

Thomas Baumert

List of Publications by Year in descending order

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146
papers

7,636
citations

50170

46
h-index

74018

75
g-index

156
all docs

156
docs citations

156
times ranked

3585
citing authors

#	ARTICLE	IF	CITATIONS
1	Control of Chemical Reactions by Feedback-Optimized Phase-Shaped Femtosecond Laser Pulses. , 1998, 282, 919-922.		1,482
2	Femtosecond pulse shaping by an evolutionary algorithm with feedback. Applied Physics B: Lasers and Optics, 1997, 65, 779-782.	1.1	305
3	Femtosecond time-resolved molecular multiphoton ionization: The Na ₂ system. Physical Review Letters, 1991, 67, 3753-3756.	2.9	250
4	Quantum Control by Ultrafast Polarization Shaping. Physical Review Letters, 2004, 92, 208301.	2.9	244
5	Circular Dichroism in the Photoelectron Angular Distributions of Camphor and Fenchone from Multiphoton Ionization with Femtosecond Laser Pulses. Angewandte Chemie - International Edition, 2012, 51, 5001-5005.	7.2	218
6	FEMTOSECOND LASER PHOTOELECTRON SPECTROSCOPY ON ATOMS AND SMALL MOLECULES: Prototype Studies in Quantum Control. Annual Review of Physical Chemistry, 2005, 56, 25-56.	4.8	195
7	Control of ionization processes in high band gap materials via tailored femtosecond pulses. Optics Express, 2007, 15, 17855.	1.7	166
8	Femtosecond pump-probe study of the spreading and recurrence of a vibrational wave packet in Na ₂ . Chemical Physics Letters, 1992, 191, 639-644.	1.2	143
9	Femtosecond pump-probe photoelectron spectroscopy: Mapping of vibrational wave-packet motion. Physical Review A, 1996, 54, R4605-R4608.	1.0	136
10	Femtosecond laser-induced-breakdown spectrometry for Ca ²⁺ analysis of biological samples with high spatial resolution. Applied Physics B: Lasers and Optics, 2003, 77, 391-397.	1.1	129
11	High laser field effects in multiphoton ionization of Na ₂ . Experiment and quantum calculations. Chemical Physics Letters, 1992, 200, 488-494.	1.2	127
12	Interferences of Ultrashort Free Electron Wave Packets. Physical Review Letters, 2002, 89, 173001.	2.9	124
13	Coherent control by a single phase shaped femtosecond laser pulse. Chemical Physics Letters, 1996, 259, 488-494.	1.2	123
14	Femtosecond real-time probing of reactions. XI. The elementary OCIO fragmentation. Journal of Chemical Physics, 1993, 99, 4430-4440.	1.2	114
15	Femtosecond strong-field quantum control with sinusoidally phase-modulated pulses. Physical Review A, 2006, 73, .	1.0	111
16	Femtosecond time-resolved wave packet motion in molecular multiphoton ionization and fragmentation. The Journal of Physical Chemistry, 1991, 95, 8103-8110.	2.9	108
17	The ultrafast photodissociation of Fe(CO) ₅ in the gas phase. Journal of Chemical Physics, 1998, 108, 5799-5811.	1.2	97
18	Three-dimensional tomographic reconstruction of ultrashort free electron wave packets. Applied Physics B: Lasers and Optics, 2009, 95, 647-651.	1.1	89

