Charles A Schmuttenmaer

List of Publications by Citations

86 papers	6,347 citations	39 h-index	79 g-index
102 ext. papers	7,406 ext. citations	9.9 avg, IF	6.04 L-index

#	Paper	IF	Citations
86	The 2017 terahertz science and technology roadmap. *Journal Physics D: Applied Physics*, **2017**, 50, 043001	3	724
85	Exploring dynamics in the far-infrared with terahertz spectroscopy. *Chemical Reviews*, **2004**, 104, 1759-79	38.1	472
84	Transient photoconductivity in GaAs as measured by time-resolved terahertz spectroscopy. *Physical Review B*, **2000**, 62, 15764-15777	3.3	379
83	Conductivity of ZnO nanowires, nanoparticles, and thin films using time-resolved terahertz spectroscopy. *Journal of Physical Chemistry B*, **2006**, 110, 25229-39	3.4	329
82	Light-driven water oxidation for solar fuels. *Coordination Chemistry Reviews*, **2012**, 256, 2503-2520	23.2	307
81	A visible light water-splitting cell with a photoanode formed by codeposition of a high-potential porphyrin and an iridium water-oxidation catalyst. *Energy and Environmental Science*, **2011**, 4, 2389	35.4	237
80	A molecular catalyst for water oxidation that binds to metal oxide surfaces. *Nature Communications* , **2015**, 6, 6469	17.4	218
79	Exciton-like trap states limit electron mobility in TiO2 nanotubes. *Nature Nanotechnology*, **2010**, 5, 769-72	38.7	214
78	Facet-dependent photoelectrochemical performance of TiO2 nanostructures: an experimental and computational study. *Journal of the American Chemical Society*, **2015**, 137, 1520-9	16.4	205
77	Carrier Localization and Cooling in Dye-Sensitized Nanocrystalline Titanium Dioxide. *Journal of Physical Chemistry B*, **2002**, 106, 11716-11719	3.4	188
76	Synergistic effect between anatase and rutile TiO2 nanoparticles in dye-sensitized solar cells. *Dalton Transactions*, **2009**, 10078-85	4.3	178
75	Subpicosecond carrier dynamics in low-temperature grown GaAs as measured by time-resolved terahertz spectroscopy. *Journal of Applied Physics*, **2001**, 90, 5915-5923	2.5	171
74	Spectroscopy and dynamics of mixtures of water with acetone, acetonitrile, and methanol. *Journal of Chemical Physics*, **2000**, 113, 11222-11236	3.9	168
73	Tutorial: An introduction to terahertz time domain spectroscopy (THz-TDS). *Journal of Applied Physics*, **2018**, 124, 231101	2.5	144
72	Acetylacetonate anchors for robust functionalization of TiO2 nanoparticles with Mn(II)-terpyridine complexes. *Journal of the American Chemical Society*, **2008**, 130, 14329-38	16.4	137
71	Size-Dependent Photoconductivity in CdSe Nanoparticles as Measured by Time-Resolved Terahertz Spectroscopy. *Nano Letters*, **2002**, 2, 983-987	11.5	113
70	Plasmonic Enhancement of Dye-Sensitized Solar Cells Using Core–Shell–Shell Nanostructures. *Journal of Physical Chemistry C*, **2013**, 117, 927-934	3.8	102

