

Christian Ast

List of Publications by Year in descending order

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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	Giant Spin Splitting through Surface Alloying. Physical Review Letters, 2007, 98, 186807.	2.9	732
2	Dirac cone protected by non-symmorphic symmetry and three-dimensional Dirac line node in ZrSiS. Nature Communications, 2016, 7, 11696.	5.8	591
3	Atomic Hole Doping of Graphene. Nano Letters, 2008, 8, 4603-4607.	4.5	390
4	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
5	Reactive Chemical Doping of the Bi_2Se_3 Insulator. Physical Review Letters, 2011, 107, 177602.	2.9	235
6	Electronic decoupling of an epitaxial graphene monolayer by gold intercalation. Physical Review B, 2010, 81, .	1.1	214
7	Fermi Surface of Bi(111) Measured by Photoemission Spectroscopy. Physical Review Letters, 2001, 87, 177602.	2.9	203
8	Silicon Surface with Giant Spin Splitting. Physical Review Letters, 2009, 103, 046803.	2.9	196
9	Tunable Weyl and Dirac states in the nonsymmorphic compound CeSbTe. Science Advances, 2018, 4, eaar2317.	4.7	110
10	Spin-orbit split two-dimensional electron gas with tunable Rashba and Fermi energy. Physical Review B, 2008, 77, .	1.1	99
11	Electronic structure of an ordered Pb^*Ag (111) surface alloy: Theory and experiment. Physical Review B, 2006, 73, .	1.1	92
12	Tracking Primary Thermalization Events in Graphene with Photoemission at Extreme Time Scales. Physical Review Letters, 2015, 115, 086803.	2.9	91
13	Non-symmorphic band degeneracy at the Fermi level in ZrSiTe. New Journal of Physics, 2016, 18, 125014.	1.2	88
14	Illuminating the dark corridor in graphene: Polarization dependence of angle-resolved photoemission spectroscopy on graphene. Physical Review B, 2011, 83, .	1.1	87
15	High mobility in a van der Waals layered antiferromagnetic metal. Science Advances, 2020, 6, eaay6407.	4.7	85
16	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
17	Electronic structure of a bismuth bilayer. Physical Review B, 2003, 67, .	1.1	81
18	Local detection of spin-orbit splitting by scanning tunneling spectroscopy. Physical Review B, 2007, 75, .	1.1	81

#	ARTICLE	IF	CITATIONS
19	A 10ÅmK scanning tunneling microscope operating in ultra high vacuum and high magnetic fields. Review of Scientific Instruments, 2013, 84, 033903.	0.6	67
20	Structural influence on the Rashba-type spin splitting in surface alloys. Physical Review B, 2010, 81, .	1.1	64
21	Assessing the atomic contribution to the Rashba spin-orbit splitting in surface alloys: Sb/Ag(111). Physical Review B, 2009, 79, .	1.1	62
22	$\langle \text{band tight-binding model for the Bychkov-Rashba effect in a two-dimensional electron system including nearest-neighbor contributions from an electric field. Physical Review B, 2012, 86, .} \rangle$	1.1	59
23	Sensing the quantum limit in scanning tunnelling spectroscopy. Nature Communications, 2016, 7, 13009.	5.8	55
24	Tunable Spin Gaps in a Quantum-Confined Geometry. Physical Review Letters, 2008, 101, 196805.	2.9	51
25	Surface Floating 2D Bands in Layered Nonsymmorphic Semimetals: ZrSiS and Related Compounds. Physical Review X, 2017, 7, .	2.8	48
26	Light-matter interaction at atomic scales. Nature Reviews Physics, 2021, 3, 441-453.	11.9	46
27	Graphene Sublattice Symmetry and Isospin Determined by Circular Dichroism in Angle-Resolved Photoemission Spectroscopy. Nano Letters, 2012, 12, 3900-3904.	4.5	44
28	Two-dimensional band structure and self-energy of Bi(111) near the $\bar{\Gamma}$ -point. Physical Review B, 2002, 66, .	1.1	43
29	Tunnelling dynamics between superconducting bound states at the atomic limit. Nature Physics, 2020, 16, 1227-1231.	6.5	42
30	Indication of Charge-Density-Wave Formation in Bi(111). Physical Review Letters, 2003, 90, 016403.	2.9	38
31	A Natural Topological Insulator. Nano Letters, 2013, 13, 1179-1184.	4.5	38
32	Surface band structure of $\text{Bi}_{1-x}\text{Sb}_x$. Physical Review B, 2015, 91, .	11.1	38
33	Ambiguity of Experimental Spin Information from States with Mixed Orbital Symmetries. Physical Review Letters, 2014, 113, 116402.	2.9	36
34	Thermalization of photoexcited carriers in bismuth investigated by time-resolved terahertz spectroscopy and <i>ab initio</i> calculations. Physical Review B, 2012, 85, .	1.1	34
35	Band Engineering of Dirac Semimetals Using Charge Density Waves. Advanced Materials, 2021, 33, e2101591.	11.1	32
36	Probing Absolute Spin Polarization at the Nanoscale. Nano Letters, 2014, 14, 7171-7174.	4.5	27