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37	Femtosecond Spectroscopy of Molecules and Clusters ¹¹ Work has been performed at the University of Freiburg, Germany.. <i>Advances in Atomic, Molecular and Optical Physics</i> , 1995, 35, 163-208.	2.3	59
38	Real-time observation of transient electron density in water irradiated with tailored femtosecond laser pulses. <i>New Journal of Physics</i> , 2012, 14, 075021.	1.2	59
39	Femtosecond probing of sodium cluster ionNan+fragmentation. <i>Physical Review Letters</i> , 1992, 69, 1512-1515.	2.9	57
40	Spatio-temporal resolution studies on a highly compact ultrafast electron diffractometer. <i>New Journal of Physics</i> , 2015, 17, 043050.	1.2	56
41	Quantum control and quantum control landscapes using intense shaped femtosecond pulses. <i>Journal of Modern Optics</i> , 2005, 52, 2187-2195.	0.6	54
42	Diode-laser-seeded optical parametric oscillator for airborne water vapor DIAL application in the upper troposphere and lower stratosphere. <i>Applied Physics B: Lasers and Optics</i> , 1998, 67, 427-431.	1.1	53
43	Quantum control by ultrafast dressed states tailoring. <i>Chemical Physics Letters</i> , 2006, 419, 184-190.	1.2	53
44	Emission signal enhancement of laser ablation of metals (aluminum and titanium) by time delayed femtosecond double pulses from femtoseconds to nanoseconds. <i>Applied Surface Science</i> , 2014, 302, 291-298.	3.1	53
45	Mapping molecular dynamics (Na ₂) in intense laser fields: another dimension to femtochemistry. <i>Chemical Physics Letters</i> , 1999, 312, 447-454.	1.2	52
46	Robust Photon Locking. <i>Physical Review Letters</i> , 2009, 102, 023004.	2.9	50
47	Plasma dynamics of water breakdown at a water surface induced by femtosecond laser pulses. <i>Applied Physics Letters</i> , 2006, 88, 261109.	1.5	49
48	Femtosecond Laser Pulses: Linear Properties, Manipulation, Generation and Measurement. , 2007, , 937-983.		49
49	Strong-field control landscapes of coherent electronic excitation. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2008, 41, 074007.	0.6	47
50	Temporal Airy pulses for controlled high aspect ratio nanomachining of dielectrics. <i>Optica</i> , 2016, 3, 389.	4.8	46
51	Intermediate state dependence of the photoelectron circular dichroism of fenchone observed via femtosecond resonance-enhanced multi-photon ionization. <i>Journal of Chemical Physics</i> , 2017, 147, 013926.	1.2	44
52	Femtosecond time-resolved molecular multiphoton ionization and fragmentation of Na ₂ : experiment and quantum mechanical calculations. <i>Zeitschrift für Physik D-Atoms Molecules and Clusters</i> , 1993, 28, 37-47.	1.0	42
53	Femtosecond real-time probing of reactions. 12. Vectorial dynamics of transition states. <i>The Journal of Physical Chemistry</i> , 1993, 97, 12447-12459.	2.9	41
54	Nanofabrication of Tailored Surface Structures in Dielectrics Using Temporally Shaped Femtosecond-Laser Pulses. <i>ACS Applied Materials & Interfaces</i> , 2015, 7, 6613-6619.	4.0	41

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55	Ultrafast strong field quantum control on K ₂ dimers. <i>Journal of Photochemistry and Photobiology A: Chemistry</i> , 2006, 180, 248-255.	2.0	40
56	Complete Photoionization Experiments via Ultrafast Coherent Control with Polarization Multiplexing. <i>Physical Review Letters</i> , 2014, 112, 223001.	2.9	39
57	Photofragmentation of Na ₂ ⁺ in Intense Femtosecond Laser Fields: From Photodissociation on Light-Induced Potentials to Field Ionization. <i>Physical Review Letters</i> , 2001, 86, 5695-5698.	2.9	37
58	Three-state selective population of dressed states via generalized spectral phase-step modulation. <i>Physical Review A</i> , 2010, 81, .	1.0	37
59	Femtosecond pump-probe photoelectron spectroscopy on Na ₂ : a tool to study basic coherent control schemes. <i>Applied Physics B: Lasers and Optics</i> , 2000, 71, 259-266.	1.1	36
60	Laser amplification in excited dielectrics. <i>Nature Physics</i> , 2018, 14, 74-79.	6.5	36
61	Time-resolved studies of neutral and ionized Nan clusters with femtosecond light pulses. <i>Zeitschrift für Physik D-Atoms Molecules and Clusters</i> , 1993, 26, 131-134.	1.0	34
62	Efficient and robust strong-field control of population transfer in sensitizer dyes with designed femtosecond laser pulses. <i>Physical Chemistry Chemical Physics</i> , 2011, 13, 8733.	1.3	33
63	Charge Oscillation Controlled Molecular Excitation. <i>Physical Review Letters</i> , 2013, 110, 123003.	2.9	33
64	Tomographic Reconstruction of Designer Free-Electron Wave Packets. <i>ChemPhysChem</i> , 2013, 14, 1341-1349.	1.0	32
65	Photoelectron circular dichroism observed in the above-threshold ionization signal from chiral molecules with femtosecond laser pulses. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2016, 49, 02LT01.	0.6	30
66	Improved renormalization of lattice operators: A critical reappraisal. <i>European Physical Journal C</i> , 1998, 4, 145-171.	1.4	29
67	Femtosecond transition state dynamics of cis-stilbene. <i>Applied Physics B: Lasers and Optics</i> , 2001, 72, 105-108.	1.1	29
68	Coherent Control With Femtosecond Laser Pulses. <i>Advances in Chemical Physics</i> , 2007, , 47-82.	0.3	28
69	Femtosecond spectroscopy of the (2)1 ² u + double minimum state of Na ₂ : time domain and frequency spectroscopy. <i>Zeitschrift für Physik D-Atoms Molecules and Clusters</i> , 1996, 36, 265-271.	1.0	26
70	Probing spatial properties of electronic excitation in water after interaction with temporally shaped femtosecond laser pulses: Experiments and simulations. <i>Applied Surface Science</i> , 2016, 374, 235-242.	3.1	26
71	Use of femtosecond laser-induced breakdown spectroscopy (fs-LIBS) for micro-crack analysis on the surface. <i>Engineering Fracture Mechanics</i> , 2010, 77, 1874-1883.	2.0	25
72	Femtosecond real-time probing of reactions. 13. Multiphoton dynamics of mercury iodide (IHgI). <i>The Journal of Physical Chemistry</i> , 1993, 97, 12460-12465.	2.9	24