69	Water-stable, hydroxamate anchors for functionalization of TiO2 surfaces with ultrafast interfacial electron transfer. *Energy and Environmental Science*, **2010**, 3, 917	35.4	94
68	Hydroxamate anchors for improved photoconversion in dye-sensitized solar cells. *Inorganic Chemistry*, **2013**, 52, 6752-64	5.1	89
67	Modular Assembly of High-Potential Zinc Porphyrin Photosensitizers Attached to TiO2 with a Series of Anchoring Groups. *Journal of Physical Chemistry C*, **2013**, 117, 14526-14533	3.8	82
66	Hydroxamate anchors for water-stable attachment to TiO2 nanoparticles. *Energy and Environmental Science*, **2009**, 2, 1173	35.4	82
65	Ultrafast Photooxidation of Mn(II)Terpyridine Complexes Covalently Attached to TiO2 Nanoparticles. *Journal of Physical Chemistry C*, **2007**, 111, 11982-11990	3.8	77
64	Ultrafast carrier dynamics in nanostructures for solar fuels. *Annual Review of Physical Chemistry*, **2014**, 65, 423-47	15.7	76
63	Theory for determination of the low-frequency time-dependent response function in liquids using time-resolved terahertz pulse spectroscopy. *Journal of Chemical Physics*, **1999**, 110, 8589-8596	3.9	70
62	Bioinspired High-Potential Porphyrin Photoanodes. *Journal of Physical Chemistry C*, **2012**, 116, 4892-4902	3.8	61
61	Intermolecular vibrations in hydrophobic amino acid crystals: experiments and calculations. *Journal of Physical Chemistry B*, **2013**, 117, 10444-61	3.4	59
60	Photocurrent Enhancement from Solid-State TripletTriplet Annihilation Upconversion of Low-Intensity, Low-Energy Photons. *ACS Photonics*, **2016**, 3, 784-790	6.3	56
59	Terahertz spectroscopy of enantiopure and racemic polycrystalline valine. *Physical Chemistry Chemical Physics*, **2011**, 13, 11719-30	3.6	53
58	Using the finite-difference time-domain pulse propagation method to simulate time-resolved THz experiments. *Journal of Chemical Physics*, **2001**, 114, 2903-2909	3.9	52
57	Rutile TiO2 as an Anode Material for Water-Splitting Dye-Sensitized Photoelectrochemical Cells. *ACS Energy Letters*, **2016**, 1, 603-606	20.1	51
56	Electron Injection Dynamics from Photoexcited Porphyrin Dyes into SnO2 and TiO2 Nanoparticles. *Journal of Physical Chemistry C*, **2013**, 117, 21662-21670	3.8	51
55	Highly Active NiO Photocathodes for HO Production Enabled via Outer-Sphere Electron Transfer. *Journal of the American Chemical Society*, **2018**, 140, 4079-4084	16.4	50
54	Dynamics of Electron Injection in SnO2/TiO2 Core/Shell Electrodes for Water-Splitting Dye-Sensitized Photoelectrochemical Cells. *Journal of Physical Chemistry Letters*, **2016**, 7, 2930-4	6.4	49
53	Structure and dynamics of nonaqueous mixtures of dipolar liquids. I. Infrared and far-infrared spectroscopy. *Journal of Chemical Physics*, **2000**, 113, 3243-3248	3.9	49
52	Efficiency of Interfacial Electron Transfer from Zn-Porphyrin Dyes into TiO2 Correlated to the Linker Single Molecule Conductance. *Journal of Physical Chemistry C*, **2013**, 117, 24462-24470	3.8	48

