Francesca Maria Toma

List of Publications by Year
in descending order

79 papers	6,374 citations	57631 44 h-index	64668 79 g-index
80 all docs	80 docs citations	80 times ranked	10999 citing authors

#	Article	IF	Citations
1	The case for data science in experimental chemistry: examples and recommendations. Nature Reviews Chemistry, 2022, 6, 357-370.	13.8	29
2	Development of a photoelectrochemically self-improving Si/GaN photocathode for efficient and durable H2 production. Nature Materials, 2021, 20, 1130-1135.	13.3	49
3	Nanoscale Heterogeneities and Compositionâ€“Reactivity Relationships in Copper Vanadate Photoanodes. ACS Applied Materials & Interfaces, 2021, 13, 23575-23583.	4.0	1
4	CO ₂ reduction on pure Cu produces only H ₂ after subsurface O is depleted: Theory and experiment. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	41
5	Approaching 100% Selectivity at Low Potential on Ag for Electrochemical CO₂ Reduction to CO Using a Surface Additive. ACS Catalysis, 2021, 11, 9034-9042.	5.5	29
6	Investigation and mitigation of degradation mechanisms in Cu2O photoelectrodes for CO2 reduction to ethylene. Nature Energy, 2021, 6, 1124-1132.	19.8	85
7	Nanoscale Confinement of Photo-Injected Electrons at Hybrid Interfaces. Journal of Physical Chemistry Letters, 2021, 12, 11951-11959.	2.1	1
8	Chalkboard 2 - How to Make Clean Hydrogen. Electrochemical Society Interface, 2021, 30, 49-56.	0.3	9
9	Revealing Nanoscale Chemical Heterogeneities in Polycrystalline Moâ€“BiVO₄ Thin Films. Small, 2020, 16, e2001600.	5.2	12
10	Catalyst: Qubits from the Bottom Up. CheM, 2020, 6, 795-798.	5.8	9
11	Emergent Degradation Phenomena Demonstrated on Resilient, Flexible, and Scalable Integrated Photoelectrochemical Cells. Advanced Energy Materials, 2020, 10, 2002706.	10.2	8
12	Photoinduced Charge Carrier Dynamics and Electron Injection Efficiencies in Au Nanoparticle-Sensitized TiO₂ Determined with Picosecond Time-Resolved X-ray Photoelectron Spectroscopy. Journal of Physical Chemistry Letters, 2020, 11, 5476-5481.	2.1	18
13	Effects of Surface Roughness on the Electrochemical Reduction of CO₂ over Cu. ACS Energy Letters, 2020, 5, 1206-1214.	8.8	172
14	Correlating Oxidation State and Surface Area to Activity from Operando Studies of Copper CO Electroreduction Catalysts in a Gas-Fed Device. ACS Catalysis, 2020, 10, 8000-8011.	5.5	37
15	Heterogenized Pyridine-Substituted Cobalt(II) Phthalocyanine Yields Reduction of CO₂ by Tuning the Electron Affinity of the Co Center. ACS Applied Materials & Interfaces, 2020, 12, 5251-5258.	4.0	41
16	Aluminum Metalâ€“Organic Framework Triggers Carbon Dioxide Reduction Activity. ACS Applied Energy Materials, 2020, 3, 1286-1291.	2.5	13
17	Solar to fuel: Recent developments in conversion of sunlight into high value chemicals. APL Materials, 2020, 8, .	2.2	2
18	Interface engineering for light-driven water oxidation: unravelling the passivating and catalytic mechanism in BiVO₄ overlayers. Sustainable Energy and Fuels, 2019, 3, 127-135.	2.5	28

