

Stefan Mathias

List of Publications by Year in descending order

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Version: 2024-02-01

73
papers

3,660
citations

172457

29
h-index

128289

60
g-index

75
all docs

75
docs citations

75
times ranked

3912
citing authors

#	ARTICLE	IF	CITATIONS
1	Collapse of long-range charge order tracked by time-resolved photoemission at high momenta. Nature, 2011, 471, 490-493.	27.8	406
2	Ultrafast magnetization enhancement in metallic multilayers driven by superdiffusive spin current. Nature Communications, 2012, 3, 1037.	12.8	324
3	Controlling the Competition between Optically Induced Ultrafast Spin-Flip Scattering and Spin Transport in Magnetic Multilayers. Physical Review Letters, 2013, 110, 197201.	7.8	218
4	Revealing the subfemtosecond dynamics of orbital angular momentum in nanoplasmonic vortices. Science, 2017, 355, 1187-1191.	12.6	217
5	Probing the timescale of the exchange interaction in a ferromagnetic alloy. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 4792-4797.	7.1	210
6	Ultrafast Demagnetization Dynamics at the Edges of Magnetic Elements Observed Using a Tabletop High-Harmonic Soft X-Ray Source. Physical Review Letters, 2009, 103, 257402.	7.8	197
7	Topological states on the gold surface. Nature Communications, 2015, 6, 10167.	12.8	148
8	Spin-dependent trapping of electrons at interfaces. Nature Physics, 2013, 9, 242-247.	16.7	147
9	Band structure evolution during the ultrafast ferromagnetic-paramagnetic phase transition in cobalt. Science Advances, 2017, 3, e1602094.	10.3	119
10	Space charge effects in photoemission with a low repetition, high intensity femtosecond laser source. Journal of Applied Physics, 2006, 100, 024912.	2.5	116
11	Time- and angle-resolved photoemission spectroscopy with optimized high-harmonic pulses using frequency-doubled Ti:Sapphire lasers. Journal of Electron Spectroscopy and Related Phenomena, 2014, 195, 231-236.	1.7	95
12	Ultrafast optically induced spin transfer in ferromagnetic alloys. Science Advances, 2020, 6, eaay8717.	10.3	93
13	Quantum-Well-Induced Giant Spin-Orbit Splitting. Physical Review Letters, 2010, 104, 066802.	7.8	92
14	Direct Measurement of Core-Level Relaxation Dynamics on a Surface-Adsorbate System. Physical Review Letters, 2008, 101, 046101.	7.8	88
15	Ultrafast Demagnetization Measurements Using Extreme Ultraviolet Light: Comparison of Electronic and Magnetic Contributions. Physical Review X, 2012, 2, .	8.9	88
16	Nanoscale magnetic imaging using circularly polarized high-harmonic radiation. Science Advances, 2017, 3, eaao4641.	10.3	85
17	Angle-resolved photoemission spectroscopy with a femtosecond high harmonic light source using a two-dimensional imaging electron analyzer. Review of Scientific Instruments, 2007, 78, 083105.	1.3	83
18	Stoner versus Heisenberg: Ultrafast exchange reduction and magnon generation during laser-induced demagnetization. Physical Review B, 2016, 94, .	3.2	72