51	Structure and dynamics of nonaqueous mixtures of dipolar liquids. II. Molecular dynamics simulations. *Journal of Chemical Physics*, **2000**, 113, 3249-3260	3.9	47
50	Electronic Tuning of Metal Nanoparticles for Highly Efficient Photocatalytic Hydrogen Peroxide Production. *ACS Catalysis*, **2019**, 9, 626-631	13.1	47
49	Ultrafast Electron Injection Dynamics of Photoanodes for Water-Splitting Dye-Sensitized Photoelectrochemical Cells. *Journal of Physical Chemistry C*, **2016**, 120, 5940-5948	3.8	44
48	Single-Atom Pt Catalyst for Effective C–F Bond Activation via Hydrodefluorination. *ACS Catalysis*, **2018**, 8, 9353-9358	13.1	41
47	Interfacial electron transfer in photoanodes based on phosphorus(V) porphyrin sensitizers co-deposited on SnO2 with the Ir(III)Cp* water oxidation precatalyst. *Journal of Materials Chemistry A*, **2015**, 3, 3868-3879	13	35
46	Electron injection dynamics in high-potential porphyrin photoanodes. *Accounts of Chemical Research*, **2015**, 48, 1423-31	24.3	32
45	Computational Design of Intrinsic Molecular Rectifiers Based on Asymmetric Functionalization of N-Phenylbenzamide. *Journal of Chemical Theory and Computation*, **2015**, 11, 5888-96	6.4	29
44	Proton-Induced Trap States, Injection and Recombination Dynamics in Water-Splitting Dye-Sensitized Photoelectrochemical Cells. *ACS Applied Materials & Interfaces*, **2016**, 8, 16727-35	9.5	29
43	Terahertz Spectroscopy of Tetrameric Peptides. *Journal of Physical Chemistry Letters*, **2019**, 10, 2624-2628	6.4	28
42	Controlling the rectification properties of molecular junctions through molecule-electrode coupling. *Nanoscale*, **2016**, 8, 16357-16362	7.7	28
41	Size-Dependent Ultrafast Charge Carrier Dynamics of WO3 for Photoelectrochemical Cells. *Journal of Physical Chemistry C*, **2016**, 120, 14926-14933	3.8	28
40	Direct Interfacial Electron Transfer from High-Potential Porphyrins into Semiconductor Surfaces: A Comparison of Linkers and Anchoring Groups. *Journal of Physical Chemistry C*, **2018**, 122, 13529-13539	3.8	25
39	Optimization of Photoanodes for Photocatalytic Water Oxidation by Combining a Heterogenized Iridium Water-Oxidation Catalyst with a High-Potential Porphyrin Photosensitizer. *ChemSusChem*, **2017**, 10, 4526-4534	8.3	25
38	Efficient measurement of broadband terahertz optical activity. *Applied Physics Letters*, **2012**, 100, 241114	3.4	25
37	Nanotechnology for catalysis and solar energy conversion. *Nanotechnology*, **2021**, 32, 042003	3.4	24
36	Direct Evidence of Photoinduced Charge Transport Mechanism in 2D Conductive Metal Organic Frameworks. *Journal of the American Chemical Society*, **2020**, 142, 21050-21058	16.4	23
35	Metal-Organic Framework Photoconductivity via Time-Resolved Terahertz Spectroscopy. *Journal of the American Chemical Society*, **2019**, 141, 9793-9797	16.4	22
34	Terahertz Spectroscopy of Histidine Enantiomers and Polymorphs. *Journal of Infrared, Millimeter, and Terahertz Waves*, **2011**, 32, 691-698	2.2	22

33	High-Potential Porphyrins Supported on SnO2 and TiO2 Surfaces for Photoelectrochemical Applications. *Journal of Physical Chemistry C*, **2016**, 120, 28971-28982	3.8	21
32	Antenna-Coupled Niobium Bolometers for Terahertz Spectroscopy. *IEEE Transactions on Applied Superconductivity*, **2007**, 17, 412-415	1.8	20
31	Applicability of the thin-film approximation in terahertz photoconductivity measurements. *Applied Physics Letters*, **2018**, 113, 233901	3.4	20
30	Terahertz Spectroscopy and Density Functional Theory Calculations of dl-Norleucine and dl-Methionine. *Journal of Physical Chemistry A*, **2018**, 122, 5978-5982	2.8	19
29	Terahertz Spectroscopy of Emerging Materials. *Journal of Physical Chemistry C*, **2020**, 124, 22335-22346	3.8	19
28	Frequency-Dependent Terahertz Transient Photoconductivity of Mesoporous SnO2 Films. *Journal of Physical Chemistry C*, **2017**, 121, 15949-15956	3.8	18
27	Linker rectifiers for covalent attachment of transition-metal catalysts to metal-oxide surfaces. *ChemPhysChem*, **2014**, 15, 1138-47	3.2	18
26	Exploring the solid state phase transition in dl-norvaline with terahertz spectroscopy. *Physical Chemistry Chemical Physics*, **2017**, 20, 276-283	3.6	18
25	Functioning Photoelectrochemical Devices Studied with Time-Resolved Terahertz Spectroscopy. *Journal of Physical Chemistry Letters*, **2015**, 6, 3257-3262	6.4	17
24	Molecular design of light-harvesting photosensitizers: effect of varied linker conjugation on interfacial electron transfer. *Physical Chemistry Chemical Physics*, **2016**, 18, 18678-82	3.6	17
23	Carrier dynamics in bulk ZnO. I. Intrinsic conductivity measured by terahertz time-domain spectroscopy. *Physical Review B*, **2009**, 80,	3.3	17
22	Fluctuation-Induced Tunneling Conductivity in Nanoporous TiO2 Thin Films. *Journal of Physical Chemistry Letters*, **2011**, 2, 1931-1936	6.4	16
21	A Terahertz-Transparent Electrochemical Cell for In Situ Terahertz Spectroelectrochemistry. *Analytical Chemistry*, **2018**, 90, 4389-4396	7.8	14
20	Carrier dynamics in bulk ZnO. II. Transient photoconductivity measured by time-resolved terahertz spectroscopy. *Physical Review B*, **2009**, 80,	3.3	14
19	Solvent Dependence of Lateral Charge Transfer in a Porphyrin Monolayer. *ACS Energy Letters*, **2017**, 2, 168-173	20.1	11
18	Collaboration between experiment and theory in solar fuels research. *Chemical Society Reviews*, **2019**, 48, 1865-1873	58.5	11
17	Linker Length-Dependent Electron-Injection Dynamics of Trimesitylporphyrins on SnO2 Films. *Journal of Physical Chemistry C*, **2017**, 121, 22690-22699	3.8	10
16	Single Copper Atoms Enhance Photoconductivity in g-CN. *Journal of Physical Chemistry Letters*, **2020**, 11, 8873-8879	6.4	10