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37	Quantum phase transitions and the role of impurity-substrate hybridization in Yu-Shiba-Rusinov states. Communications Physics, 2020, 3, .	2.0	27
38	Microwave-assisted tunneling and interference effects in superconducting junctions under fast driving signals. Physical Review B, 2020, 101, .	1.1	27
39	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
40	Critical Josephson current in the dynamical Coulomb blockade regime. Physical Review B, 2016, 93, .	1.1	25
41	High-resolution photoemission mapping of the three-dimensional band structure of Bi(111). Physical Review B, 2004, 70, .	1.1	24
42	Design criteria for scanning tunneling microscopes to reduce the response to external mechanical disturbances. Review of Scientific Instruments, 2008, 79, 093704.	0.6	22
43	Observation of Dirac surface states in the noncentrosymmetric superconductor BiPd. Physical Review B, 2016, 94, .	1.1	22
44	A nanoscale gigahertz source realized with Josephson scanning tunneling microscopy. Applied Physics Letters, 2015, 106, .	1.5	21
45	Modular Arithmetic with Nodal Lines: Drumhead Surface States in ZrSiTe. Physical Review X, 2020, 10, .	2.8	21
46	Rashba-type spin splitting from interband scattering in quasiparticle interference maps. Physical Review B, 2013, 87, .	1.1	19
47	Long- versus Short-Range Scattering in Doped Epitaxial Graphene. Nano Letters, 2015, 15, 2825-2829.	4.5	19
48	Effect of rare-gas adsorption on the spin-orbit split bands of a surface alloy: Xe on Ag(111)- $\tilde{\Delta}$ surface. Physical Review B, 2008, 77, .	1.1	18
49	Origin of Rashba splitting in the quantized subbands at the Bi ₂ Se ₃ surface. Physical Review B, 2013, 88, .	1.1	17
50	Robustness of Yu-Shiba-Rusinov resonances in the presence of a complex superconducting order parameter. Physical Review B, 2019, 100, .	1.1	17
51	Tuning the spin texture in binary and ternary surface alloys on Ag(111). Physical Review B, 2011, 83, .	1.1	16
52	Dirac fermions and possible weak antilocalization in LaCuSb ₂ . APL Materials, 2019, 7, .	2.2	16
53	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
54	Spin-dependent tunneling between individual superconducting bound states. Physical Review Research, 2021, 3, .	1.3	16

