaces of thin Sb(111) films. Journal of Electron Spectroscopy and Related Phenomena, 2004, 137-140, 441-444.	0.8	13
75	Momentum-dependent low energy losses in angle-resolved core level photoemission spectra. Journal of Electron Spectroscopy and Related Phenomena, 2004, 137-140, 407-411.	0.8	0
76	Progress in the understanding of the normal state of the cuprates. Applied Physics A: Materials Science and Processing, 2003, 76, 673-679.	1.1	1
77	Indication of Charge-Density-Wave Formation in Bi(111). Physical Review Letters, 2003, 90, 016403.	2.9	38
78	Electronic structure of a bismuth bilayer. Physical Review B, 2003, 67, .	1.1	81
79	Momentum-Dependent Energy Losses in Core Level Photoemission Spectra of Poorly Conducting Metals. Physical Review Letters, 2003, 91, 197602.	2.9	8
80	Unusual electronic ground state of a prototype cuprate: Band splitting of single CuO 2 -plane Bi 2 Sr 2 â^' x La x CuO 6 + Î´. Europhysics Letters, 2002, 60, 615-621.	0.7	6
81	Two-dimensional band structure and self-energy of Bi(111) near theÎ“Â¯point. Physical Review B, 2002, 66, .	1.1	43
82	Fermi Surface and Superconducting Gap of Triple-Layered Bi2Sr2Ca2Cu3O10 + Î´. Journal of Superconductivity and Novel Magnetism, 2002, 15, 147-152.	0.5	8
83	Fermi Surface of Bi(111) Measured by Photoemission Spectroscopy. Physical Review Letters, 2001, 87, 177602.	2.9	203