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19	Electronic Structure and Performance Bottlenecks of CuFeO₂ Photocathodes. Chemistry of Materials, 2019, 31, 2524-2534.	3.2	43
20	Electrocatalysis at Organicâ€“Metal Interfaces: Identification of Structureâ€“Reactivity Relationships for CO₂ Reduction at Modified Cu Surfaces. Journal of the American Chemical Society, 2019, 141, 7355-7364.	6.6	133
21	Si photocathode with Ag-supported dendritic Cu catalyst for CO₂reduction. Energy and Environmental Science, 2019, 12, 1068-1077.	15.6	93
22	Very High Refractive Index Transition Metal Dichalcogenide Photonic Conformal Coatings by Conversion of ALD Metal Oxides. Scientific Reports, 2019, 9, 2768.	1.6	16
23	Long-term stability studies of a semiconductor photoelectrode in three-electrode configuration. Journal of Materials Chemistry A, 2019, 7, 27612-27619.	5.2	28
24	Operando Observation of Chemical Transformations of Iridium Oxide During Photoelectrochemical Water Oxidation. ACS Applied Energy Materials, 2019, 2, 1371-1379.	2.5	18
25	Effects of Defects on Band Structure and Excitons in WS₂ Revealed by Nanoscale Photoemission Spectroscopy. ACS Nano, 2019, 13, 1284-1291.	7.3	64
26	Composition-Dependent Functionality of Copper Vanadate Photoanodes. ACS Applied Materials & Interfaces, 2018, 10, 10627-10633.	4.0	65
27	Quantification of the loss mechanisms in emerging water splitting photoanodes through empirical extraction of the spatial charge collection efficiency. Energy and Environmental Science, 2018, 11, 904-913.	15.6	24
28	Disentangling interfacial energetics. Nature Energy, 2018, 3, 6-7.	19.8	5
29	Cation-Dependent Light-Induced Halide Demixing in Hybrid Organicâ€“Inorganic Perovskites. Nano Letters, 2018, 18, 3473-3480.	4.5	65
30	Balancing Surface Passivation and Catalysis with Integrated BiVO4/(Feâ€“Ce)Ox Photoanodes in pH 9 Borate Electrolyte. ACS Applied Energy Materials, 2018, , .	2.5	2
31	Disentangling the Role of Surface Chemical Interactions on Interfacial Charge Transport at BiVO₄ Photoanodes. ACS Applied Materials & Interfaces, 2018, 10, 35129-35136.	4.0	9
32	Potential-Sensing Electrochemical AFM Shows CoPi as a Hole Collector and Oxygen Evolution Catalyst on BiVO₄ Water-Splitting Photoanodes. ACS Energy Letters, 2018, 3, 2286-2291.	8.8	96
33	Nanoscale imaging of charge carrier transport in water splitting photoanodes. Nature Communications, 2018, 9, 2597.	5.8	76
34	Band Tailing and Deep Defect States in CH₃NH₃Pb(I_{1â€“x}Br_x)₃ Perovskites As Revealed by Sub-Bandgap Photocurrent. ACS Energy Letters, 2017, 2, 709-715.	8.8	102
35	Fabrication and optical characterization of polystyrene opal templates for the synthesis of scalable, nanoporous (photo)electrocatalytic materials by electrodeposition. Journal of Materials Chemistry A, 2017, 5, 11601-11614.	5.2	32
36	Elucidating the alkaline oxygen evolution reaction mechanism on platinum. Journal of Materials Chemistry A, 2017, 5, 11634-11643.	5.2	109