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73	Molecules in intense femtosecond laser fields. <i>Physica Scripta</i> , 1997, T72, 53-68.	1.2	24
74	Theoretical analysis of femtosecond excitation and fragmentation dynamics of Fe(CO) ₅ . <i>Chemical Physics Letters</i> , 2000, 316, 585-592.	1.2	24
75	Pulse shaping control of alignment dynamics in N ₂ . <i>Journal of Raman Spectroscopy</i> , 2007, 38, 543-550.	1.2	24
76	Coherent Control. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2008, 41, 070201.	0.6	24
77	Morphology of nanoscale structures on fused silica surfaces from interaction with temporally tailored femtosecond pulses. <i>Journal of Laser Applications</i> , 2012, 24, 042002.	0.8	24
78	Changes of the electronic structure along the internuclear coordinate studied by ultrafast photoelectron spectroscopy: the 21 Σ^+ Na ₂ double-minimum state. <i>Chemical Physics Letters</i> , 2003, 376, 457-464.	1.2	23
79	High-resolution resonance-enhanced multiphoton photoelectron circular dichroism. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 7404-7411.	1.3	22
80	Femtosecond time-resolved observation of above-threshold ionization in Na ₂ . <i>Physical Review A</i> , 1997, 55, 1899-1902.	1.0	21
81	Filling a spectral hole via self-phase modulation. <i>Applied Physics Letters</i> , 2005, 87, 121113.	1.5	19
82	Parallel generation of nanochannels in fused silica with a single femtosecond laser pulse: Exploiting the optical near fields of triangular nanoparticles. <i>Applied Physics Letters</i> , 2009, 95, 063101.	1.5	18
83	Control of Ionization Processes in High Band Gap Materials. <i>Journal of Laser Micro Nanoengineering</i> , 2009, 4, 144-151.	0.4	18
84	Tuning nanopatterns on fused silica substrates: a theoretical and experimental approach. <i>Journal of Materials Chemistry</i> , 2011, 21, 4076.	6.7	17
85	Strong Differential Photoion Circular Dichroism in Strong-Field Ionization of Chiral Molecules. <i>Physical Review Letters</i> , 2021, 126, 083201.	2.9	17
86	Temporal Pulse Tailoring in Ultrafast Laser Manufacturing Technologies. <i>Springer Series in Materials Science</i> , 2010, , 121-144.	0.4	17
87	Optimal Control of Atomic, Molecular and Electron Dynamics with Tailored Femtosecond Laser Pulses. , 2005, , 225-266.		16
88	Observation of Photoelectron Circular Dichroism Using a Nanosecond Laser. <i>ChemPhysChem</i> , 2019, 20, 1416-1419.	1.0	16
89	Coherent matter waves for ultrafast laser pulse characterization. <i>Optics Communications</i> , 2006, 264, 285-292.	1.0	15
90	Coupled electron-nuclear wavepacket dynamics in potassium dimers. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2014, 47, 124015.	0.6	15

