

# Thomas Baumert

## List of Publications by Year in descending order

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146  
papers

7,636  
citations

50276

46  
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74163

75  
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156  
all docs

156  
docs citations

156  
times ranked

3585  
citing authors

#	ARTICLE	IF	CITATIONS
1	Detecting chirality in mixtures using nanosecond photoelectron circular dichroism. Physical Chemistry Chemical Physics, 2022, 24, 2758-2761.	2.8	12
2	Strong Differential Photoion Circular Dichroism in Strong-Field Ionization of Chiral Molecules. Physical Review Letters, 2021, 126, 083201.	7.8	17
3	Self-referencing circular dichroism ion yield measurements for improved statistics using femtosecond laser pulses. Review of Scientific Instruments, 2021, 92, 033001.	1.3	6
4	2D Strong-Field Spectroscopy to Elucidate Impulsive and Adiabatic Ultrafast Electronic Control Schemes in Molecules. , 2021, , 79-112.		1
5	High-resolution resonance-enhanced multiphoton photoelectron circular dichroism. Physical Chemistry Chemical Physics, 2020, 22, 7404-7411.	2.8	22
6	Unveiling nonlinear regimes of light amplification in fused silica with femtosecond imaging spectroscopy. Physical Review Research, 2020, 2, .	3.6	9
7	Chiral photoelectron angular distributions from ionization of achiral atomic and molecular species. Physical Review Research, 2020, 2, .	3.6	8
8	Revealing regimes of nonlinear light amplification in dielectrics. , 2020, , .		0
9	Unveiling nonlinear light amplification in dielectrics. , 2020, , .		0
10	Temporal Airy Pulses: High Aspect Ratio Nanomachining of Dielectrics, Cell Poration and Light Amplification in Excited Dielectrics. , 2019, , .		0
11	Observation of Photoelectron Circular Dichroism Using a Nanosecond Laser. ChemPhysChem, 2019, 20, 1416-1419.	2.1	16
12	Laser amplification in excited dielectrics. Nature Physics, 2018, 14, 74-79.	16.7	36
13	Photoelectron Circular Dichroism with Two Overlapping Laser Pulses of Carrier Frequencies $\omega_1$ and $\omega_2$ Linearly Polarized in Two Mutually Orthogonal Directions. Physical Review Letters, 2018, 121, 253201.	7.8	68
14	Live cells assessment of opto-poration by a single femtosecond temporal Airy laser pulse. AIP Advances, 2018, 8, 125105.	1.3	9
15	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.	0.3	0
16	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.	1.3	5
17	Intermediate state dependence of the photoelectron circular dichroism of fenchone observed via femtosecond resonance-enhanced multi-photon ionization. Journal of Chemical Physics, 2017, 147, 013926.	3.0	44
18	Temporal Airy pulses for controlled high aspect ratio nanomachining of dielectrics. Optica, 2016, 3, 389.	9.3	46

#	ARTICLE	IF	CITATIONS
19	Enantiomeric Excess Sensitivity to Below One Percent by Using Femtosecond Photoelectron Circular Dichroism. <i>ChemPhysChem</i> , 2016, 17, 1119-1122.	2.1	69
20	Temporal Airy pulses control cell poration. <i>APL Photonics</i> , 2016, 1, 046102.	5.7	12
21	Complete analysis of a transmission electron diffraction pattern of a MoS <sub>2</sub> "graphite heterostructure. <i>Ultramicroscopy</i> , 2016, 166, 9-15.	1.9	8
22	Local deformation at micro notches and crack initiation in an intermetallic $\beta$ -TiAl alloy. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2016, 39, 227-237.	3.4	14
23	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.	1.5	30
24	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.	6.1	26
25	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.	0.2	7
26	Maximum-information photoelectron metrology. <i>Physical Review A</i> , 2015, 92, .	2.5	13
27	Complete photoionization experiments via ultrafast coherent control with polarization multiplexing. II. Numerics and analysis methodologies. <i>Physical Review A</i> , 2015, 92, .	2.5	9
28	Coherent control of photoelectron wavepacket angular interferograms. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2015, 48, 214004.	1.5	10
29	Photoelectron Circular Dichroism of Bicyclic Ketones from Multiphoton Ionization with Femtosecond Laser Pulses. <i>ChemPhysChem</i> , 2015, 16, 7-7.	2.1	1
30	3. Temporally shaped femtosecond laser pulses for creation of functional sub-100nm structures in dielectrics. , 2015, , 47-72.		0
31	Spatio-temporal resolution studies on a highly compact ultrafast electron diffractometer. <i>New Journal of Physics</i> , 2015, 17, 043050.	2.9	56
32	Nanofabrication of Tailored Surface Structures in Dielectrics Using Temporally Shaped Femtosecond-Laser Pulses. <i>ACS Applied Materials &amp; Interfaces</i> , 2015, 7, 6613-6619.	8.0	41
33	Micronotches for studying growth of small cracks. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2015, 38, 673-680.	3.4	4
34	Photoelectron Circular Dichroism of Bicyclic Ketones from Multiphoton Ionization with Femtosecond Laser Pulses. <i>ChemPhysChem</i> , 2015, 16, 115-137.	2.1	84
35	Material Processing of Dielectrics via Temporally Shaped Femtosecond Laser Pulses as Direct Patterning Method for Nanophotonic Applications. <i>NATO Science for Peace and Security Series A: Chemistry and Biology</i> , 2015, , 29-34.	0.5	0
36	Laser interaction with materials: introduction. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2014, 31, LIM1.	2.1	0