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37	Determining Atomic-Scale Structure and Composition of Organo-Lead Halide Perovskites by Combining High-Resolution X-ray Absorption Spectroscopy and First-Principles Calculations. ACS Energy Letters, 2017, 2, 1183-1189.	8.8	23
38	Understanding the Oxygen Evolution Reaction Mechanism on CoO_x using Operando Ambient-Pressure X-ray Photoelectron Spectroscopy. Journal of the American Chemical Society, 2017, 139, 8960-8970.	6.6	241
39	Bismuth Vanadate as a Platform for Accelerating Discovery and Development of Complex Transition-Metal Oxide Photoanodes. ACS Energy Letters, 2017, 2, 139-150.	8.8	105
40	A multifunctional biphasic water splitting catalyst tailored for integration with high-performance semiconductor photoanodes. Nature Materials, 2017, 16, 335-341.	13.3	217
41	The role of the CeO₂/BiVO₄ interface in optimized Feâ€“Ce oxide coatings for solar fuels photoanodes. Journal of Materials Chemistry A, 2016, 4, 14356-14363.	5.2	19
42	Discovery of Feâ€“Ce Oxide/BiVO₄ Photoanodes through Combinatorial Exploration of Niâ€“Feâ€“Coâ€“Ce Oxide Coatings. ACS Applied Materials & Interfaces, 2016, 8, 23696-23705.	4.0	35
43	Role of Hydrogen in Defining the n-Type Character of BiVO₄ Photoanodes. Chemistry of Materials, 2016, 28, 5761-5771.	3.2	104
44	Development of solar fuels photoanodes through combinatorial integration of Niâ€“Laâ€“Coâ€“Ce oxide catalysts on BiVO₄. Energy and Environmental Science, 2016, 9, 565-580.	15.6	61
45	High Photoluminescence Quantum Yield in Band Gap Tunable Bromide Containing Mixed Halide Perovskites. Nano Letters, 2016, 16, 800-806.	4.5	269
46	Design of Cationic Multiwalled Carbon Nanotubes as Efficient siRNA Vectors for Lung Cancer Xenograft Eradication. Bioconjugate Chemistry, 2015, 26, 1370-1379.	1.8	58
47	Indirect Bandgap and Optical Properties of Monoclinic Bismuth Vanadate. Journal of Physical Chemistry C, 2015, 119, 2969-2974.	1.5	233
48	Fabrication of Planar Heterojunction Perovskite Solar Cells by Controlled Low-Pressure Vapor Annealing. Journal of Physical Chemistry Letters, 2015, 6, 493-499.	2.1	112
49	Moâ€Doped BiVO₄ Photoanodes Synthesized by Reactive Sputtering. ChemSusChem, 2015, 8, 1066-1071.	3.6	100
50	p-Type Transparent Conducting Oxide/n-Type Semiconductor Heterojunctions for Efficient and Stable Solar Water Oxidation. Journal of the American Chemical Society, 2015, 137, 9595-9603.	6.6	122
51	Decacyclene Triimides: Paving the Road to Universal Nonâ€Fullerene Acceptors for Organic Photovoltaics. Advanced Energy Materials, 2014, 4, 1301007.	10.2	57
52	Efficient and Sustained Photoelectrochemical Water Oxidation by Cobalt Oxide/Silicon Photoanodes with Nanotextured Interfaces. Journal of the American Chemical Society, 2014, 136, 6191-6194.	6.6	204
53	Tunable electrical conductivity in oriented thin films of tetrathiafulvalene-based covalent organic framework. Chemical Science, 2014, 5, 4693-4700.	3.7	295
54	Electronic Structure of Monoclinic BiVO₄. Chemistry of Materials, 2014, 26, 5365-5373.	3.2	356