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19	Distinguishing attosecond electron-electron scattering and screening in transition metals. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E5300-E5307.	7.1	55
20	Speed and efficiency of femtosecond spin current injection into a nonmagnetic material. Physical Review B, 2017, 96, .	3.2	52
21	Self-amplified photo-induced gap quenching in a correlated electron material. Nature Communications, 2016, 7, 12902.	12.8	50
22	Direct light-induced spin transfer between different elements in a spintronic Heusler material via femtosecond laser excitation. Science Advances, 2020, 6, eaaz1100.	10.3	47
23	Time-resolved momentum microscopy with a 1 MHz high-harmonic extreme ultraviolet beamline. Review of Scientific Instruments, 2020, 91, 063905.	1.3	41
24	Ultrafast element-specific magnetization dynamics of complex magnetic materials on a table-top. Journal of Electron Spectroscopy and Related Phenomena, 2013, 189, 164-170.	1.7	40
25	Tailoring the Spin Functionality of a Hybrid Metal-Organic Interface by Means of Alkali-Metal Doping. Physical Review Letters, 2010, 104, 217602.	7.8	39
26	Controlling the Spin Texture of Topological Insulators by Rational Design of Organic Molecules. Nano Letters, 2015, 15, 6022-6029.	9.1	37
27	Quantum-Well Wave-Function Localization and the Electron-Phonon Interaction in Thin Ag Nanofilms. Physical Review Letters, 2006, 97, 236809.	7.8	35
28	Band structure dependence of hot-electron lifetimes in a Pb/Cu(111) quantum-well system. Physical Review B, 2010, 81, .	3.2	33
29	A case study for the formation of stanene on a metal surface. Communications Physics, 2019, 2, .	5.3	30
30	Efficiency of ultrafast optically induced spin transfer in Heusler compounds. Physical Review Research, 2020, 2, .	3.6	29
31	Spin-resolved photoelectron spectroscopy using femtosecond extreme ultraviolet light pulses from high-order harmonic generation. Review of Scientific Instruments, 2016, 87, 043903.	1.3	28
32	Normal-Incidence PEEM Imaging of Propagating Modes in a Plasmonic Nanocircuit. Nano Letters, 2016, 16, 6832-6837.	9.1	28
33	Strong modification of the transport level alignment in organic materials after optical excitation. Nature Communications, 2019, 10, 1470.	12.8	27
34	Efficient orbital imaging based on ultrafast momentum microscopy and sparsity-driven phase retrieval. New Journal of Physics, 2020, 22, 063012.	2.9	27
35	Ultrafast magnetization dynamics in Nickel: impact of pump photon energy. Journal of Physics Condensed Matter, 2017, 29, 244002.	1.8	26
36	Induced versus intrinsic magnetic moments in ultrafast magnetization dynamics. Physical Review B, 2018, 98, .	3.2	24

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37	Morphological modifications of Ag/Cu(111) probed by photoemission spectroscopy of quantum well states and the Shockley surface state. Applied Physics A: Materials Science and Processing, 2006, 82, 439-445.	2.3	23
38	Electromagnetic dressing of the electron energy spectrum of Au(111) at high momenta. Physical Review B, 2020, 102, .	3.2	22
39	Quantum Oscillations in Coupled Two-Dimensional Electron Systems. Physical Review Letters, 2009, 103, 026802.	7.8	18
40	Structure and electronic properties of the (3Å–3)R30°SnAu2/Au(111) surface alloy. Physical Review B, 2018, 98, .	3.2	14
41	Ultrafast element-resolved magneto-optics using a fiber-laser-driven extreme ultraviolet light source. Review of Scientific Instruments, 2021, 92, 065107.	1.3	13
42	Lifetime of an adsorbate excitation modified by a tunable two-dimensional substrate. Physical Review B, 2008, 78, .	3.2	12
43	Time and angle resolved photoemission spectroscopy using femtosecond visible and high-harmonic light. Journal of Physics: Conference Series, 2009, 148, 012042.	0.4	12
44	Orbital angular momentum structure of an unoccupied spin-split quantum-well state in Pb/Cu(111). Physical Review B, 2013, 87, .	3.2	11
45	Ultrafast Charge-Transfer Exciton Dynamics in C ₆₀ Thin Films. Journal of Physical Chemistry C, 2020, 124, 23579-23587.	3.1	11
46	Evaporation temperature-tuned physical vapor deposition growth engineering of one-dimensional non-Fermi liquid tetrathiofulvalene tetracyanoquinodimethane thin films. Applied Physics Letters, 2010, 97, 111906.	3.3	10
47	Far-from-Equilibrium Electron-Phonon Interactions in Optically Excited Graphene. Nano Letters, 2022, 22, 4897-4904.	9.1	10
48	Controlling the electronic structure of graphene using surface-adsorbate interactions. Physical Review B, 2015, 92, .	3.2	8
49	The nature of a nonlinear excitation pathway from the Shockley surface state as probed by chirped pulse two photon photoemission. New Journal of Physics, 2009, 11, 013016.	2.9	7
50	Ultrafast electron dynamics in a metallic quantum well nanofilm with spin splitting. Physical Review B, 2013, 88, .	3.2	7
51	Spectroscopy and population decay of a van der Waals gap state in layered TiSe_2 . Physical Review B, 2010, 82, .	3.2	5
52	Orbital-order phase transition in $\text{Pr}_{1-x}\text{Nd}_x\text{NiO}_2$ probed by photovoltaics. Physical Review B, 2021, 103, .	3.2	1
53	Multidimensional multiphoton momentum microscopy of the anisotropic Ag(110) surface. Physical Review B, 2022, 105, .	3.2	4
54	Spin structure of Rashba-split electronic states of Bi overlayers on Cu(1 1 1). Journal of Electron Spectroscopy and Related Phenomena, 2015, 201, 47-52.	1.7	3