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37	Laser interaction with materials: introduction. Applied Optics, 2014, 53, LIM1.	2.1	4
38	Modelling, design and fabrication of dielectric photonic crystal structures using temporally asymmetric shaped femtosecond laser pulses. , 2014, , .		2
39	Microstructuring of soft organic matter by temporally shaped femtosecond laser pulses. Applied Surface Science, 2014, 302, 231-235.	6.1	10
40	Emission signal enhancement of laser ablation of metals (aluminum and titanium) by time delayed femtosecond double pulses from femtoseconds to nanoseconds. Applied Surface Science, 2014, 302, 291-298.	6.1	53
41	Complete Photoionization Experiments via Ultrafast Coherent Control with Polarization Multiplexing. Physical Review Letters, 2014, 112, 223001.	7.8	39
42	Temporally shaped femtosecond laser pulses as direct patterning method for dielectric materials in nanophotonic applications. , 2014, , .		1
43	The Interplay of Nuclear and Electron Wavepacket Motion in the Control of Molecular Processes: A Theoretical Perspective. Physical Chemistry in Action, 2014, , 213-248.	0.6	3
44	Coupled electron-nuclear wavepacket dynamics in potassium dimers. Journal of Physics B: Atomic, Molecular and Optical Physics, 2014, 47, 124015.	1.5	15
45	Local near field assisted ablation of fused silica. Applied Physics A: Materials Science and Processing, 2013, 110, 743-749.	2.3	4
46	Charge Oscillation Controlled Molecular Excitation. Physical Review Letters, 2013, 110, 123003.	7.8	33
47	Tomographic Reconstruction of Designer Freeâ€Electron Wave Packets. ChemPhysChem, 2013, 14, 1341-1349.	2.1	32
48	Coherent Control of Colloidal Semiconductor Nanocrystals. Journal of Physical Chemistry C, 2013, 117, 11780-11790.	3.1	11
49	The influence of nuclear motion on the electron dynamics in an efficient sub-cycle control of the molecule K2. , 2013, , .		0
50	Efficient attosecond control of electron dynamics in molecules. EPJ Web of Conferences, 2013, 41, 02026.	0.3	2
51	Nanoscale morphology resulting from interaction of temporally tailored femtosecond pulses with fused silica. , 2012, , .		0
52	Real-time observation of transient electron density in water irradiated with tailored femtosecond laser pulses. New Journal of Physics, 2012, 14, 075021.	2.9	59
53	Morphology of nanoscale structures on fused silica surfaces from interaction with temporally tailored femtosecond pulses. Journal of Laser Applications, 2012, 24, 042002.	1.7	24
54	Short and Ultrashort Laser Pulses. , 2012, , 1047-1094.		6