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91	Local deformation at micro-notches and crack initiation in an intermetallic β -TiAl alloy. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2016, 39, 227-237.	1.7	14
92	Maximum-information photoelectron metrology. <i>Physical Review A</i> , 2015, 92, .	1.0	13
93	Modelling of ultrafast coherent strong-field dynamics in potassium with neural networks. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2008, 41, 074019.	0.6	12
94	Temporal femtosecond pulse tailoring for nanoscale laser processing of wide-bandgap materials. <i>Proceedings of SPIE</i> , 2010, , .	0.8	12
95	Temporal Airy pulses control cell poration. <i>APL Photonics</i> , 2016, 1, 046102.	3.0	12
96	Detecting chirality in mixtures using nanosecond photoelectron circular dichroism. <i>Physical Chemistry Chemical Physics</i> , 2022, 24, 2758-2761.	1.3	12
97	One-parameter control of quantum dynamics using femtosecond pump-probe photoelectron spectroscopy on a model system. <i>Applied Physics B: Lasers and Optics</i> , 2002, 74, s121-s125.	1.1	11
98	Coherent Control of Colloidal Semiconductor Nanocrystals. <i>Journal of Physical Chemistry C</i> , 2013, 117, 11780-11790.	1.5	11
99	Microstructuring of soft organic matter by temporally shaped femtosecond laser pulses. <i>Applied Surface Science</i> , 2014, 302, 231-235.	3.1	10
100	Coherent control of photoelectron wavepacket angular interferograms. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2015, 48, 214004.	0.6	10
101	Ultrafast and Efficient Control of Coherent Electron Dynamics via SPODS. <i>Advances in Chemical Physics</i> , 0, , 235-282.	0.3	10
102	Use of Femtosecond Laser Technique for Studying Physically Small Cracks. <i>International Journal of Fracture</i> , 2006, 139, 561-568.	1.1	9
103	Complete photoionization experiments via ultrafast coherent control with polarization multiplexing. II. Numerics and analysis methodologies. <i>Physical Review A</i> , 2015, 92, .	1.0	9
104	Live cells assessment of opto-poration by a single femtosecond temporal Airy laser pulse. <i>AIP Advances</i> , 2018, 8, 125105.	0.6	9
105	Unveiling nonlinear regimes of light amplification in fused silica with femtosecond imaging spectroscopy. <i>Physical Review Research</i> , 2020, 2, .	1.3	9
106	Complete analysis of a transmission electron diffraction pattern of a MoS ₂ "graphite heterostructure. <i>Ultramicroscopy</i> , 2016, 166, 9-15.	0.8	8
107	Chiral photoelectron angular distributions from ionization of achiral atomic and molecular species. <i>Physical Review Research</i> , 2020, 2, .	1.3	8
108	Control of Ultrafast Electron Dynamics with Shaped Femtosecond Laser Pulses: From Atoms to Solids. <i>Springer Series on Atomic, Optical, and Plasma Physics</i> , 2016, , 63-122.	0.1	7

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109	Coherent control of electrons, atoms and molecules with intense shaped light pulses. Journal of Physics: Conference Series, 2007, 88, 012053.	0.3	6
110	Short and Ultrashort Laser Pulses. , 2012, , 1047-1094.		6
111	Self-referencing circular dichroism ion yield measurements for improved statistics using femtosecond laser pulses. Review of Scientific Instruments, 2021, 92, 033001.	0.6	6
112	Simultaneous observation of transient and final state dynamics in ultrafast strong-field excitation via time-resolved photoelectron spectroscopy. Journal of Modern Optics, 2017, 64, 1042-1053.	0.6	5
113	Local near field assisted ablation of fused silica. Applied Physics A: Materials Science and Processing, 2013, 110, 743-749.	1.1	4
114	Laser interaction with materials: introduction. Applied Optics, 2014, 53, LIM1.	2.1	4
115	Micronotches for studying growth of small cracks. Fatigue and Fracture of Engineering Materials and Structures, 2015, 38, 673-680.	1.7	4
116	The Interplay of Nuclear and Electron Wavepacket Motion in the Control of Molecular Processes: A Theoretical Perspective. Physical Chemistry in Action, 2014, , 213-248.	0.1	3
117	Automated Coherent Control of Chemical Reactions and Pulse Compression by an Evolutionary Algorithm with Feedback. Springer Series in Chemical Physics, 1998, , 471-473.	0.2	3
118	Electron generation in laser-irradiated insulators: theoretical descriptions and their application. , 2008, , .		2
119	Wave packets get a kick. Nature Physics, 2011, 7, 373-374.	6.5	2
120	Efficient attosecond control of electron dynamics in molecules. EPJ Web of Conferences, 2013, 41, 02026.	0.1	2
121	Modelling, design and fabrication of dielectric photonic crystal structures using temporally asymmetric shaped femtosecond laser pulses. , 2014, , .		2
122	Molecular ATI and ATD with Femtosecond Laser Pulses. Springer Series in Chemical Physics, 1996, , 270-271.	0.2	2
123	Femtosecond Pulse Tailoring For Nanoscale Laser Processing Of Wide-Bandgap Materials: Temporal Asymmetric Pulses Versus Frequency Sweeps. , 2010, , .		1
124	Temporally shaped femtosecond laser pulses as direct patterning method for dielectric materials in nanophotonic applications. , 2014, , .		1
125	Photoelectron Circular Dichroism of Bicyclic Ketones from Multiphoton Ionization with Femtosecond Laser Pulses. ChemPhysChem, 2015, 16, 7-7.	1.0	1
126	2D Strong-Field Spectroscopy to Elucidate Impulsive and Adiabatic Ultrafast Electronic Control Schemes in Molecules. , 2021, , 79-112.		1