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55	Ultrafast Material Science Probed Using Coherent X-ray Pulses from High-Harmonic Generation. , 2013, , 149-175.		2
56	Momentum and energy dissipation of hot electrons in a Pb/Ag(111) quantum well system. Physical Review B, 2021, 104, .	3.2	2
57	Aperiodically ordered nano-graphene on the quasicrystalline substrate. New Journal of Physics, 2020, 22, 093056.	2.9	2
58	Organische Spinventile. Physik in Unserer Zeit, 2013, 44, 111-112.	0.0	1
59	Kerr and Faraday microscope for space- and time-resolved studies. European Physical Journal B, 2014, 87, 1.	1.5	1
60	Energy enhancement of the target surface electron by using a 200 TW sub-picosecond laser. Optics Letters, 2018, 43, 3909.	3.3	1
61	Ultrafast magnetization dynamics of Mn-doped L10 FePt with spatial inhomogeneity. Journal of Magnetism and Magnetic Materials, 2020, 502, 166477.	2.3	1
62	Nanoscale Imaging of Magnetic Domains using a High-Harmonic Source. , 2017, , .		1
63	Ultrafast Electron Dynamics in a Pb/Cu(111) Quantum-Well System. , 2010, , .		0
64	Ultrafast, Element-Specific, Demagnetization Dynamics Probed Using Coherent High Harmonic Beams. , 2010, , .		0
65	Ultrafast, Element-Specific, Demagnetization Dynamics Probed using Coherent High Harmonic Beams. , 2010, , .		0
66	Probing adsorbate dynamics with chirped laser pulses in a single-pulse scheme. Physical Review B, 2010, 82, .	3.2	0
67	Reply to "Comment on "Ultrafast Demagnetization Measurements Using Extreme Ultraviolet Light: Comparison of Electronic and Magnetic Contributions" " Physical Review X, 2013, 3, .	8.9	0
68	Time-resolved Photoelectron Momentum Microscopy using a 1 MHz High-Harmonic Generation Beamline. , 2021, , .		0
69	Studying Ultrafast Magnetization Dynamics with Ultrafast Extreme Ultraviolet Light. , 2014, , .		0
70	Electron Lifetimes in a 2D Electron-Gas with Rashba SO-Coupling: Screening Properties. Springer Proceedings in Physics, 2015, , 175-178.	0.2	0
71	Heisenberg vs. Stoner: Magnon Generation and Exchange Reduction during Ultrafast Demagnetization. , 2016, , .		0
72	Heisenberg vs. Stoner: Probing the Microscopic Picture of Ultrafast Demagnetization using High Harmonics. , 2017, , .		0

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73	Development of an analytical simulation framework for angle-resolved photoemission spectra. Physical Review Materials, 2019, 3, .	2.4	0