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55	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.	2.0	0
56	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.	13.8	218
57	Efficient and robust strong-field control of population transfer in sensitizer dyes with designed femtosecond laser pulses. Physical Chemistry Chemical Physics, 2011, 13, 8733.	2.8	33
58	Tuning nanopatterns on fused silica substrates: a theoretical and experimental approach. Journal of Materials Chemistry, 2011, 21, 4076.	6.7	17
59	Zeptosecond precision pulse shaping. Optics Express, 2011, 19, 11638.	3.4	83
60	Wave packets get a kick. Nature Physics, 2011, 7, 373-374.	16.7	2
61	Ultrafast laser control of electron dynamics in atoms, molecules and solids. Faraday Discussions, 2011, 153, 9.	3.2	73
62	Temporal femtosecond pulse tailoring for nanoscale laser processing of wide-bandgap materials. Proceedings of SPIE, 2010, , .	0.8	12
63	Femtosecond Pulse Tailoring For Nanoscale Laser Processing Of Wide-Bandgap Materials: Temporal Asymmetric Pulses Versus Frequency Sweeps. , 2010, , .		1
64	Use of femtosecond laser-induced breakdown spectroscopy (fs-LIBS) for micro-crack analysis on the surface. Engineering Fracture Mechanics, 2010, 77, 1874-1883.	4.3	25
65	Three-state selective population of dressed states via generalized spectral phase-step modulation. Physical Review A, 2010, 81, .	2.5	37
66	Temporal Pulse Tailoring in Ultrafast Laser Manufacturing Technologies. Springer Series in Materials Science, 2010, , 121-144.	0.6	17
67	Robust Photon Locking. Physical Review Letters, 2009, 102, 023004.	7.8	50
68	Principles of femtosecond pulse tailoring for advanced material processing. , 2009, , .		0
69	Parallel generation of nanochannels in fused silica with a single femtosecond laser pulse: Exploiting the optical near fields of triangular nanoparticles. Applied Physics Letters, 2009, 95, 063101.	3.3	18
70	Coherent strong-field control of multiple states by a single chirped femtosecond laser pulse. New Journal of Physics, 2009, 11, 105051.	2.9	75
71	Photoelectron angular distributions from strong-field coherent electronic excitation. Applied Physics B: Lasers and Optics, 2009, 95, 245-259.	2.2	67
72	Three-dimensional tomographic reconstruction of ultrashort free electron wave packets. Applied Physics B: Lasers and Optics, 2009, 95, 647-651.	2.2	89

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73	Ultrafast Switching of Coherent Electronic Excitation: Great Promise for Reaction Control on the Femtosecond Time Scale. Springer Proceedings in Physics, 2009, , 327-335.	0.2	1
74	Control of Ionization Processes in High Band Gap Materials. Journal of Laser Micro Nanoengineering, 2009, 4, 144-151.	0.1	18
75	Tailored Femtosecond Pulses for Nanoscale Laser Processing of Dielectrics. Springer Series in Chemical Physics, 2009, , 976-978.	0.2	0
76	Material processing of dielectrics with temporally asymmetric shaped femtosecond laser pulses on the nanometer scale. Applied Physics A: Materials Science and Processing, 2008, 92, 749-753.	2.3	73
77	Strong-field control landscapes of coherent electronic excitation. Journal of Physics B: Atomic, Molecular and Optical Physics, 2008, 41, 074007.	1.5	47
78	Modelling of ultrafast coherent strong-field dynamics in potassium with neural networks. Journal of Physics B: Atomic, Molecular and Optical Physics, 2008, 41, 074019.	1.5	12
79	Coherent Control. Journal of Physics B: Atomic, Molecular and Optical Physics, 2008, 41, 070201.	1.5	24
80	Electron generation in laser-irradiated insulators: theoretical descriptions and their application. , 2008, , .		2
81	Coherent Control With Femtosecond Laser Pulses. Advances in Chemical Physics, 2007, , 47-82.	0.3	28
82	Coherent control of electrons, atoms and molecules with intense shaped light pulses. Journal of Physics: Conference Series, 2007, 88, 012053.	0.4	6
83	Control of ionization processes in high band gap materials via tailored femtosecond pulses. Optics Express, 2007, 15, 17855.	3.4	166
84	Pulse shaping control of alignment dynamics in N2. Journal of Raman Spectroscopy, 2007, 38, 543-550.	2.5	24
85	Femtosecond Laser Pulses: Linear Properties, Manipulation, Generation and Measurement. , 2007, , 937-983.		49
86	Plasma dynamics of water breakdown at a water surface induced by femtosecond laser pulses. Applied Physics Letters, 2006, 88, 261109.	3.3	49
87	Quantum control by ultrafast dressed states tailoring. Chemical Physics Letters, 2006, 419, 184-190.	2.6	53
88	Coherent matter waves for ultrafast laser pulse characterization. Optics Communications, 2006, 264, 285-292.	2.1	15
89	Ultrafast strong field quantum control on K2 dimers. Journal of Photochemistry and Photobiology A: Chemistry, 2006, 180, 248-255.	3.9	40
90	Use of Femtosecond Laser Technique for Studying Physically Small Cracks. International Journal of Fracture, 2006, 139, 561-568.	2.2	9