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127	Ultrafast Switching of Coherent Electronic Excitation: Great Promise for Reaction Control on the Femtosecond Time Scale. Springer Proceedings in Physics, 2009, , 327-335.	0.1	1
128	Femtosecond Dynamics of Molecular and Cluster Ionization and Fragmentation. Springer Series in Chemical Physics, 1993, , 83-86.	0.2	1
129	Principles of femtosecond pulse tailoring for advanced material processing. , 2009, , .		0
130	Nanoscale morphology resulting from interaction of temporally tailored femtosecond pulses with fused silica. , 2012, , .		0
131	Titelbild: Zirkulardichroismus in den Photoelektronen-Winkelverteilungen von Campher und Fenchon aus der Multiphotonenionisation mit Femtosekunden-Laserpulsen (Angew. Chem. 20/2012). Angewandte Chemie, 2012, 124, 4837-4837.	1.6	0
132	The influence of nuclear motion on the electron dynamics in an efficient sub-cycle control of the molecule K2. , 2013, , .		0
133	Laser interaction with materials: introduction. Journal of the Optical Society of America B: Optical Physics, 2014, 31, LIM1.	0.9	0
134	3. Temporally shaped femtosecond laser pulses for creation of functional sub-100nm structures in dielectrics. , 2015, , 47-72.		0
135	Temporal Airy Pulses: High Aspect Ratio Nanomachining of Dielectrics, Cell Poration and Light Amplification in Excited Dielectrics. , 2019, , .		0
136	Quantum control beyond spectral interference and population control: Can resonant intense laser pulses freeze the population?. , 2004, , 139-142.		0
137	Adaptive polarization control of molecular dynamics. Springer Series in Chemical Physics, 2005, , 864-866.	0.2	0
138	Quantum Control by Ultrafast Dressed State Tailoring. , 2006, , .		0
139	Pulse shaping control of spatially aligned rotational wavepackets of N2 and O2. , 2006, , 510-513.		0
140	Tailored Femtosecond Pulses for Nanoscale Laser Processing of Dielectrics. Springer Series in Chemical Physics, 2009, , 976-978.	0.2	0
141	Photodissociation of Na2 + in intense femtosecond laser fields. Springer Series in Chemical Physics, 1998, , 453-455.	0.2	0
142	Ultrafast Photodissociation Dynamics of Isolated Ironpentacarbonyl. , 1998, , 311-317.		0
143	Material Processing of Dielectrics via Temporally Shaped Femtosecond Laser Pulses as Direct Patterning Method for Nanophotonic Applications. NATO Science for Peace and Security Series A: Chemistry and Biology, 2015, , 29-34.	0.5	0
144	Cell Poration of Fixed and Live Cells by Phase Shaped Femtosecond Pulses. NATO Science for Peace and Security Series B: Physics and Biophysics, 2018, , 399-400.	0.2	0

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145	Revealing regimes of nonlinear light amplification in dielectrics. , 2020, , .		0
146	Unveiling nonlinear light amplification in dielectrics. , 2020, , .		0