15	Surface-Induced Deprotection of THP-Protected Hydroxamic Acids on Titanium Dioxide. *Journal of Physical Chemistry C*, **2016**, 120, 12495-12502	3.8	9
14	A conductive metal-organic framework photoanode. *Chemical Science*, **2020**, 11, 9593-9603	9.4	9
13	Terahertz Spectroscopy and Density Functional Theory Investigation of the Dipeptide L-Carnosine. *Journal of Infrared, Millimeter, and Terahertz Waves*, **2020**, 41, 1366-1377	2.2	7
12	Optimization of Terahertz Metamaterials for Near-Field Sensing of Chiral Substances. *IEEE Transactions on Terahertz Science and Technology*, **2017**, 7, 755-764	3.4	7
11	Terahertz spectroscopic polarimetry of generalized anisotropic media composed of Archimedean spiral arrays: Experiments and simulations. *Journal of Chemical Physics*, **2016**, 144, 174705	3.9	6
10	Structure–function relationships in single molecule rectification by N-phenylbenzamide derivatives. *New Journal of Chemistry*, **2016**, 40, 7373-7378	3.6	6
9	Suspensions of Semiconducting Nanoparticles in Nafion for Transient Spectroscopy and Terahertz Photoconductivity Measurements. *Analytical Chemistry*, **2020**, 92, 4187-4192	7.8	5
8	Influence of Dye Sensitizers on Charge Dynamics in SnO2 Nanoparticles Probed with THz Spectroscopy. *Journal of Physical Chemistry C*, **2020**, 124, 3482-3488	3.8	5
7	Interrogating Light-initiated Dynamics in Metal-Organic Frameworks with Time-resolved Spectroscopy. *Chemical Reviews*, **2021**,	68.1	4
6	Ultrafast proton-assisted tunneling through ZrO in dye-sensitized SnO-core/ZrO-shell films. *Chemical Communications*, **2018**, 54, 7971-7974	5.8	3
5	Tuning the Conduction Band for Interfacial Electron Transfer: Dye-Sensitized SnxTi1−xO2 Photoanodes for Water Splitting. *ACS Applied Energy Materials*, **2021**, 4, 4695-4703	6.1	2
4	A new method for measuring intramolecular charge transfer. *Science Progress*, **2002**, 85, 175-97	1.1	1
3	Identifying Peptide Structures with THz Spectroscopy **2018**,		1
2	Nelly: A User-Friendly and Open-Source Implementation of Tree-Based Complex Refractive Index Analysis for Terahertz Spectroscopy. *Analytical Chemistry*, **2021**, 93, 11243-11250	7.8	1
1	Ultrafast terahertz spectroscopy provides insight into charge transfer efficiency and dynamics in artificial photosynthesis. *Photosynthesis Research*, **2020**, 1	3.7	0