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91	Quantum control by selective population of dressed states using intense chirped femtosecond laser pulses. Applied Physics B: Lasers and Optics, 2006, 82, 183-188.	2.2	74
92	Femtosecond strong-field quantum control with sinusoidally phase-modulated pulses. Physical Review A, 2006, 73, .	2.5	111
93	Adaptive control of molecular alignment. Physical Review A, 2006, 73, .	2.5	81
94	Quantum Control by Ultrafast Dressed State Tailoring. , 2006, , .		0
95	Pulse shaping control of spatially aligned rotational wavepackets of N2 and O2. , 2006, , 510-513.		0
96	Optimal Control of Atomic, Molecular and Electron Dynamics with Tailored Femtosecond Laser Pulses. , 2005, , 225-266.		16
97	Strong field quantum control by selective population of dressed states. Journal of Optics B: Quantum and Semiclassical Optics, 2005, 7, S270-S276.	1.4	63
98	Filling a spectral hole via self-phase modulation. Applied Physics Letters, 2005, 87, 121113.	3.3	19
99	FEMTOSECOND LASER PHOTOELECTRON SPECTROSCOPY ON ATOMS AND SMALL MOLECULES: Prototype Studies in Quantum Control. Annual Review of Physical Chemistry, 2005, 56, 25-56.	10.8	195
100	Quantum control and quantum control landscapes using intense shaped femtosecond pulses. Journal of Modern Optics, 2005, 52, 2187-2195.	1.3	54
101	Adaptive polarization control of molecular dynamics. Springer Series in Chemical Physics, 2005, , 864-866.	0.2	0
102	Quantum Control by Ultrafast Polarization Shaping. Physical Review Letters, 2004, 92, 208301.	7.8	244
103	Phase control of a two-photon transition with shaped femtosecond laser-pulse sequences. Physical Review A, 2004, 70, .	2.5	86
104	Quantum control beyond spectral interference and population control: Can resonant intense laser pulses freeze the population?. , 2004, , 139-142.		0
105	Femtosecond laser-induced-breakdown spectrometry for Ca <sup>2+</sup> analysis of biological samples with high spatial resolution. Applied Physics B: Lasers and Optics, 2003, 77, 391-397.	2.2	129
106	Changes of the electronic structure along the internuclear coordinate studied by ultrafast photoelectron spectroscopy: the 21 $\Sigma^+$ Na <sub>2</sub> double-minimum state. Chemical Physics Letters, 2003, 376, 457-464.	2.6	23
107	Control of interferences in an Autler-Townes doublet: Symmetry of control parameters. Physical Review A, 2003, 68, .	2.5	80
108	Compact, robust, and flexible setup for femtosecond pulse shaping. Review of Scientific Instruments, 2003, 74, 4950-4953.	1.3	81

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109	Interferences of Ultrashort Free Electron Wave Packets. <i>Physical Review Letters</i> , 2002, 89, 173001.	7.8	124
110	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.	2.2	11
111	Femtosecond transition state dynamics of cis-stilbene. <i>Applied Physics B: Lasers and Optics</i> , 2001, 72, 105-108.	2.2	29
112	Photofragmentation of Na <sub>2</sub> in Intense Femtosecond Laser Fields: From Photodissociation on Light-Induced Potentials to Field Ionization. <i>Physical Review Letters</i> , 2001, 86, 5695-5698.	7.8	37
113	Theoretical analysis of femtosecond excitation and fragmentation dynamics of Fe(CO) <sub>5</sub> . <i>Chemical Physics Letters</i> , 2000, 316, 585-592.	2.6	24
114	Femtosecond pump-probe photoelectron spectroscopy on Na <sub>2</sub> : a tool to study basic coherent control schemes. <i>Applied Physics B: Lasers and Optics</i> , 2000, 71, 259-266.	2.2	36
115	Mapping molecular dynamics (Na <sub>2</sub> ) in intense laser fields: another dimension to femtochemistry. <i>Chemical Physics Letters</i> , 1999, 312, 447-454.	2.6	52
116	Improved renormalization of lattice operators: A critical reappraisal. <i>European Physical Journal C</i> , 1998, 4, 145-171.	3.9	29
117	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.	2.2	53
118	The ultrafast photodissociation of Fe(CO) <sub>5</sub> in the gas phase. <i>Journal of Chemical Physics</i> , 1998, 108, 5799-5811.	3.0	97
119	Control of Chemical Reactions by Feedback-Optimized Phase-Shaped Femtosecond Laser Pulses. , 1998, 282, 919-922.		1,482
120	Automated Coherent Control of Chemical Reactions and Pulse Compression by an Evolutionary Algorithm with Feedback. <i>Springer Series in Chemical Physics</i> , 1998, , 471-473.	0.2	3
121	Photodissociation of Na <sub>2</sub> + in intense femtosecond laser fields. <i>Springer Series in Chemical Physics</i> , 1998, , 453-455.	0.2	0
122	Ultrafast Photodissociation Dynamics of Isolated Ironpentacarbonyl. , 1998, , 311-317.		0
123	Femtosecond time-resolved observation of above-threshold ionization in Na <sub>2</sub> . <i>Physical Review A</i> , 1997, 55, 1899-1902.	2.5	21
124	Molecules in intense femtosecond laser fields. <i>Physica Scripta</i> , 1997, T72, 53-68.	2.5	24
125	Femtosecond pulse shaping by an evolutionary algorithm with feedback. <i>Applied Physics B: Lasers and Optics</i> , 1997, 65, 779-782.	2.2	305
126	Femtosecond photodissociation dynamics of Fe(CO) <sub>5</sub> in the gas phase. <i>Chemical Physics Letters</i> , 1997, 267, 141-148.	2.6	70