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55	Photoemission as a probe of coexisting and conflicting periodicities in low-dimensional solids. <i>New Journal of Physics</i> , 2005, 7, 106-106.	1.2	15
56	Superconducting scanning tunneling microscopy tips in a magnetic field: Geometry-controlled order of the phase transition. <i>Applied Physics Letters</i> , 2015, 107, .	1.5	15
57	Orbital selective overlayer-substrate hybridization in a Pb monolayer on Ag(111). <i>Physical Review B</i> , 2006, 73, .	1.1	14
58	Interplay between Yu-Shiba-Rusinov states and multiple Andreev reflections. <i>Physical Review B</i> , 2020, 101, .	1.1	14
59	The Fermi surfaces of thin Sb(111) films. <i>Journal of Electron Spectroscopy and Related Phenomena</i> , 2004, 137-140, 441-444.	0.8	13
60	Band dispersion of graphene with structural defects. <i>Physical Review B</i> , 2020, 101, .	1.1	13
61	Dynamical Coulomb Blockade as a Local Probe for Quantum Transport. <i>Physical Review Letters</i> , 2020, 124, 156803.	2.9	11
62	Hidden one-dimensional electronic structure and non-Fermi-liquid angle-resolved photoemission line shapes of MoO_2 . <i>Physical Review B</i> , 2005, 72, .	1.1	10
63	Superconducting quantum interference at the atomic scale. <i>Nature Physics</i> , 2022, 18, 893-898.	6.5	10
64	Single-Crystal Growth and Characterization of the Chalcopyrite Semiconductor CuInTe_2 for Photoelectrochemical Solar Fuel Production. <i>Journal of Physical Chemistry Letters</i> , 2018, 9, 6833-6840.	2.1	9
65	Tunneling processes between Yu-Shiba-Rusinov bound states. <i>Physical Review B</i> , 2021, 103, .	1.1	9
66	Fermi Surface and Superconducting Gap of Triple-Layered $\text{Bi}_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_{10} + \delta$. <i>Journal of Superconductivity and Novel Magnetism</i> , 2002, 15, 147-152.	0.5	8
67	Momentum-Dependent Energy Losses in Core Level Photoemission Spectra of Poorly Conducting Metals. <i>Physical Review Letters</i> , 2003, 91, 197602.	2.9	8
68	Correct Brillouin zone and electronic structure of BiPd. <i>Physical Review B</i> , 2018, 97, .	1.1	8
69	Quantum Brownian Motion at Strong Dissipation Probed by Superconducting Tunnel Junctions. <i>Physical Review Letters</i> , 2017, 119, 147702.	2.9	7
70	Single channel Josephson effect in a high transmission atomic contact. <i>Communications Physics</i> , 2020, 3, .	2.0	7
71	Visualizing the multifractal wave functions of a disordered two-dimensional electron gas. <i>Physical Review Research</i> , 2021, 3, .	1.3	7
72	Combining electron spin resonance spectroscopy with scanning tunneling microscopy at high magnetic fields. <i>Review of Scientific Instruments</i> , 2022, 93, 043705.	0.6	7

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73	Unusual electronic ground state of a prototype cuprate: Band splitting of single CuO 2 -plane Bi ₂ Sr ₂ Ca ₂ La _x CuO _{6+δ} . <i>Physics Letters A</i> , 2002, 287, 615-621.	0.7	6
74	An ultrahigh-vacuum cryostat for simultaneous scanning tunneling microscopy and magneto-transport measurements down to 400 mK. <i>Review of Scientific Instruments</i> , 2017, 88, 123707.	0.6	6
75	Miniature active damping stage for scanning probe applications in ultra high vacuum. <i>Review of Scientific Instruments</i> , 2012, 83, 033701.	0.6	4
76	Extracting transport channel transmissions in scanning tunneling microscopy using superconducting excess current. <i>Physical Review B</i> , 2022, 105, .	1.1	4
77	Extracting the Rashba splitting from scanning tunneling microscopy measurements. <i>Journal of Electron Spectroscopy and Related Phenomena</i> , 2015, 201, 30-35.	0.8	2
78	Progress in the understanding of the normal state of the cuprates. <i>Applied Physics A: Materials Science and Processing</i> , 2003, 76, 673-679.	1.1	1
79	A little bit of everything. <i>Nature Physics</i> , 2018, 14, 874-875.	6.5	1
80	Momentum-dependent low energy losses in angle-resolved core level photoemission spectra. <i>Journal of Electron Spectroscopy and Related Phenomena</i> , 2004, 137-140, 407-411.	0.8	0
81	Final-state band structure-induced modulations of the photoemission linewidth in angle-resolved valence band spectra: a case study on Bi(111). <i>Journal of Electron Spectroscopy and Related Phenomena</i> , 2005, 144-147, 679-683.	0.8	0
82	Ast and Hirsch Reply:. <i>Physical Review Letters</i> , 2005, 94, .	2.9	0
83	New Mechanism for Spin-Orbit Splitting of Conduction States in Surface Alloys. <i>E-Journal of Surface Science and Nanotechnology</i> , 2009, 7, 264-268.	0.1	0