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55	Knitting the Catalytic Pattern of Artificial Photosynthesis to a Hybrid Graphene Nanotexture. ACS Nano, 2013, 7, 811-817.	7.3	93
56	Selfâ€Assembling Decacyclene Triimides Prepared through a Regioselective Hextuple Friedelâ€“Crafts Carbamylation. Angewandte Chemie - International Edition, 2013, 52, 1446-1451.	7.2	89
57	Carbon Nanotubes Instruct Physiological Growth and Functionally Mature Syncytia: Nongenetic Engineering of Cardiac Myocytes. ACS Nano, 2013, 7, 5746-5756.	7.3	105
58	Carbon Nanotube Scaffolds Instruct Human Dendritic Cells: Modulating Immune Responses by Contacts at the Nanoscale. Nano Letters, 2013, 13, 6098-6105.	4.5	54
59	Highâ€Efficiency Panchromatic Hybrid Schottky Solar Cells. Advanced Materials, 2013, 25, 256-260.	11.1	29
60	Adhesion to Carbon Nanotube Conductive Scaffolds Forces Action-Potential Appearance in Immature Rat Spinal Neurons. PLoS ONE, 2013, 8, e73621.	1.1	53
61	Shaping the beating heart of artificial photosynthesis: oxygenic metal oxide nano-clusters. Energy and Environmental Science, 2012, 5, 5592.	15.6	93
62	Spinal Cord Explants Use Carbon Nanotube Interfaces To Enhance Neurite Outgrowth and To Fortify Synaptic Inputs. ACS Nano, 2012, 6, 2041-2055.	7.3	127
63	Luminescent Blooming of Dendronic Carbon Nanotubes through Ionâ€Pairing Interactions with an Eu^{III} Complex. Chemistry - A European Journal, 2012, 18, 5889-5897.	1.7	18
64	Carbon Nanotubes Promote Growth and Spontaneous Electrical Activity in Cultured Cardiac Myocytes. Nano Letters, 2012, 12, 1831-1838.	4.5	196
65	Polyamine functionalized carbon nanotubes: synthesis, characterization, cytotoxicity and siRNA binding. Journal of Materials Chemistry, 2011, 21, 4850.	6.7	38
66	Multiwalled Carbonâ€Nanotubeâ€Functionalized Microelectrode Arrays Fabricated by Microcontact Printing: Platform for Studying Chemical and Electrical Neuronal Signaling. Small, 2011, 7, 524-530.	5.2	39
67	Tailored Functionalization of Carbon Nanotubes for Electrocatalytic Water Splitting and Sustainable Energy Applications. ChemSusChem, 2011, 4, 1447-1451.	3.6	64
68	Formation of Efficient Catalytic Silver Nanoparticles on Carbon Nanotubes by Adenine Functionalization. Angewandte Chemie - International Edition, 2011, 50, 9893-9897.	7.2	51
69	Carbon Nanotubeâ€“Nucleobase Hybrids: Nanorings from Uracilâ€Modified Singleâ€Walled Carbon Nanotubes. Chemistry - A European Journal, 2011, 17, 6772-6780.	1.7	41
70	Carbon Nanotube Scaffolds Tune Synaptic Strength in Cultured Neural Circuits: Novel Frontiers in Nanomaterialâ€“Tissue Interactions. Journal of Neuroscience, 2011, 31, 12945-12953.	1.7	142
71	Dendron-functionalized multiwalled carbon nanotubes incorporating polyoxometalates for water-splitting catalysis. Pure and Applied Chemistry, 2011, 83, 1529-1542.	0.9	23
72	Potentiometric titration as a straightforward method to assess the number of functional groups on shortened carbon nanotubes. Carbon, 2010, 48, 2447-2454.	5.4	48

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73	Efficient water oxidation at carbon nanotubeâ€“polyoxometalate electrocatalytic interfaces. Nature Chemistry, 2010, 2, 826-831.	6.6	459
74	Enhanced cellular internalization and gene silencing with a series of cationic dendronâ€multiwalled carbon nanotube:siRNA complexes. FASEB Journal, 2010, 24, 4354-4365.	0.2	71
75	Carbon Nanotubes Carrying Cellâ€Adhesion Peptides do not Interfere with Neuronal Functionality. Advanced Materials, 2009, 21, 2903-2908.	11.1	67
76	Microwaveâ€Assisted Functionalization of Carbon Nanostructures in Ionic Liquids. Chemistry - A European Journal, 2009, 15, 12837-12845.	1.7	47
77	Synthesis and Characterization of a Carbon Nanotubeâ^'Dendron Series for Efficient siRNA Delivery. Journal of the American Chemical Society, 2009, 131, 9843-9848.	6.6	168
78	Synthesis and Characterization of Nucleobaseâ^'Carbon Nanotube Hybrids. Journal of the American Chemical Society, 2009, 131, 13555-13562.	6.6	71
79	Photoaddition of Fluphenazine to Nucleophiles in Peptides and Proteins. Possible Cause of Immune Side Effects. Chemical Research in Toxicology, 2007, 20, 1470-1476.	1.7	11