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127	Femtosecond spectroscopy of the $(2)1^2 u +$ double minimum state of Na <sub>2</sub> : time domain and frequency spectroscopy. Zeitschrift für Physik D-Atoms Molecules and Clusters, 1996, 36, 265-271.	1.0	26
128	Coherent control by a single phase shaped femtosecond laser pulse. Chemical Physics Letters, 1996, 259, 488-494.	2.6	123
129	Femtosecond pump-probe photoelectron spectroscopy: Mapping of vibrational wave-packet motion. Physical Review A, 1996, 54, R4605-R4608.	2.5	136
130	Molecular ATI and ATD with Femtosecond Laser Pulses. Springer Series in Chemical Physics, 1996, , 270-271.	0.2	2
131	Femtosecond Spectroscopy of Molecules and Clusters11Work has been performed at the University of Freiburg, Germany.. Advances in Atomic, Molecular and Optical Physics, 1995, 35, 163-208.	2.3	59
132	Fundamental Interactions of Molecules (Na <sub>2</sub> , Na <sub>3</sub> ) with Intense Femtosecond Laser Pulses. Israel Journal of Chemistry, 1994, 34, 103-114.	2.3	76
133	Femtosecond two-photon ionization spectroscopy of the B state of Na <sub>3</sub> clusters. Chemical Physics Letters, 1993, 209, 29-34.	2.6	81
134	Time-resolved studies of neutral and ionized Nan clusters with femtosecond light pulses. Zeitschrift für Physik D-Atoms Molecules and Clusters, 1993, 26, 131-134.	1.0	34
135	Femtosecond time-resolved molecular multiphoton ionization and fragmentation of Na <sub>2</sub> : experiment and quantum mechanical calculations. Zeitschrift für Physik D-Atoms Molecules and Clusters, 1993, 28, 37-47.	1.0	42
136	Femtosecond real-time probing of reactions. 12. Vectorial dynamics of transition states. The Journal of Physical Chemistry, 1993, 97, 12447-12459.	2.9	41
137	Femtosecond real-time probing of reactions. 13. Multiphoton dynamics of mercury iodide (IHgI). The Journal of Physical Chemistry, 1993, 97, 12460-12465.	2.9	24
138	Femtosecond real-time probing of reactions. XI. The elementary OCIO fragmentation. Journal of Chemical Physics, 1993, 99, 4430-4440.	3.0	114
139	Femtosecond Dynamics of Molecular and Cluster Ionization and Fragmentation. Springer Series in Chemical Physics, 1993, , 83-86.	0.2	1
140	Femtosecond probing of sodium cluster ionNan+fragmentation. Physical Review Letters, 1992, 69, 1512-1515.	7.8	57
141	High laser field effects in multiphoton ionization of Na <sub>2</sub> . Experiment and quantum calculations. Chemical Physics Letters, 1992, 200, 488-494.	2.6	127
142	Femtosecond pump-probe study of the spreading and recurrence of a vibrational wave packet in Na <sub>2</sub> . Chemical Physics Letters, 1992, 191, 639-644.	2.6	143
143	Femtosecond time-resolved molecular multiphoton ionization: TheNa <sub>2</sub> system. Physical Review Letters, 1991, 67, 3753-3756.	7.8	250
144	Femtosecond time-resolved wave packet motion in molecular multiphoton ionization and fragmentation. The Journal of Physical Chemistry, 1991, 95, 8103-8110.	2.9	108

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145	Femtosecond spectroscopy of molecular autoionization and fragmentation. Physical Review Letters, 1990, 64, 733-736.	7.8	83
146	Ultrafast and Efficient Control of Coherent Electron Dynamics via SPODS. Advances in Chemical Physics, 0, , 235-282.	0.3	10